Ovlivňování počasí a klimatu
Jak se nechytit do pasti zvané „chemtrails“

MSc. B.A. Radovan Dluhý-Smith

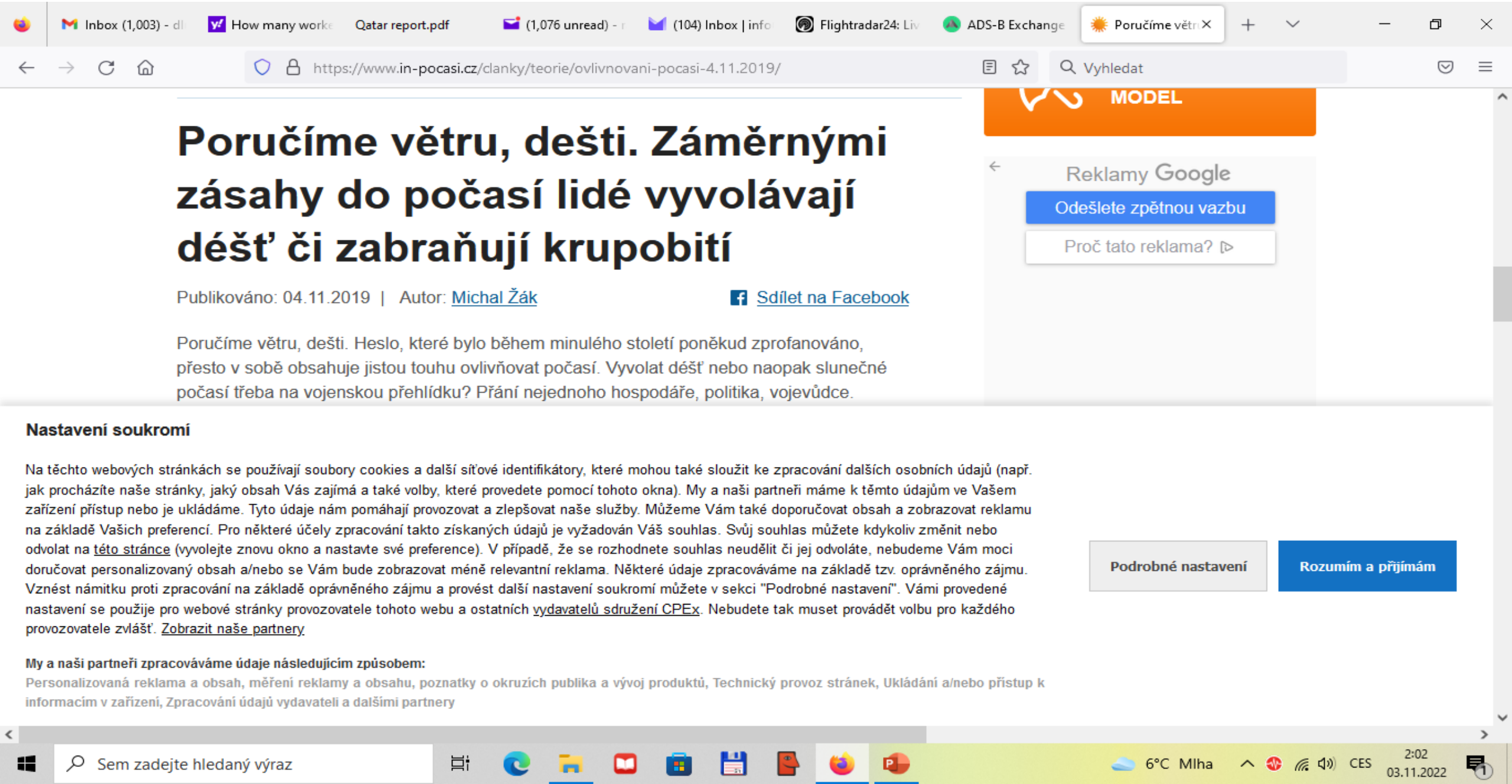
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„Ve VB prší více o víkendu než během týdne.“ Prof. Pavel Jungwirth

„Vdechujeme denně kolem 70 mld. aerosolových částic…“



ČESKÝ MAINSTREAMOVÝ METEOROLOG MICHAL ŽÁK



Dluhy-Smith: Arktida se zahřívá a mocnosti vyhlížejí zmrzlý poklad. Ropu, plyn i vzácné kovy

16. 1. 2020

Od dávných časů lákaly Grónsko a Arktida různé dobrodruhy, ale i vědce, průmyslníky a světové velmoci pro jejich nerostné bohatství a strategické umístění. Velkou překážkou bylo vždy zdejší nehostinné klima. Koneckonců si zde zažil své i moravský cestovatel a vypravěč Jan Eskymo Welzl, který v těchto končinách strávil mnoho let.

Čekání na ih.adscale.de...

Dluhy-Smith: Osévání mraků, ionosférická zrcadla. Co když klima doplácí na pokusy s počasím?

28. 10. 2019

Pokusy řídit počasí mohly zásadně ovlivnit klima ve světě, míní Radovan Dluhy-Smit z katedry rozvojových a environmentálních studií Univerzity Palackého v Olomouci. V komentáři nabízí jiný pohled na globální oteplování.



Komentář: Poručíme větru, dešti. Možné nedozírné následky klimatického inženýrství

AKTUALIZOVÁNO 7. 5. 2019

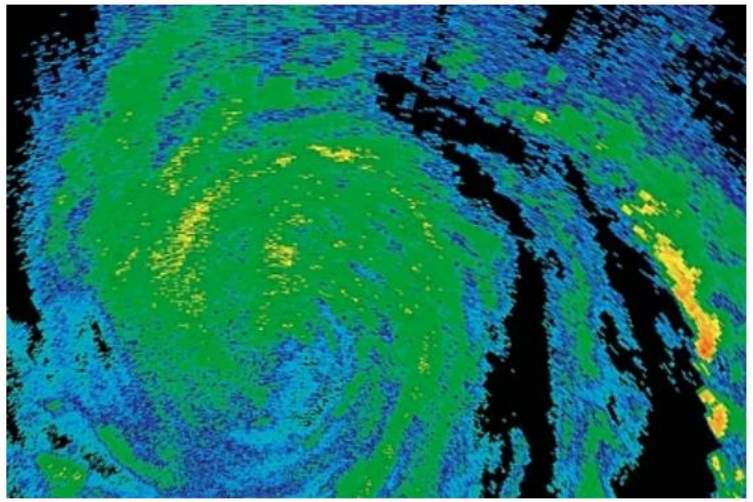
„Ti, kteří poroučí počasí, mohou vládnout světu," prohlásil již v roce 1962 prezident Spojených států Lyndon B. Johnson.



Pokusy s počasím mohly zásadně přispět ke globální změně klimatu

30. 11. 2020 18:00 PRO-ENERGY Martin Havel

říká pro PRO-ENERGY magazín Radovan Dluhy-Smith z Katedry rozvojových a environmentálních studií Univerzity Palackého v Olomouci.



TECHNOLÓGIE # KLÍMA # DOPRAVA # ŽIVOTNÉ PROSTREDIE

zdieľať na Facebooku zdieľať na Twitteru

ABSTRACT: Weather modification has an important impact on climate change, says in an interview Radovan Dluhy-Smith from the Department of Development and Environmental studies at Palacký's University in Olomouc.

Dnes je v energetice ale i mimo ni zásadní téma snižování emisí ublíku či obecně skleníkových

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09. 02. 2021 - 10. 02. 2021

Hotel DIXON, Banská Bystrica, SK

14. ročník Medzinárodnej konferencie "enef"

Moje články

Zde si můžete přečíst moje vlastní články. Jedná se o věcné analýzy založené na odborných studiích a ověřených zdrojích. V kontextu a v souvislostech.



KLIMA: Geo-inženýrství a hrozba jeho zneužití



Jsme ve válce, o které se nemluví

Radovan Dluhý: Jak se nechytit

https://www.youtube.com/watch?v=1gjFhr6ZWfo&t=31s

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Radovan Dluhý: Jak se nechytit do pasti zvané chemtrails – máme virtuální počasí? (2. část)

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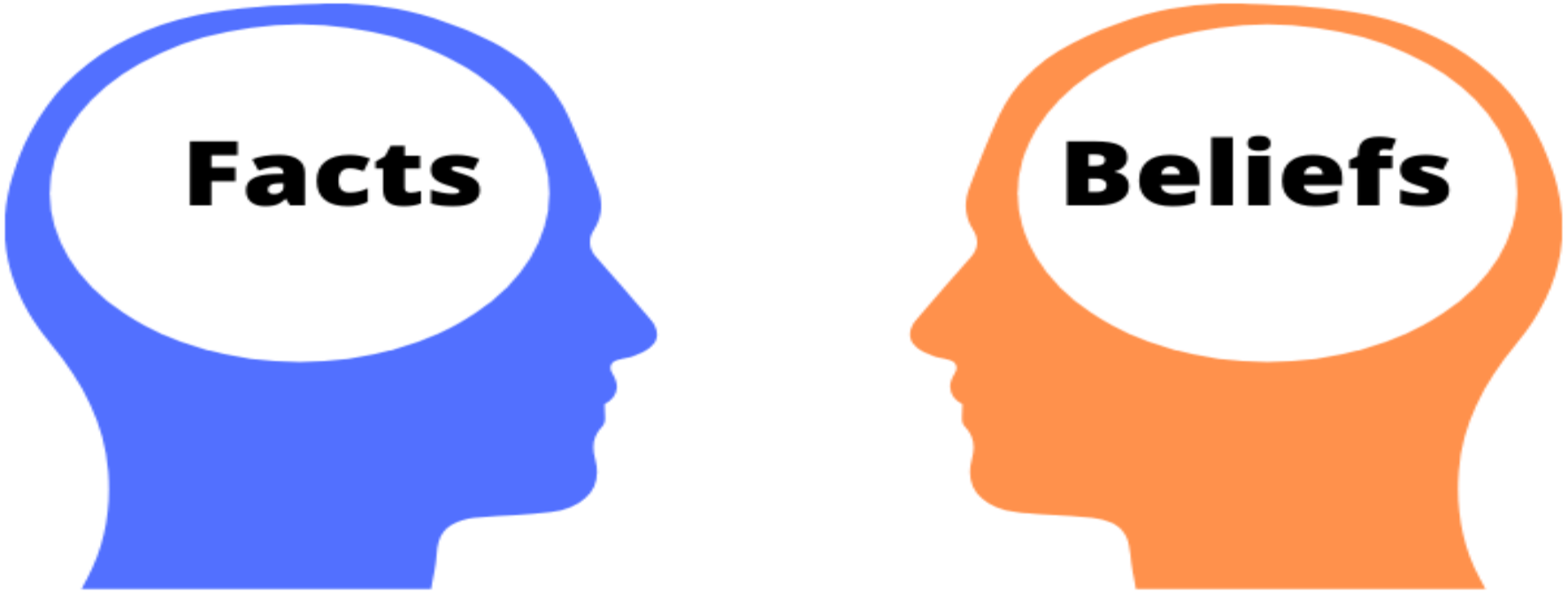
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KOGNITIVNÍ DISONANCE



NĚCO MÁLE O MNĚ



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UNIVERZITA JIŽNÍHO OREGONU



MAINSTREAMOVÉ ČLÁNKY A STUDIE

AQUIESS A GLOBAL RAIN PROJEKT (UKONČI SUCHO V KENI) – OVLIVŇOVÁNÍ POČASÍ V AFRICE POMOCÍ ELEKTROMAGNETICKÝCH VLN (SMĚROVÁNÍ ATMOSFÉRICKÝCH ŘEK) 2011

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GlobalRainProject

aquiess Hi-Tech Rainmaking interview on Kenya's KTN 10 November 2011. KTN's Dennis Okari interviews Aquiess CEO David ...

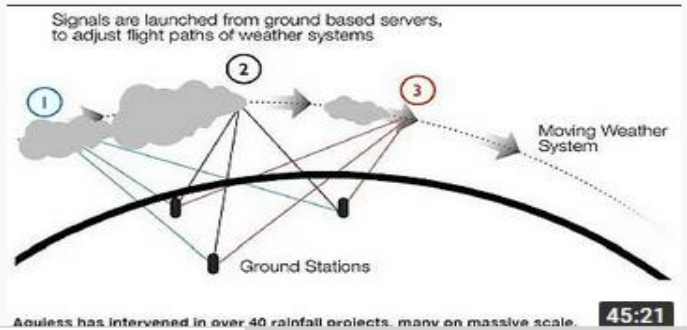


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Aquiess, Sciblue, & Steering Rivers in the Sky

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The Guardian 2012 – mapa experimentů s klimatickým inženýrstvím

Geoengineering projects aroun

https://www.theguardian.com/environment/graphic/2012/jul/17/geoengineering-world-map

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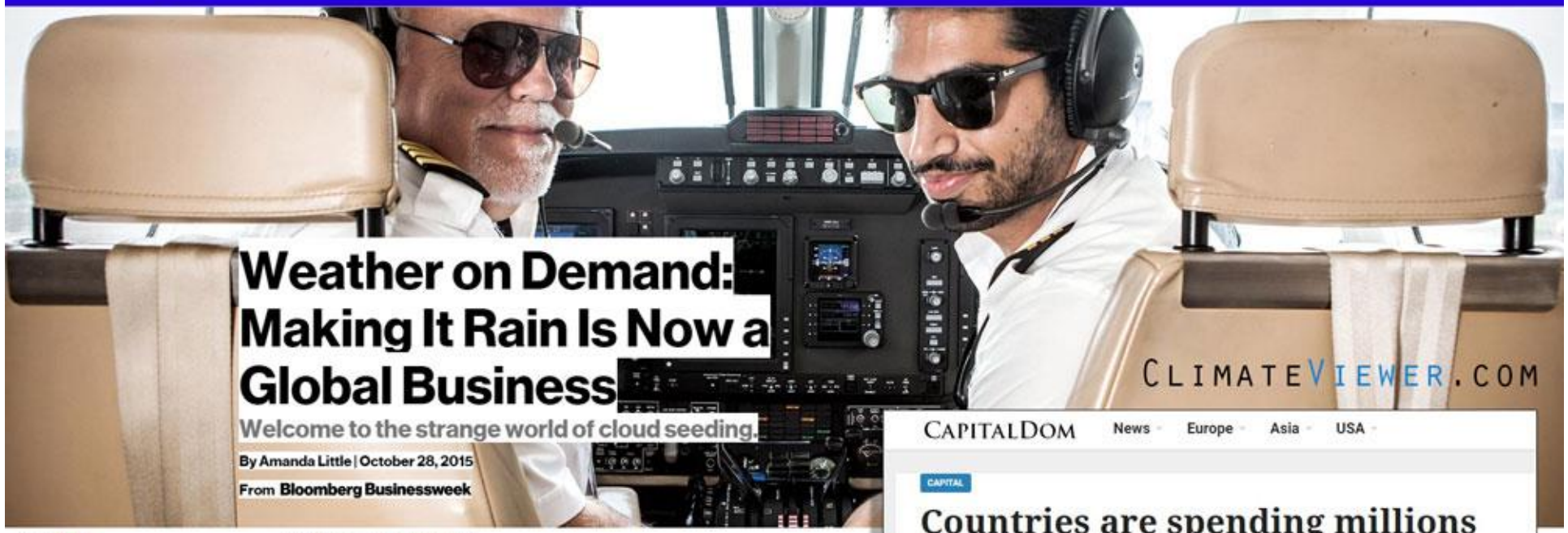
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Weather on Demand: Making It Rain Is Now a Global Business

Welcome to the strange world of cloud seeding.

By Amanda Little | October 28, 2015

From Bloomberg Businessweek

Daily Mail .com

Travel News

Would YOU pay £100,000 to guarantee a sunny wedding? Travel company offers 'cloud bursting' service to banish rain for couples' big day

- Oliver's Travels say service will guarantee blue skies on the special day
- The technique is also known as cloud seeding and is widely used in China
- Method involves firing rockets filled with silver iodide crystals into clouds
- Particles freeze water droplets causing the clouds to burst and then vanish
- The technique was used ahead of 2008 Beijing Olympics opening ceremony to keep stadium dry
- It was also reportedly used by the Duke and Duchess of Cambridge before their 2012 wedding



CAPITALDOM News Europe Asia USA

CAPITAL

Countries are spending millions to control the weather — here's why

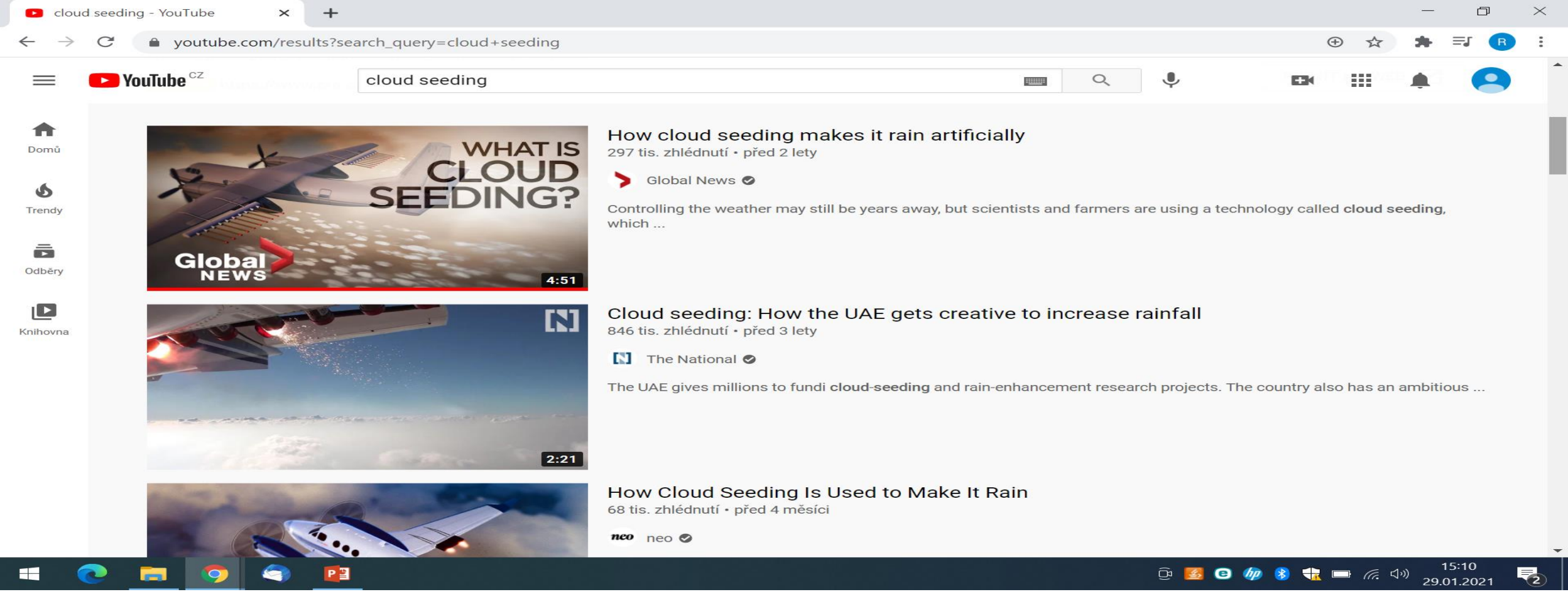
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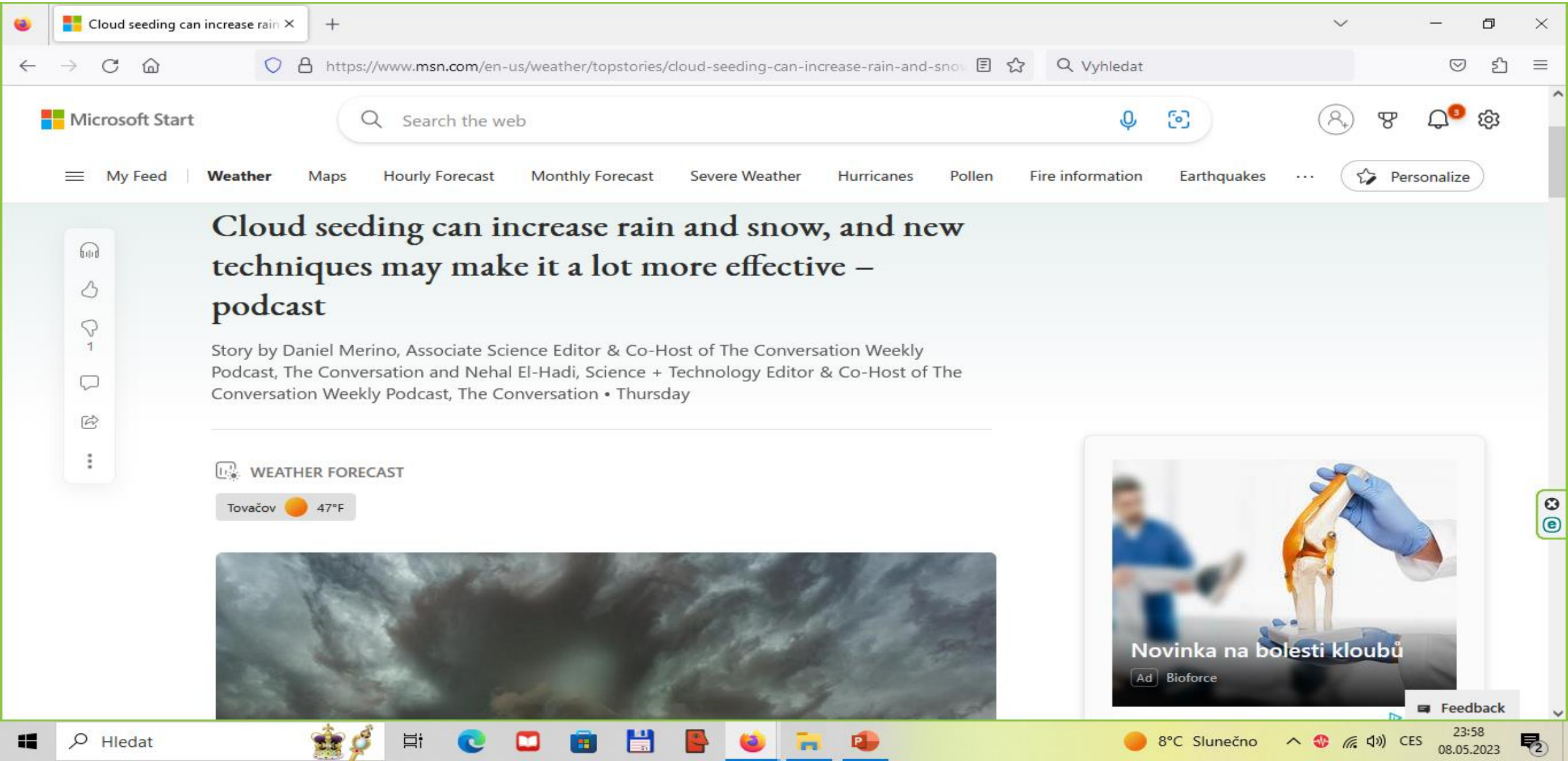
China spent millions on a shady project to control the weather ahead of the Beijing Olympics — and dozens of other countries are doing it too





Advanced Radar Corp, Aero Systems, Inc., Aerotec Argentina, Colorado Water Conservation Board,Deepwater Chemicals Direccion de Agricultura y Contingencias Climaticas (Argentina),Droplet Measurement Technologies, Dynamic Aviation Group, Inc., Electronic Systems Developement CC, General Aviation Applications – 3D s.a., Hydro-Tasmania, Ice Crystal Engineering LLC, Idaho Power Company, NASIC/DEKA – US Air Force Wright-Patterson AFB, North American Weather Consultants, Inc., North Dakota Atmospheric Resources Board, Omni International, LLC, Radiometrics Corporation RHS Consulting, Ltd, Sacramento Municipal Util Dist., Santa Barbara County Water Agency, Snowy Hydro Limited Southern California Edison County, National University of Technology – Mendoza, Argentina, Utah Division of Water Resources, Weather Modification, Inc., Western Weather Consultants, LLC, Wyoming Water Development

METODA OSÉVÁNÍ MRAKŮ MŮŽE ZVÝŠIT DEŠŤOVÉ A SNĚHOVÉ SRÁŽKY A NOVÉ TECHNIKY JSOU JEŠTĚ ÚČINĚJŠÍ



ZVÝŠIT SRÁŽKY AŽ O 30%



Cloud seeding is usually done by planes equipped with devices – like the one attached to the wing of this plane – that spray silver iodide into the atmosphere.
© Zuckerle/Wikimedia Commons

In 2017, Friedrich's research group had a breakthrough in measuring the effect of cloud seeding. "We flew some aircraft, released silver iodide and generated these clouds that were like these six exact lines that were downstream of where the aircraft were seeding," she says. They then had a second aircraft fly through the clouds. "We could actually quantify how much snow we could produce by two hours of cloud seeding." That effect, according to research on cloud seeding, is an increase in precipitation of somewhere around 5% to 20% or 30%, depending on conditions.

Measuring the effect on precipitation – whether rain or snow – directly may have taken



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Weather news: Scientists in the
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Weather Modification International 2022

An aircraft flies into the clouds carrying flares filled with silver iodide being released to help make more snow.

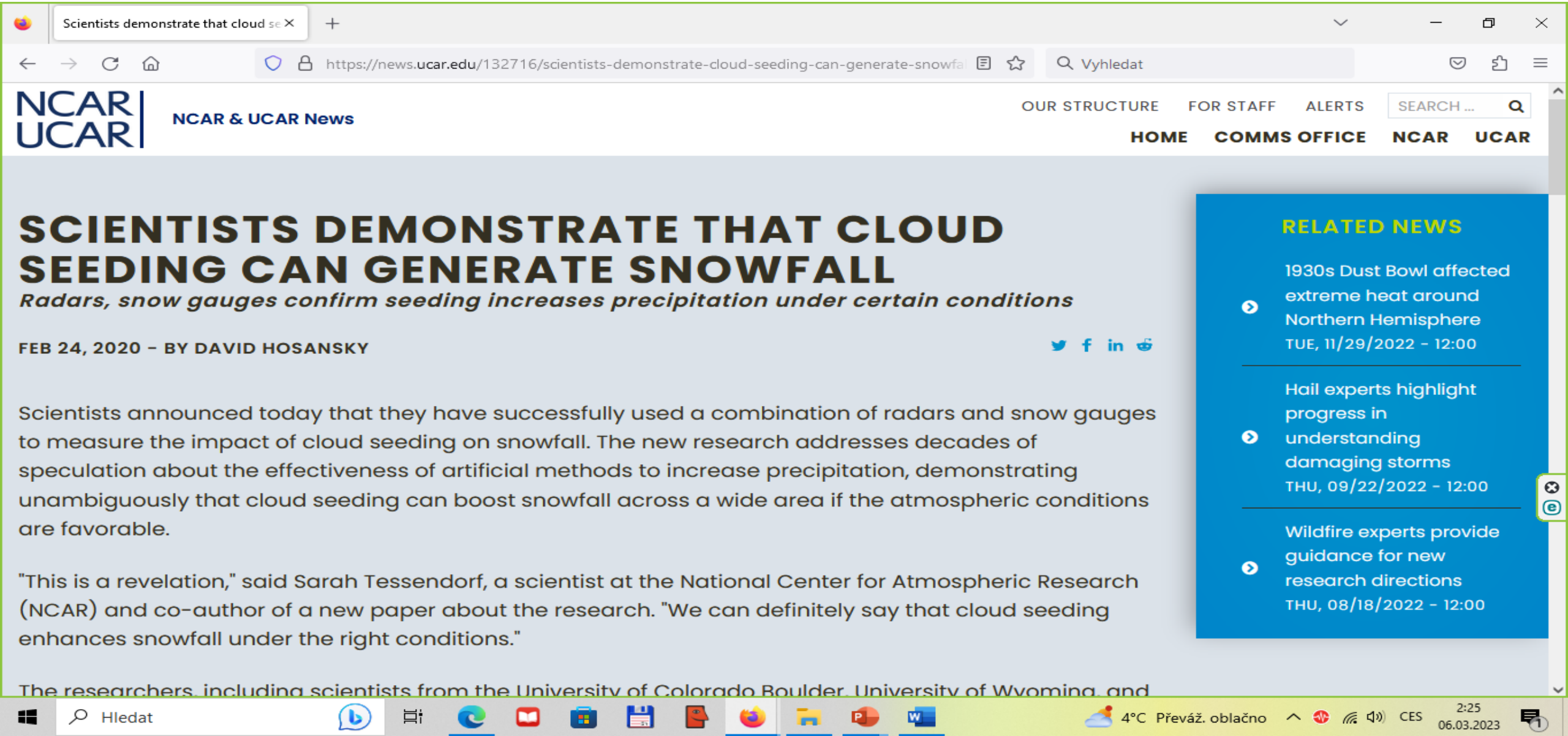
Scientists in the US are flying planes into clouds to make it snow more

By Jennifer Gray and Rachel Ramirez, CNN

Updated 5:50 PM EDT, Mon March 14, 2022

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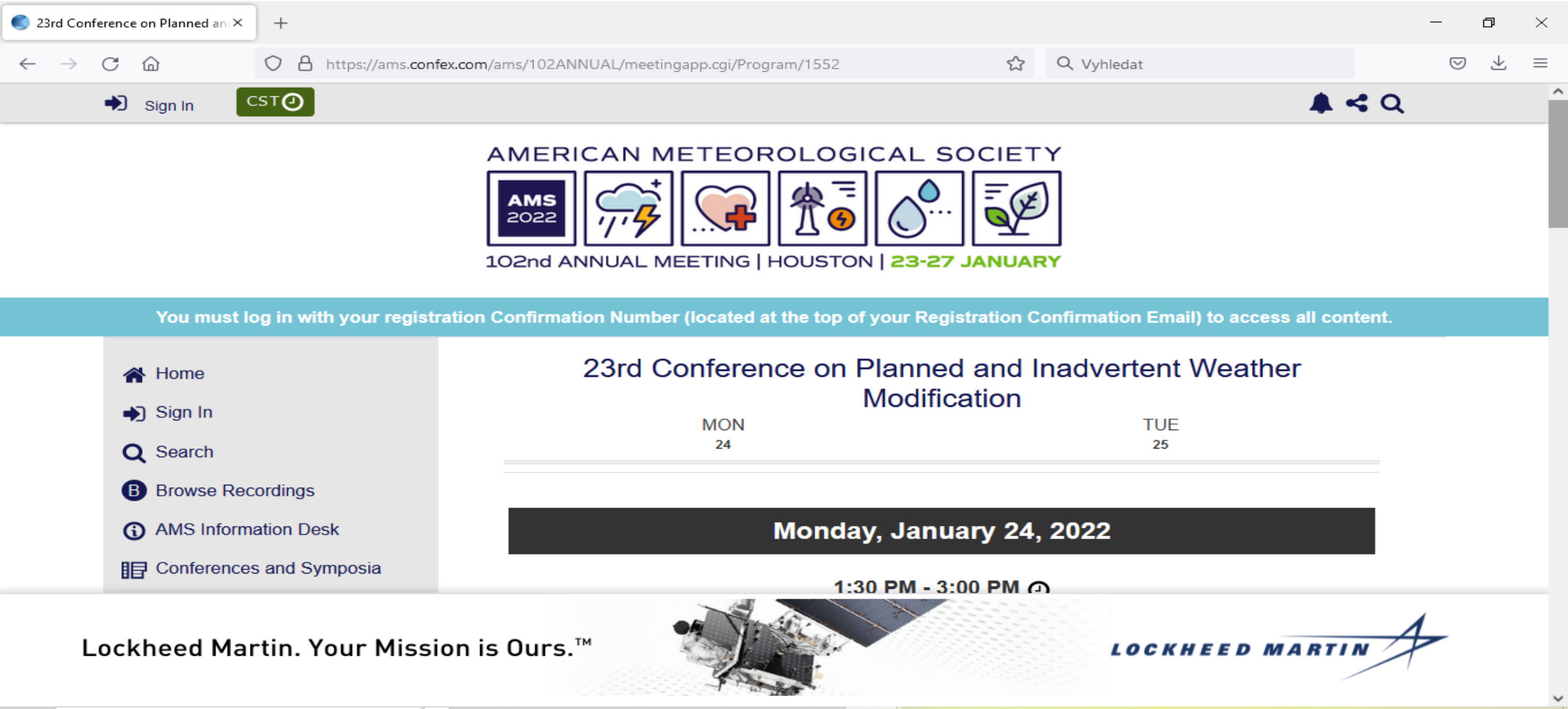
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Chairs: Greg M. McFarquhar, Univ. of Oklahoma, Norman, OK and Kaylee Heimes, Atmospheric Sciences, Atmospheric Sciences, URBANA, IL, IL

12:00 PM - 1:30 PM

Lunch Break

1:30 PM - 3:00 PM

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Joint J7

Stratospheric Aerosol Climate Intervention and Natural Analogs

Chairs: Simone Tilmes, ACOM, NCAR, Boulder, CO and Karen H. Rosenlof, NOAA, Boulder, CO



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Session 6

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12:00 PM - 1:30 PM

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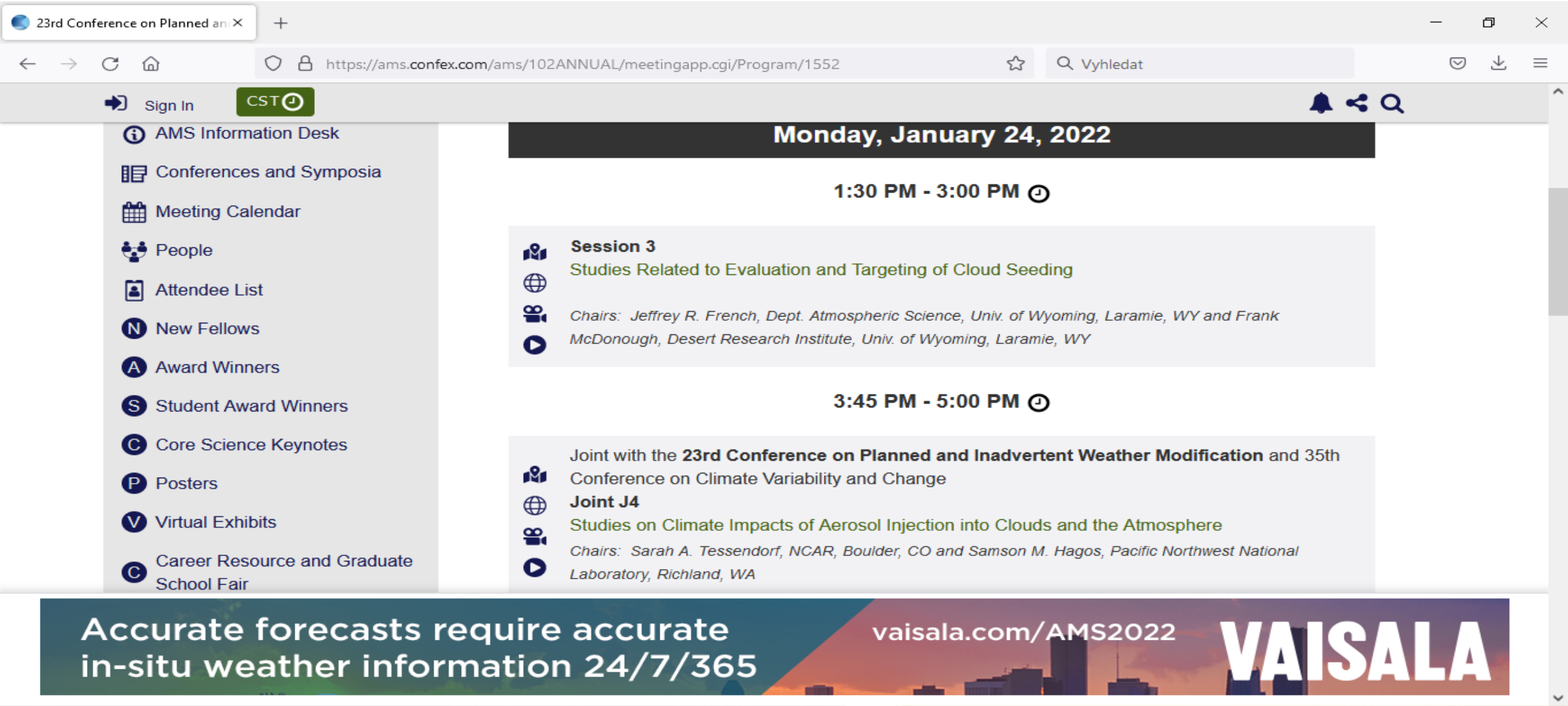
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Stratospheric Aerosol Climate Intervention and Natural Analogs

Chairs: Simone Tilmes, ACOM, NCAR, Boulder, CO and Karen H. Rosenlof, NOAA, Boulder, CO



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Oprava nebe
Dlouhá historie ovlivňování počasí a klimatu

Fixing the Sky: The Checkered His

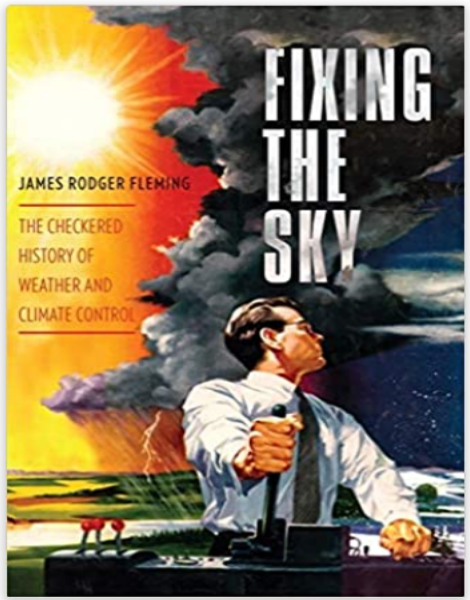
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Fixing the Sky: The Checkered History of Weather and Climate Control (Columbia Studies in International and Global History)

Paperback – Illustrated, January 31, 2012

by James Fleming (Author)

★★★★☆ 15 ratings

Part of: Columbia Studies in International and Global History (20 Books)

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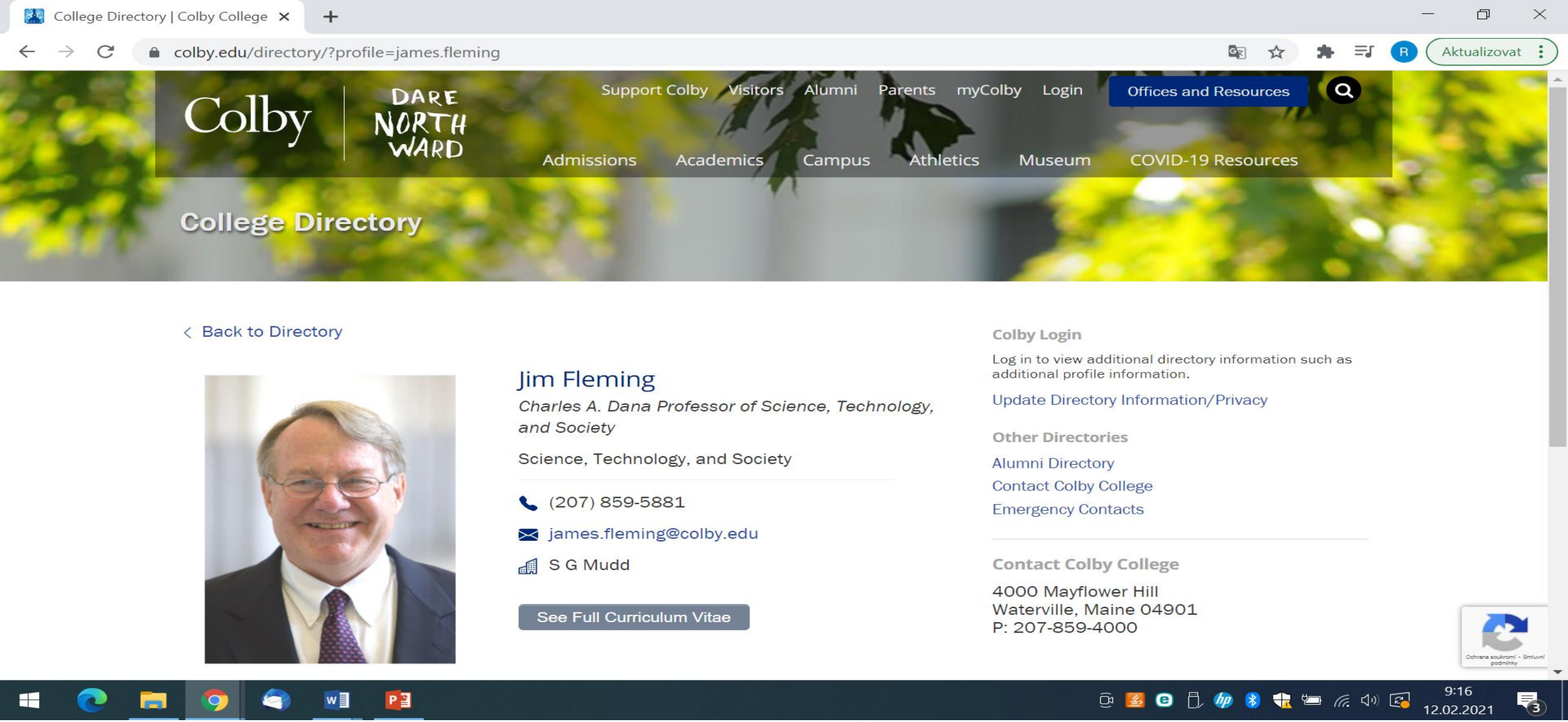
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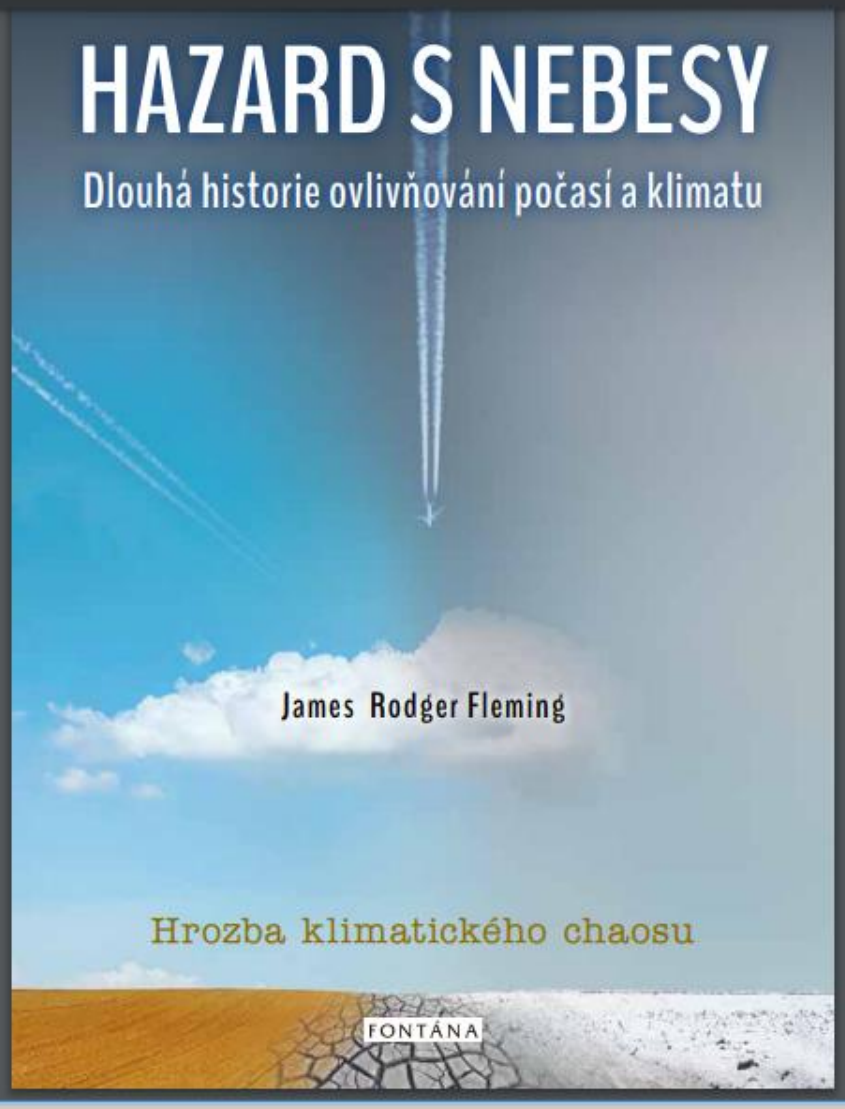
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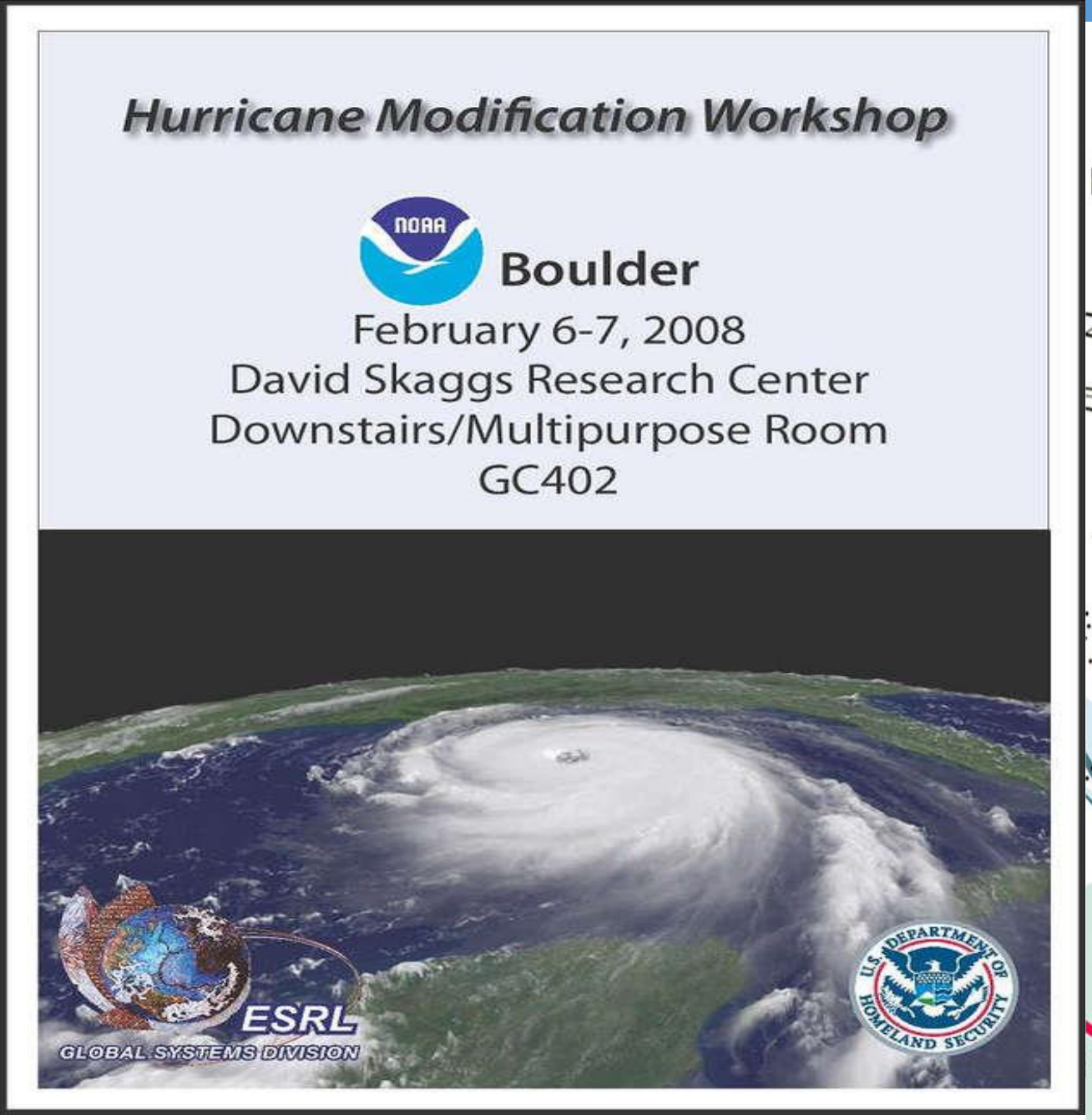
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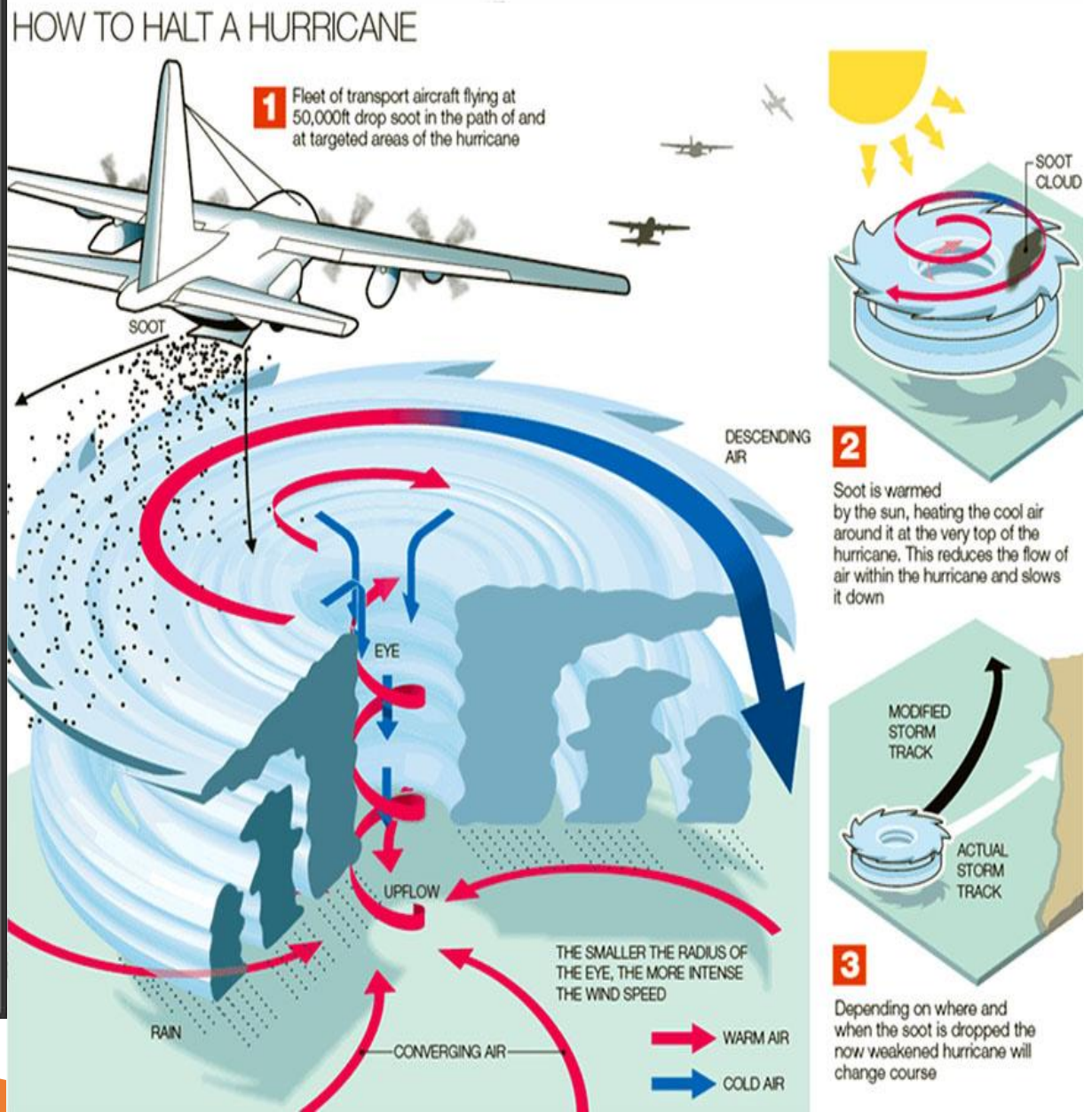
*„**Masivní osévání mraků** tohoto typu a ty, které byly navrženy již v 50. letech Irvingem Langmuirem, mají takový rozsah, že **mohou mít dopad na klima**.“* vědecký historik **Jim Fleming (americký profesor z Colby College)** Jim Fleming (@JFlemingHistory) December 4, 2018


HAZARD S NEBESY
Dlouhá historie ovlivňování počasí a klimatu
James Rodger Fleming
Hrozba klimatického chaosu
FONTÁNA

Využití sazí a uhlíkového prachu k ovlivňování hurikánů a bouří



Národní úřad pro oceán a atmosféru



WEATHER MODIFICATION

Test Technology Symposium '97

Session B:

Advanced Weapon/Instrumentation Technologies

John Hopkins University/Applied Physics Laboratory

by

Dr. Arnold A. Barnes, Jr.

Senior Scientist

Optical Effects Division

Phillips Laboratory

19 March 1997

Osévání mraků pomocí uhlíkového prachu – mraky, déšť, mlha

CLOUD SEEDING

- WEATHER MODIFICATION USING CARBON BLACK (1)
  - – Increase Precipitation
    - » Muddy dirt roads to decrease tractability
    - » Flood fields and small rivers
    - » Decrease troop comfort level
    - » Decrease tractability by snow or freezing rain when the temperature conditions are right
  - – Decrease Precipitation #
    - » Dry out roads/fields for improved tractability
    - » Deny fresh water to troops in semi-dry regions

CLOUD SEEDING (cont.)

- WEATHER MODIFICATION USING CARBON BLACK (2)
  - – Increase Cirrus Cloud Cover
    - » Deny visual satellite or high altitude reconnaissance
    - » Decrease light level for night time operations
  - – Dissipate Fog
    - » Uncover targets for visual raids
    - » Provide visual inspection of damage
    - » Provide visual reconnaissance
    - » Open airfields for landing / recovery

POČASÍ JAKO MULTIPLIKÁTOR SÍLY (1995) – OVLÁDNUTÍ POČASÍ V ROCE 2025

Weather as a Force Multiplier: Ov | Air War College

Nezabezpečeno | prekladyodlesa.sk/wp-content/uploads/owning_the_weather_in_2025.pdf

Weather as a Force Multiplier: Owning the Weather in 2025 1 / 143 100%

Weather as a Force Multiplier:
Owning the Weather in 2025



A Research Paper
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12:09
09.02.2021

Počasí jako multiplikátor síly: Přivlastnění si počasí v roce 2025

Globální síť počasí, senzory, počítačové modely, nástroje pro komunikaci, chemikálie, vzdušná vozidla pro doručování, zbraně přímých energií, umělá ionosférická zrcadla,

chytré mraky plné nanočástic.

Uhlíkový popílek.

Virtuální počasí 2025

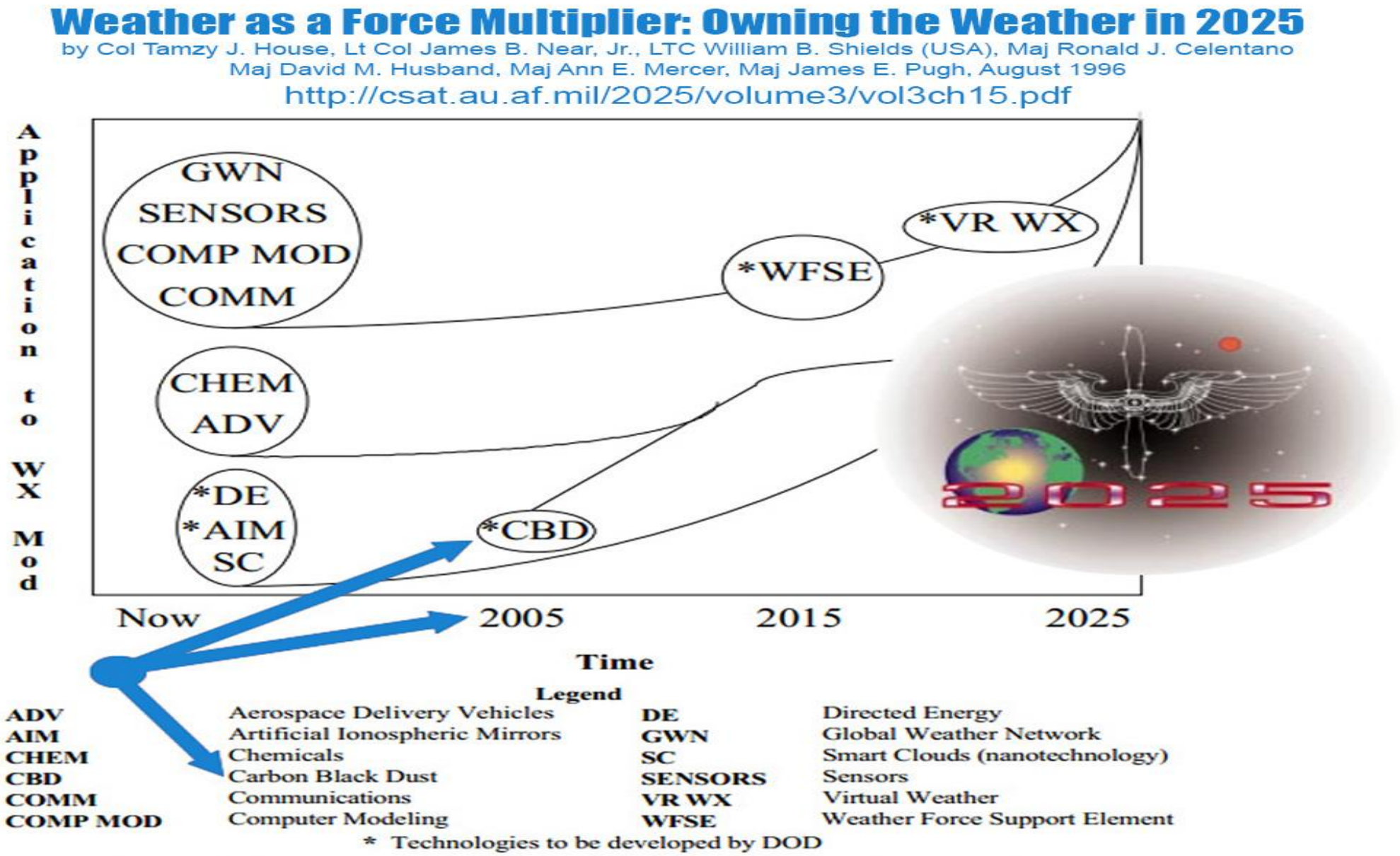


Figure 5-2. A Systems Development Road Map to Weather Modification in 2025.

PATENT NA VZDUŠNÉ VOZIDLO PRO OVLIVŇOVÁNÍ POČASÍ

(149) Inbox | info@radovan.org | US Patent Application for AERO | US11420739B2 - Aeronautical car an

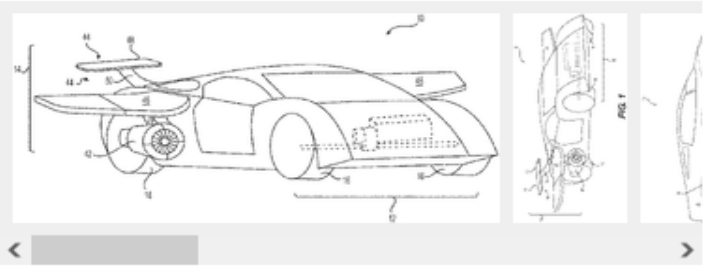
https://patents.google.com/patent/US11420739B2/en

Aeronautical car and associated features

Abstract

An aeronautical car includes a ground-travel system including a drivetrain; an air-travel system including a detachable portion configured to house a propulsion device configured to provide thrust and to be driven by the drivetrain when the detachable portion is connected to the aeronautical car, and at least one flight mechanism configured to provide lift once the aeronautical car is in motion; and a weather manipulation device. The weather manipulation device may be configured to manipulate at least one aspect of a weather condition while the aeronautical car is in the air.

Images (12)



Classifications

B64C37/00 Convertible aircraft

View 13 more classifications

US11420739B2
United States

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Inventor: John Goelet

Current Assignee : Jg Entrepreneurial Enterprises LLC

Worldwide applications

2017 • US ~~RU~~ ~~CA~~ CN ~~EP~~ WO 2020 • US 2022 • US

Application US17/002,180 events

2020-08-25 • Application filed by Jg Entrepreneurial Enterprises LLC

2020-08-25 • Priority to US17/002,180

2020-12-10 • Publication of US20200385114A1

2022-08-23 • Application granted

Image 11 of 12

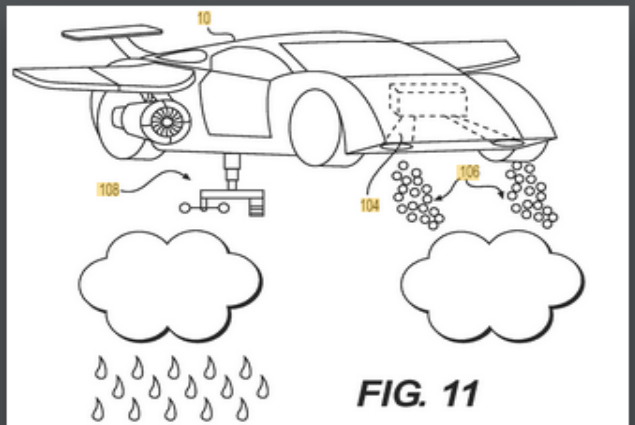
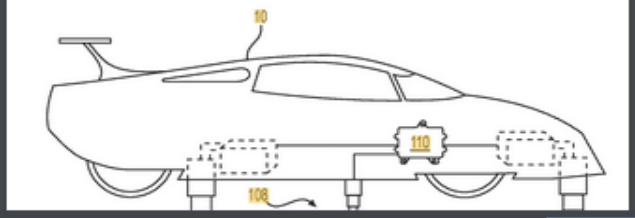
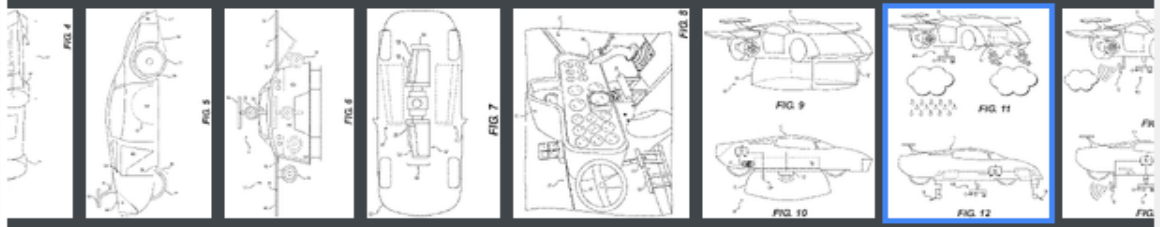


FIG. 11





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ZPRÁVA PRO AMERICKÝ SENÁT Z ROKU 1978

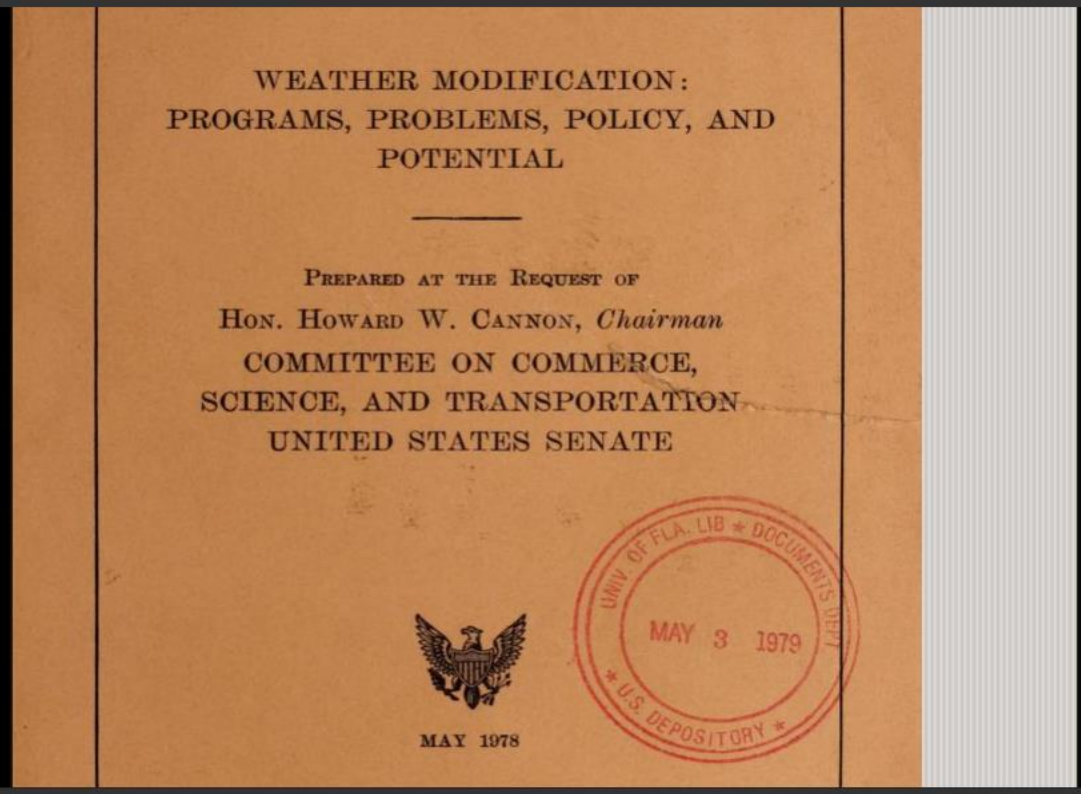
Weather modification: programs

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WEATHER MODIFICATION:
PROGRAMS, PROBLEMS, POLICY, AND
POTENTIAL

PREPARED AT THE REQUEST OF
HON. HOWARD W. CANNON, *Chairman*
COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

MAY 1978

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Weather modification: programs, problems, policy,

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Journal of Applied Meteorology
Article: pp. 355–386 | Abstract | PDF (2.52M)

Weather Modification by Carbon Dust Absorption of Solar Energy

William M. Gray, William M. Frank, Myron L. Corrin, and Charles A. Stokes
Atmospheric Science Department, Colorado State University, Ft. Collins 80523

(Manuscript received June 19, 1975, in final form December 22, 1975)
DOI: 10.1175/1520-0450(1976)015<0355:WMBCDA>2.0.CO;2

ABSTRACT

Growing global population pressures and predicted future food and energy shortages dictate that man fully explore his potential use of solar energy. This paper investigates the possibility of beneficial weather modification through artificial solar energy absorption. A variety of physical ideas related to artificial heat sources on different scales of motion are considered. Interest is concentrated on the feasibility of mesoscale (~ 100–300 km) weather modification through solar energy absorption by carbon aerosol particles of size ~0.1 μm or less. Particles of this size maximize solar energy absorption per unit mass.

It is hypothesized that significant beneficial influences can be derived through judicious exploitation of the solar absorption potential of carbon black dust. There is an especially high potential for this in the boundary layer over tropical oceans and in the formation of cirrus clouds and the consequent alteration of the tropospheric IR energy budget. If dispersed in sizes ≤0.1 μm, solar energy absorption amounts as high as ~ 2×10^{10} cal lb^{-1} per 10 h or about 4×10^{11} cal per dollar per 10 h can be obtained. This is a tremendously powerful heat source, especially if it stimulates additional radiation energy gains from extra cloud formation and/or enhanced surface evaporation. Preliminary observational and modeling information indicates that this artificial heat source can be employed on the mesoscale (~ 100–300 km) to achieve significant economic gains by means of precipitation enhancement and tropical storm destruction alleviation. It may also be possible to use carbon dust to enhance precipitation over interior land areas, alter extratropical cyclones, inhibit high daytime summer temperatures and severe weather, prevent frosts, and speed up springtime snowmelt in agriculturally marginal regions.

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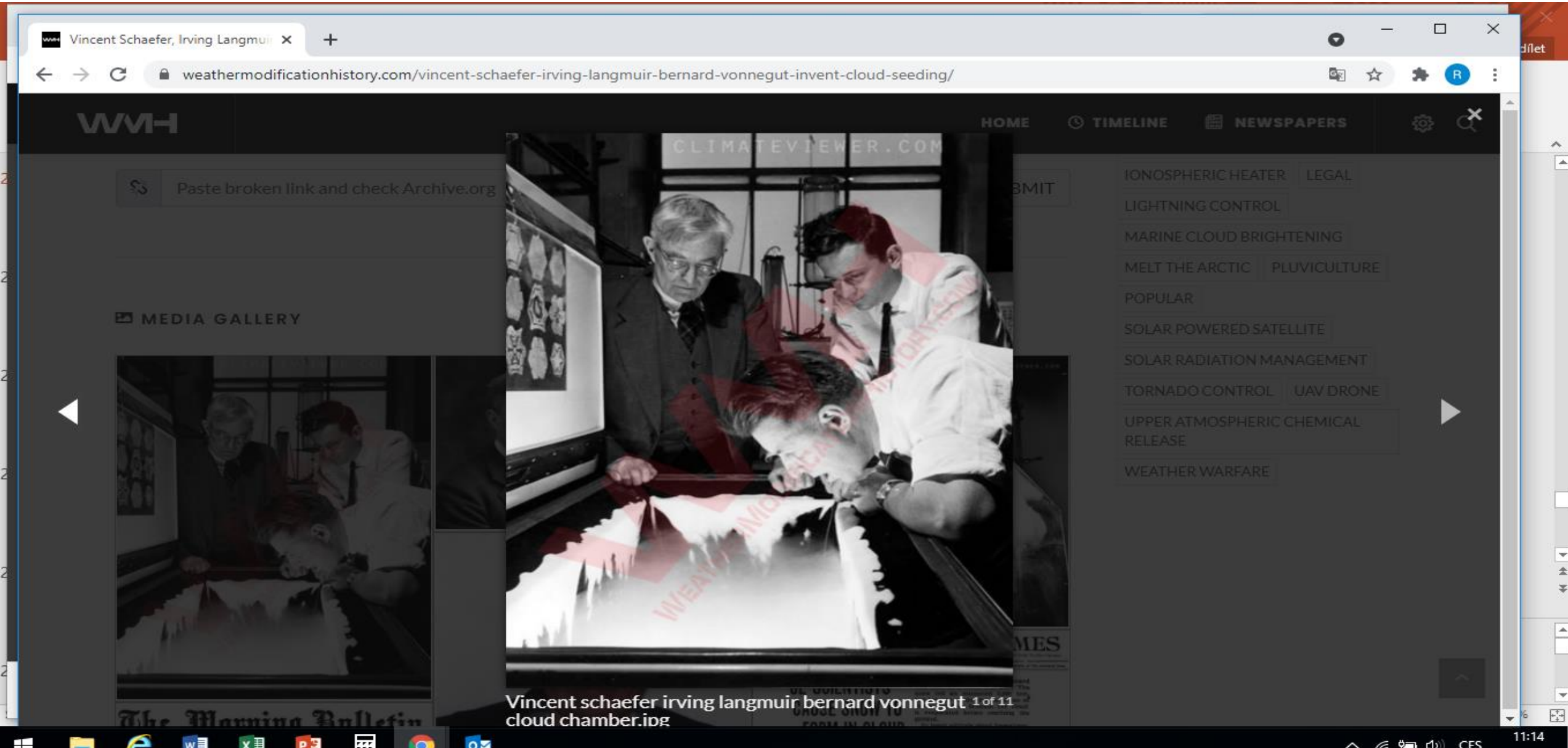
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- William M. Frank
- Myron L. Corrin
- Charles A. Stokes

11:41
09.02.2021

Je možné také použít popílek a uhlíkový prach, abychom zvýšili srážky, změnili směr cyklónů, utlumili vysoké letní teploty a extrémní počasí, zabránili frontám a urychlili tání sněhu v okrajových zemědělských oblastech. 1975

Američtí vědci položili vědecké základy pro ovlivňování počasí – spolupráce americké armády a firmy General Electric (web) ve 40. a 50. letech – Projekt Cirrus



WEB FIRMY G.E. JAK VĚDCI LETĚLI DO MRAKŮ, KTERÉ INFIKOVALI A ZAČALO SNĚŽIT. VĚDEC DOSTAL PŘEZDÍVKU SNĚHULÁK 1946

Cool Science: How Kurt Vonneg

https://www.ge.com/news/reports/cool-science-vonnegut-ge-research

Vyhledat

the weather and even break up hurricanes. In 1946, Schaefer made history when he flew into a cloud in a small plane in upstate New York and set off the world's first artificial snowfall with a bag of dry ice. He became known as the Snow Man.

The research, which GE called "Project Cirrus," was serious business. It grew out of the company's study of thin ice layers that sometimes coated aircraft wings and crippled planes during World War II. The company is now using supercomputers to attack the problem. Many machines that operate in cold environments could benefit from resisting ice, including wind turbines



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2:26

06.03.2023

CITÁTY VĚDCŮ, EXPERTŮ A POLITIKŮ

HISTORY

Weather Control as a Cold War Weapon

In the 1950s, some U.S. scientists warned that, without immediate action, the Soviet Union would control the earth's thermometers



Matt Novak

December 5, 2011



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„VYPUŠTĚNÍ 30mlg JODIDU STŘÍBRNÉHO DO MRAKŮ MŮŽE VYÚSTÍT ZA OPTIMÁLNÍCH PODMÍNEK V ENERGII PODOBNOU VÝBUCHU ATOMOVÉ BOMBY“

Dr. Langmuir, laureát Nobelovy ceny za fyziku 1953

(98) Inbox | info@radovan.org | Weather Control as a Cold War

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SECTIONS

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> ***“Rainmaking” or weather control can be as powerful a war weapon as the atom bomb, a Nobel prize winning physicist said today.***
> ***Dr. Irving Langmuir, pioneer in “rainmaking,” said the government should seize on the phenomenon of weather control as it did on atomic energy when Albert Einstein told the late President Roosevelt in 1939 of the potential power of an atom-splitting weapon.***
> ***“In the amount of energy liberated, the effect of 30 milligrams of silver iodide under optimum conditions equals that of one atomic bomb,” Langmuir said.***

In 1953 Captain Howard T. Orville was chairman of the President’s Advisory Committee on Weather Control. Captain Orville was quoted widely in American newspapers and popular magazines about how the United States might use this control of the skies to its advantage. The May 28, 1954 cover of *Collier’s* magazine showed a man quite literally changing the seasons by a system of levers and push buttons. As the article noted, in an age of atomic weapons and supersonic flight, anything seemed possible for the latter half of the 20th century. The cover story was written by Captain Orville.

> ***A weather station in southeast Texas spots a threatening cloud formation moving toward Waco on its radar screen; the shape of the cloud indicates a tornado may be building up. An urgent warning is sent to Weather Control Headquarters. Back comes an order for aircraft***

Sem zadejte hledaný výraz

19°C Převáž. oblačno CES 2:16 31.08.2022

POPÍLEK PLNÝ TĚŽKÝCH KOVŮ – ZPLODINY Z LETADEL?

TOLEDO BLADE

One Of America's Great Newspapers

123rd Year TOLEDO, OHIO, TUESDAY, SEPTEMBER 23, 1958 ★ ★ ★ ★

Blue Skies Or Stormy Weather

Navy Scientist Creates Clouds, Breaks Them Up

New Technique May Make Rain

WASHINGTON, Sept. 23 (AP)— The navy said today it has created clouds and destroyed others by seeding them with ordinary carbon black.

A woman scientist who discovered the new method said experiments over southern Georgia produced a series of clouds at a cost of 18 cents a cloud.

Much experimentation must be done before the value of the new technique can be determined. It could open the way to cheap and reliable means of making rain, or of breaking up storm clouds, or of dissipating fog.

The technique was developed by Dr. Florence W. Van Straten, who livened up a desk job with the chief of naval operations by theorizing along new lines as to how rain is formed.

Earlier cloud-seeding methods using more expensive dry ice and silver iodine have been confined to super-cooled clouds. The carbon method, Dr. Van Straten said, apparently works with clouds at any temperature.



—Associated Press Wirephoto
DR. FLORENCE VAN STRATEN
Her cloud theory works

In the Georgia experiments, a navy airplane dropped carbon black in both solid and liquid-suspension form into clouds and into clear skies. Additional studies using radar-tracked balloons currently are under way over Chesapeake Bay.

Results indicate that when the carbon is sprayed or sprinkled into a clear sky it causes clouds to form, and when it is introduced into clouds it clears them up. Whether it actually produces rain in this process has not been determined definitely.

"We dropped carbon black, suspended in liquid, over a track a mile long and produced a solid line of clouds one mile long," Dr. Van Straten told a reporter.

"When we dropped 1½-pound dry packages of carbon black, we produced single clouds with each drop."

The navy team seeded seven clouds with carbon, and dissipated each of them in from 2½ to 20 minutes.

"Each cloud turned gray and then rapidly disappeared," Dr. Van Straten said.

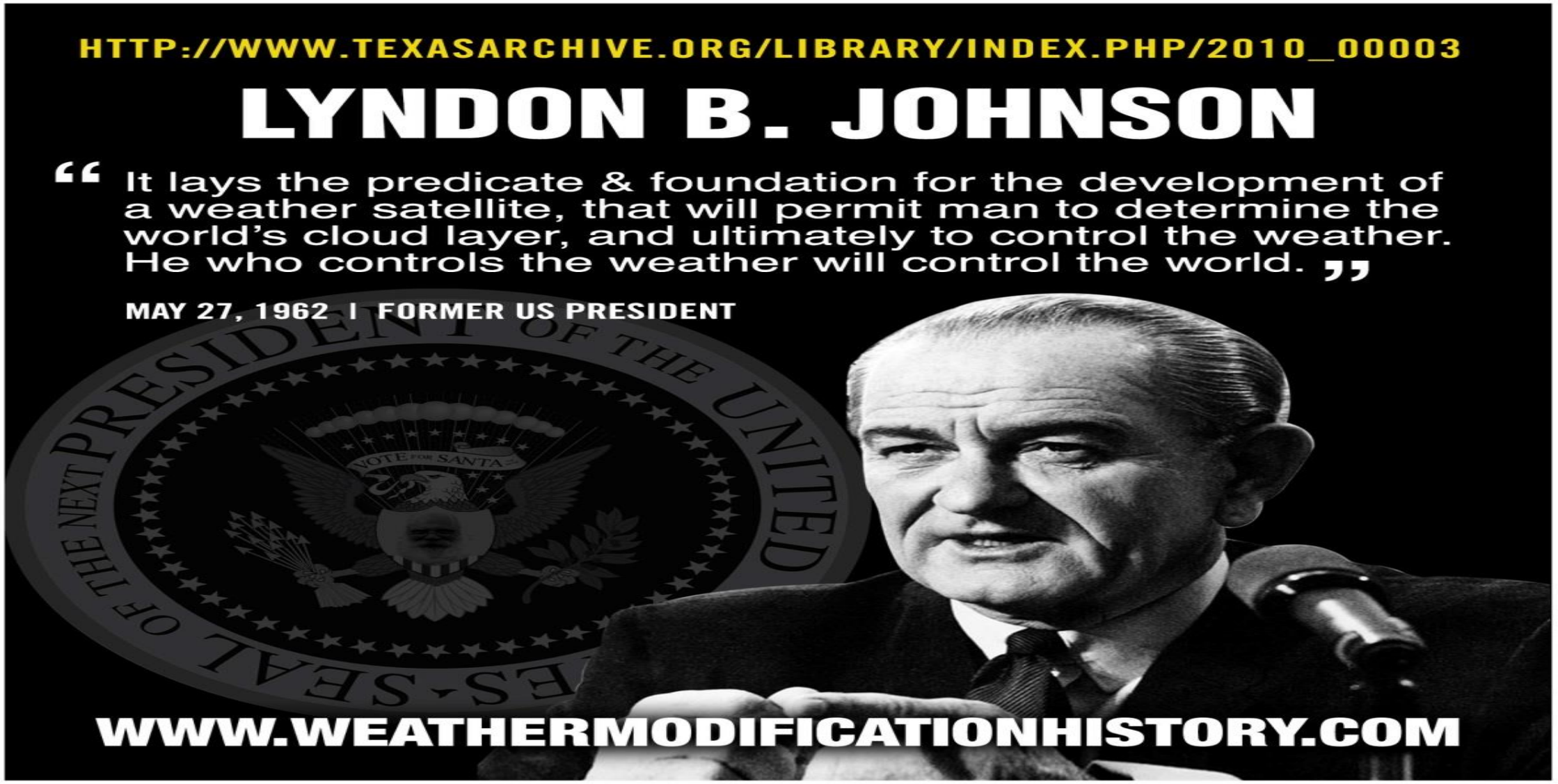
"Aside from the cost of the airplanes, we spent less than $5 on the experiments in Georgia."

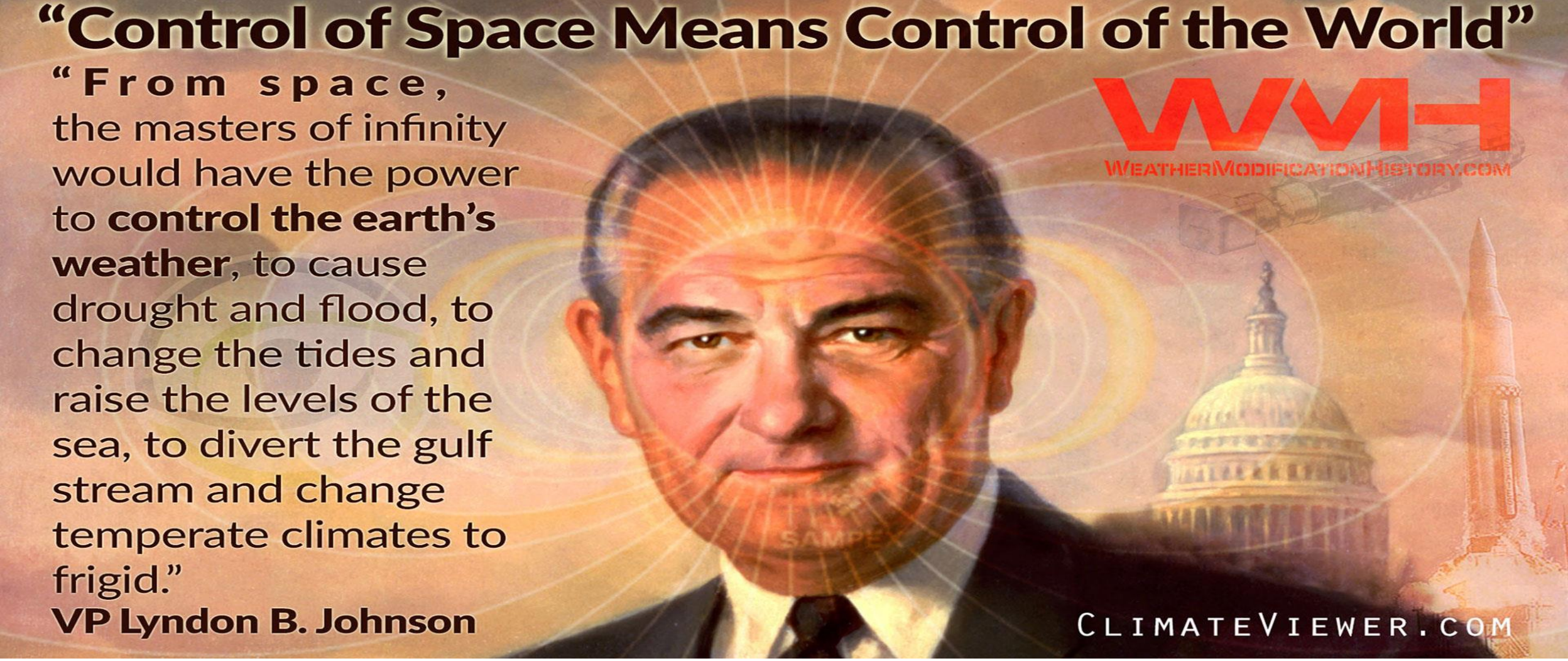
Carbon black, used in printer's ink and automobile tires, is nothing more than soot. It is available cheaply, in commercial quantities, as a by-product of the burning of natural gas.

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WEATHER MODIFICATION HISTORY

Vědkyně Dr. Florence Van Straten ve spolupráci s americkým námořnictvem sděluje výsledky experimentu. „Vypustili jsme popílek a uhlíkový prach po délce jedné míle a na stejném místě jsme vytvořili mraky stejné délky. Když jsme popílek vypustili do mraků, ty se prakticky okamžitě rozpustily. Jedná se o velmi levnou záležitost, cca 18 centů na mrak. Popílek je totiž v průmyslové výrobě odpadem.“ 1958

„TEN, KDO ŘÍDÍ POČASÍ, MŮŽE OVLÁDNOUT SVĚT…POMOCÍ SATELITŮ JE MOŽNÉ OVLIVNIT VRSTVU MRAKŮ.“ **1962**





„OVLÁDNUTÍ VZDUŠNÉHO A VESMÍRNÉHO PROSTORU ZNAMENÁ KONTROLU NAD SVĚTEM – vládci nekonečna by měli moc řídit počasí na zemi, způsobit sucha a povodně, změnit přílivy a proudy, zvýšit hladiny moří, odklonit golfské proudy a změnit mírné podnebí na chladné.“

MINISTR OBRANY USA 1997

Radovan Dluhý-Smith | Facebo
Secretary of Defense William S.
https://www.thepowerhour.com/news/cohen_newsbriefing.htm?fbclid=IwAR0En6ahRy5xP81cJq-b
Vyhledat

The Power Hour
"Knowledge Is Power"

DoD News Briefing
Secretary of Defense William S. Cohen

Monday, April 28, 1997 - 8:45 a.m. EDT

http://www.defenselink.mil/srch/

Cohen's keynote address at the Conference on Terrorism, Weapons of Mass Destruction, and U.S. Strategy at the Georgia Center, Mahler Auditorium, University of Georgia, Athens, Ga. The event is part of the Sam Nunn Policy Forum being hosted by the University of Georgia. Secretary Cohen is joined by Sen. Sam Nunn and Sen. Richard G. Lugar.]

Secretary Cohen: Senator Nunn, thank you very much. As Senator Nunn has indicated, he and I have worked for many years together, along with Senator Lugar. The two of these gentlemen I feel are perhaps the most courageous and visionary to have served in the Senate. They were largely responsible, of course, for adopting the so-called Nunn/Lugar legislation.

I'll comment on that later during the course of the morning, but I've had occasion to meet with a number of Russian counterparts, and as we go through various translations of the communications that we're having, the two words they are able to articulate very clearly, they say 'Nunn/Lugar, Nunn/Lugar. So they know exactly what that means, and that means the Cooperative Thre'at Reduction Act that these two gentlemen were indispensable in shepherding through the United States Congress.

It was Nunn/Lugar I that dealt with the reduction of nuclear weapons between the United States and the Soviet Union in terms of trying to come to grips with how we helped the Russians dismantle hundreds of their nuclear weapons, and also helped them with their destruction of chemical weapons. But they, of course, have looked beyond simply that particular relationship, which is very important, but also looking to the future that we face as far as the rise of terrorism -- both international and domestic; and finding ways in which the Department of Defense can become involved in helping local states and local agencies

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„RŮZNÉ DRUHY ECOTERORISMU SE VE SVĚTĚ JIŽ POUŽÍVÁJÍ. POMOCÍ ELEKTROMAGNETICKÝCH VLN JE MOŽNÉ ZMĚNIT KLIMA, VYVOLAT ZEMĚTŘESENÍ ČI SOPEČNOU ČINNOST“ S Cohen 1997

Radovan Dluhý-Smith | Facebo
Secretary of Defense William S.
https://www.thepowerhour.com/news/cohen_newsbriefing.htm?fbclid=IwAR0En6ahRy5xP81cJq-b
Vyhledat

the reason why it's a local responsibility, as such, but the Department of Defense is going to be taking the lead as far as supervising the interagency working groups, and to make the assessments as to what needs to be done. So we're going to identify those 120 cities and work with them very closely to make sure that they can prepare themselves for what is likely to be a threat well into the future.

Q: Let me ask you specifically about last week's scare here in Washington, and what we might have learned from how prepared we are to deal with that (inaudible), at B'nai Brith.

A: Well, it points out the nature of the threat. It turned out to be a false threat under the circumstances. But as we've learned in the intelligence community, we had something called -- and we have James Woolsey here to perhaps even address this question about phantom moles. The mere fear that there is a mole within an agency can set off a chain reaction and a hunt for that particular mole which can paralyze the agency for weeks and months and years even, in a search. The same thing is true about just the false scare of a threat of using some kind of a chemical weapon or a biological one. There are some reports, for example, that some countries have been trying to construct something like an Ebola Virus, and that would be a very dangerous phenomenon, to say the least. Alvin Toeffler has written about this in terms of some scientists in their laboratories trying to devise certain types of pathogens that would be ethnic specific so that they could just eliminate certain ethnic groups and races; and others are designing some sort of engineering, some sort of insects that can destroy specific crops. Others are engaging even in an eco- type of terrorism whereby they can alter the climate, set off earthquakes, volcanoes remotely through the use of electromagnetic waves.

So there are plenty of ingenious minds out there that are at work finding ways in which they can wreak terror upon other nations. It's real, and that's the reason why we have to intensify our efforts, and that's why this is so important.

Q: What is response to (inaudible)?

A: We hope we will have access to the defector. In fact I was recently in South Korea and talked with various officials in South Korea. As soon as they complete their own interrogation of this defector, we will

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27.08.2022

„JSOU K DISPOZICI TECHNOLOGIE PRO KLIMATICKÉ INŽENÝRSTVÍ.“ Brennan 2016

CIA Director on the Geopolitical

https://climateandsecurity.org/2016/07/cia-director-on-the-geopolitical-risks-of-climate-geoeng

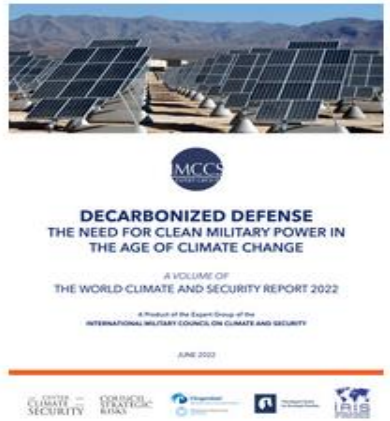
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CIA Director John Brennan recently spoke at a Council on Foreign Relations event. His remarks covered a broad range of near and long term national security risks, including the benefits and costs of geoengineering for combating climate change (transcript and video below). It is not surprising that geoengineering solutions to climate change (which can be conducted unilaterally by states and non-state actors with international consequences), are an area of interest for the CIA director. As Brennan points out, there is a lack of “global norms and standards” for addressing the geopolitical implications of developing this technology, and that’s not a tenable situation. It’s a topic many shy away from, but ignoring it won’t make it go away.

John Brennan on Transnational Threats to Global Security



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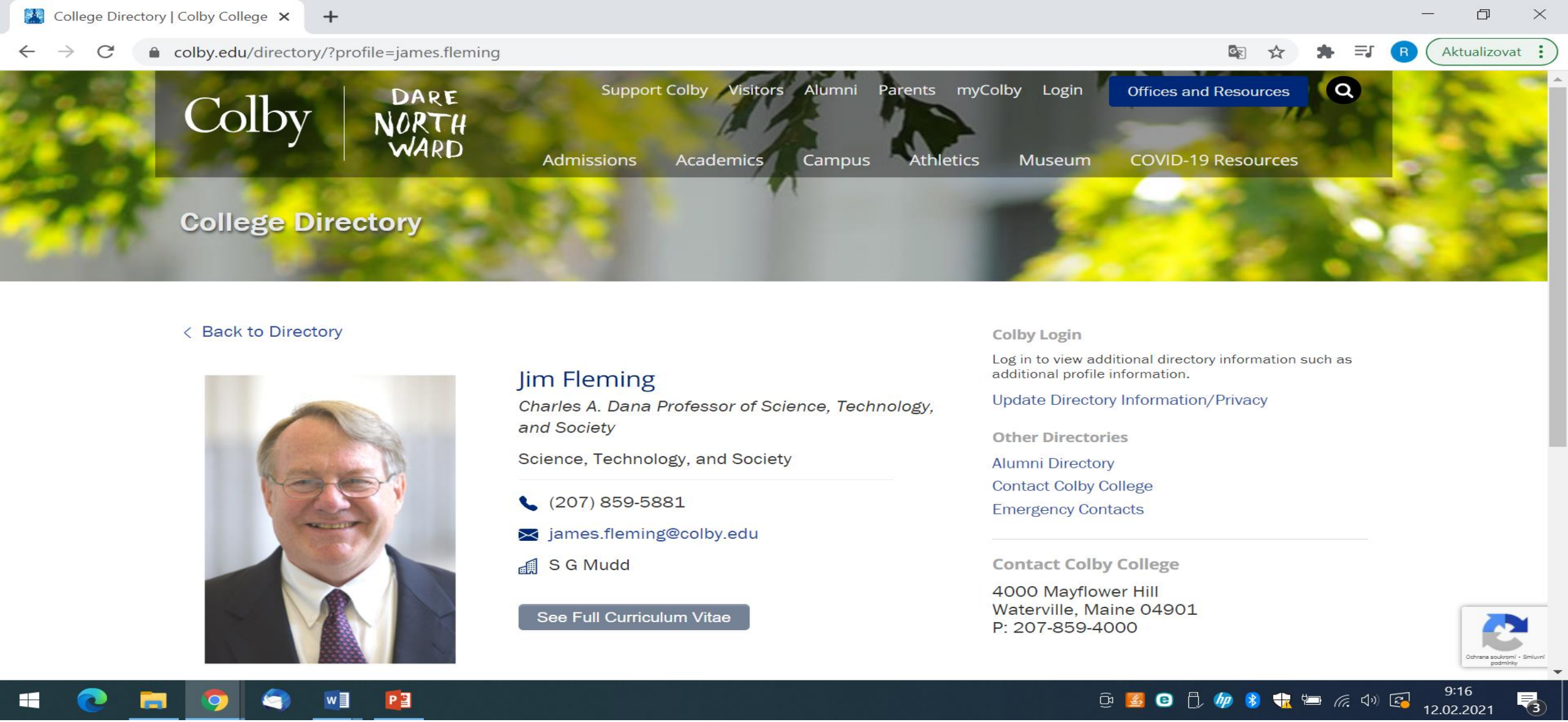
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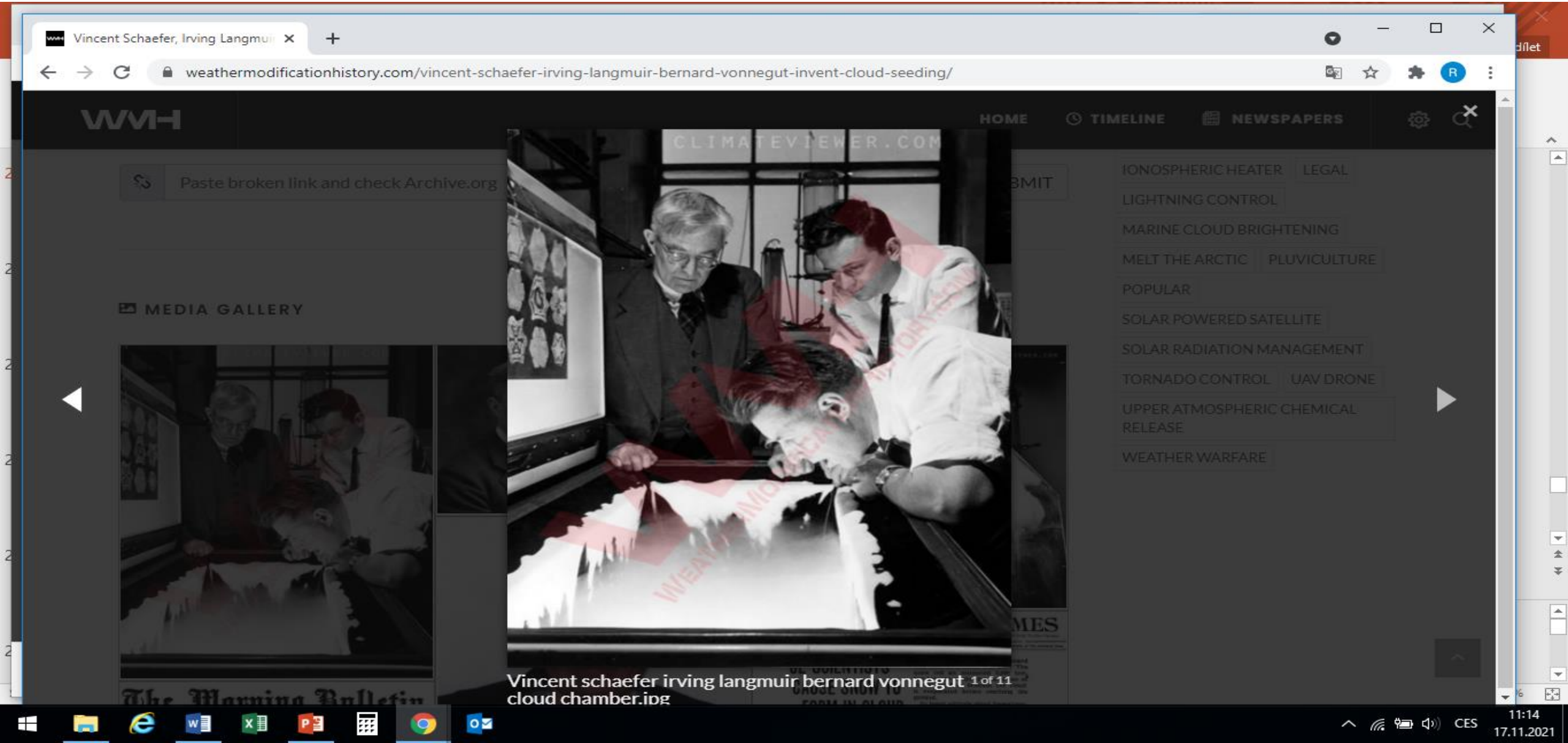
*„**Masivní osévání mraků** tohoto typu a ty, které byly navrženy již v 50. letech Irvingem Langmuirem, mají takový rozsah, že **mohou mít dopad na klima**.“* vědecký historik **Jim Fleming (americký profesor z Colby College)** Jim Fleming (@JFlemingHistory) December 4, 2018

MINISTERSKÝ PŘEDSEDA STÁTU MANITOBA V KANADĚ DĚKUJE TĚM CO ZPŮSOBILI DÉŠŤ



Z HISTORIE A CESTA KOLEM SVĚTA

Američtí vědci položili vědecké základy pro ovlivňování počasí – spolupráce americké armády a firmy General Electric ve 40. a 50. letech – Projekt Cirrus



WEB FIRMY G.E. JAK VĚDCI LETĚLI DO MRAKŮ, KTERÉ INFIKOVALI A ZAČALO SNĚŽIT. VĚDEC DOSTAL PŘEZDÍVKU SNĚHULÁK 1946

Cool Science: How Kurt Vonneg

https://www.ge.com/news/reports/cool-science-vonnegut-ge-research

Vyhledat

the weather and even break up hurricanes. In 1946, Schaefer made history when he flew into a cloud in a small plane in upstate New York and set off the world's first artificial snowfall with a bag of dry ice. He became known as the Snow Man.

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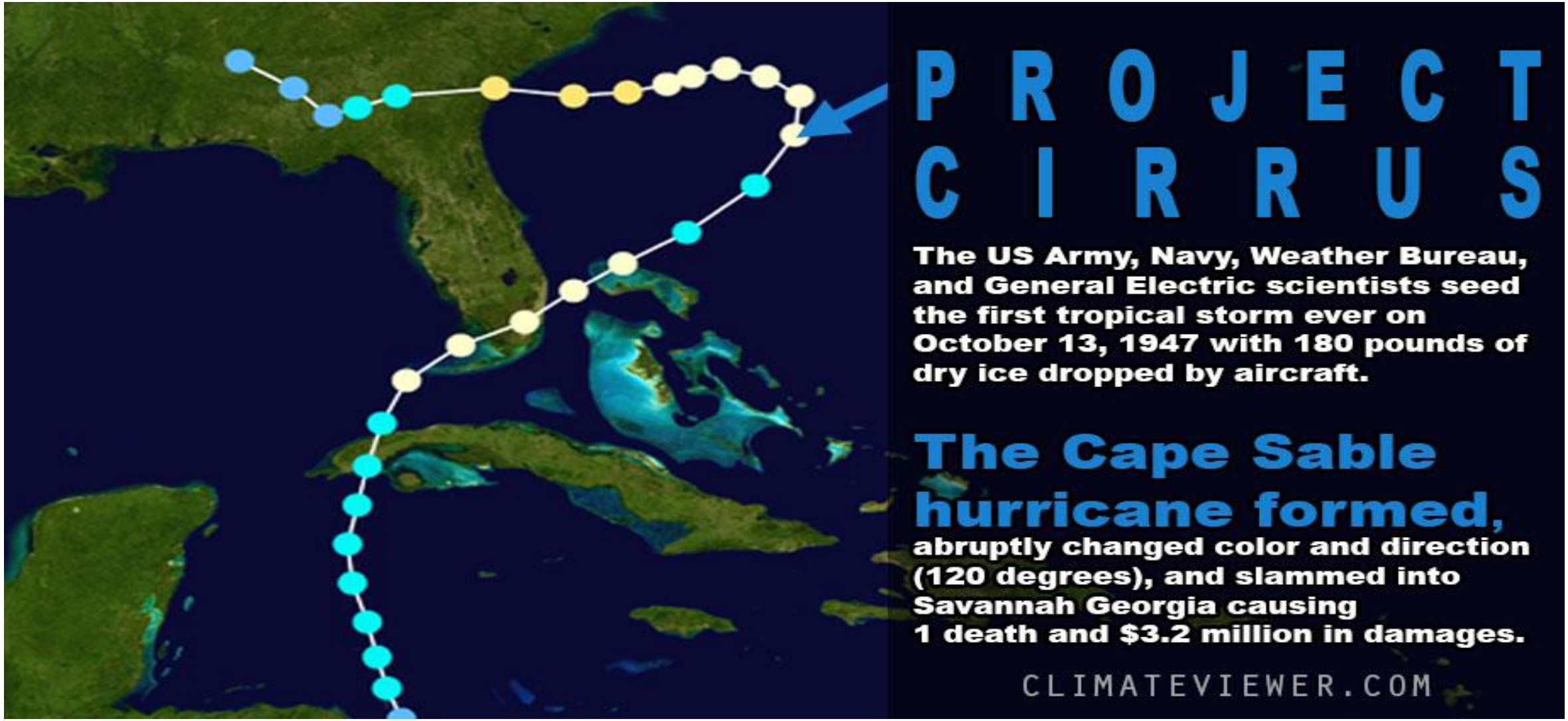
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06.03.2023

Možné přesměrování hurikánu prý zapříčinilo katastrofu ve státě Georgia

13. října, 1947



LANGMUIR VINÍ ZA POVODNĚ ARMÁDU

THE SPENCER DAILY REPORTER
THE ASSOCIATED PRESS The Spencer News-Herald LEASED WIRE SERVICE
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COUNTY NEWSPAPER SPENCER, IOWA, FRIDAY, APRIL 29, 1955

Blames Air Force for Floods

ALBUQUERQUE, (AP)— The man who fathered the science of making rain said Thurs. he believes armed forces experiments may have caused the disastrous Missouri Valley floods of June 1952.

Dr. Irving Langmuir, a Nobel Prize winner and consultant for General Electric Co. experiments with rainmaking, also declared:

1. An Air Force test on a tornado off the eastern coast Oct. 17, 1947,, may have turned the twister off its course and pushed it into Savannah, Ga., with damage of five million dollars.

2. There is evidence that rainmaking in some areas may create drought in others.

Langmuir was interviewed while attending the International Arid Lands Symposium, where scientists from 18 nations are seeking answers to the rapidly growing arid regions which already cover a third of the earth's land surface.

Steady Downpour

He declared that he thinks now —and insisted at the time—that a single silver iodide generator operating at Alamogordo, N. M., under Project Cirrus caused the steady downpours which drowned the Missouri Valley three years ago.

"We had been seeding for some time, and the storms kept getting bigger and better. I told them (the armed forces heads administering the project) that I felt we ought to stop seeding as the rains in the Missouri Valley kept falling.

"But the administrator of the project was on vacation at the time. No one would take responsibility for ordering the seeding stopped.

"Finally, I told them we must stop, things were getting serious.

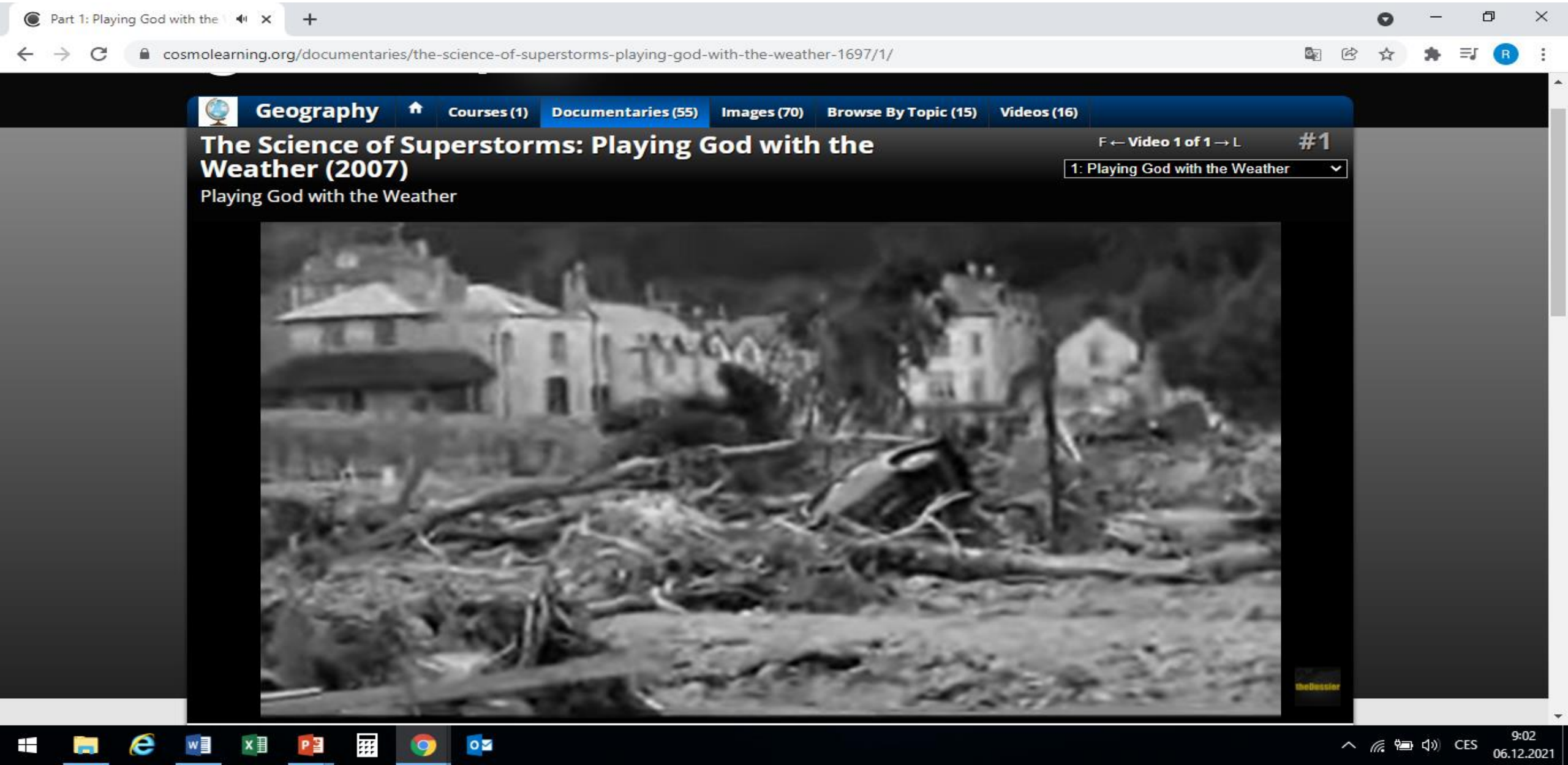
"We stopped on July 2. On July 7 the flood just about devastated Omaha.

"If we had stopped our generator two weeks earlier," Langmuir said, "the Missouri Valley floods would not have happened."

1955 04 29 dr irving langmuir believes air force to blame for missouri valley floods.jpg

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The Argu Friday, May 8, 1953
Sunny days on sale
Massachusetts, Thursday
Dr. Wallace Howells, the famous rain-maker of the 1950 New York drought, yesterday offered another product — sunshine.
"I could probably produce a rainless day for about $10,000 (about £4,500," he said.
The Sun
Weather Modification Company Reports:
CHEMICAL DISCOVERY PERMITS RAIN CONTROLLED LIKE WATER FROM TAP
NEWS-TRIBUNE
19 of 876
Hledat
8°C Slunečno
CES
0:04
09.05.2023

Britská armáda a projekt Witch Doctor 1952 – záplavy v rezortu Lynmouth (zdokumentováno i stanicí BBC)



BRITOVÉ VINÍ ZA DÉŠŤ LETADLA



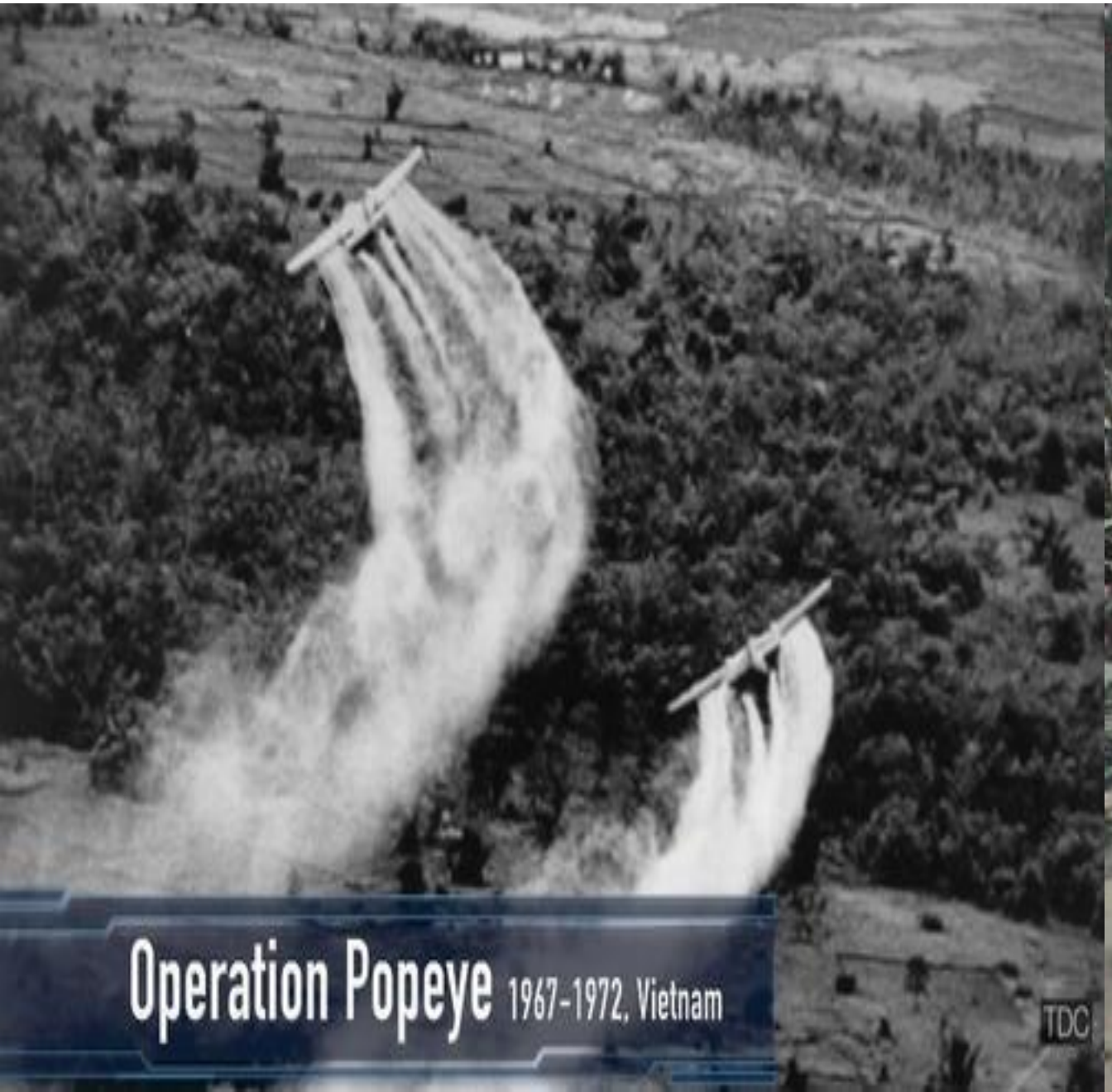
Project Storm Fury (běsnění bouře)

1962 - 1983

Modifikovat hurikány, cyklony



OVLIVŇOVÁNÍ POČASÍ PRO VÁLEČNÉ ÚČELY





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WEATHER MODIFICATION HISTORY

First published 1831

The Sydney Morning Herald. Friday, April 14, 1972

Weather war outcry

CONGRESSMEN QUERY AMERICAN RAINMAKING PROJECTS

From PETER BERNSTEIN in Washington

IT SOUNDS straight out of Buck Rogers, but at least a score of prominent scientists and congressmen suspect environmental warfare is already under way.

"There's no doubt in my mind that it's going on in Vietnam," says Representative Gilbert Gude.

"Such activities could very well lead to another international weapons race," warns Senator Claiborne Pell.

The Pentagon, they suspect, is secretly augmenting rainfall in South-East Asia for military purposes.

Although Pentagon officials have thrown a security blanket over all aspects of geophysical warfare, meteorologists agree that they are searching for ways to harness such "weapons" as earthquakes, tidal waves and tropical hurricanes.

For the first time in the history of warfare, the Air Force is reportedly seeding clouds over the Ho Chi Minh trail in North Vietnam. Last summer the monsoon fell with unprecedented fury and washed out railways and highways and crippled the electric generating capacity of North Vietnam. Similar floods in 1945 took a million lives.

In an exchange of letters made public last week, a group of congressmen asked for information last June about the Air Force's rain-making project, known by the code-name of "Intermediary-Compatriot."

Acting on behalf of a contingent of 130 senators and representatives called Members of Congress for Peace Through Law, they also asked for details about other instances of weather modification for military purposes.

The "Intermediary-Compatriot" project for seeding clouds during the monsoon was revealed on March 18 last year by the columnist Jack Anderson.

His report, based on a secret document, said the rain-making was started in 1967. Defence Department sources subsequently acknowledged the missions.

The Pentagon's chief scientist, Dr John Foster, has told the congressmen in a two-paragraph letter last December 8 that the information they sought was "classified."

He added: "I find it necessary to respectfully and regretfully decline to make a public disclosure of the details of these activities at this time."

In effect, he seemed to confirm that some form of weather modification activity was under way against the North Vietnamese, the congressmen said.

Their suspicions became even more pronounced when the Defence Secretary, Melvin Laird, informed them in a subsequent letter on March 18 that "some aspects of our work in this area (weather modification) have a definite relationship to national security and are classified accordingly."

He claimed information concerning the classified work had been provided in briefings with chairmen of the House and Senate armed services and appropriations committees.

But since then Congressional concern over military weather modification has grown. Three weeks ago, Senator Pell introduced a resolution setting forth a draft treaty to prohibit geophysical and environmental warfare.

And in a letter this week to President Nixon, Congressman Gude, who heads a special committee within the congressional press group, urged the President to adopt a "no first use" policy regarding offensive employment of environmental weapons.

Congressional concern has even spread to an unclassified Pentagon project known as "Nile Blue."

Under this project, a large and very powerful computer called the Illiac IV simulates atmospheric changes in order to predict the effects of modifications man might make in the environment.

The computer's military value was made clear in testimony last year before the Senate appropriations committee.

A witness, Stephen Lukasik, director of the Pentagon's Advanced Research Projects Agency, said in a prepared statement: "Since it now appears likely that major world powers have the ability to create modifications of climate that might be seriously detrimental to the security of this country, Nile Blue subproject was established in fiscal 1970 to achieve a US capability."

"The idea that this might be used as a military weapon is a very frightening thing," Congressman Gude said in an interview. "Using weather modification as a military tool opens the door to a vast new category of warfare."

He added that with evidence now that the 'merging of clouds could produce more than 30 times as much rain, it was possible to foresee the steering of tropical hurricanes and cyclones and the triggering of earthquakes in certain areas.

At the present rate of technological progress, geophysical warfare was a real possibility, said Gordon J. F. Macdonald, who first openly discussed the subject in a collection, "Unless Peace Comes," published in 1968.



Senator Claiborne Pell. Weapons race warning.

Now a member of President Nixon's Council on Environmental Quality, Macdonald believes steps should be taken to prohibit destructive manipulation of the weather.

"Let's start discussing it now at an early stage," he said, "so we don't repeat the mistakes we made with biological weapons, the production of something that turned out to be a wasted effort."

The National Academy of Sciences has also pressed for a ban against geophysical warfare.

Thomas Malone, dean of the graduate school at the University of Connecticut and chairman of the National Academy's special panel on weather modification, and then of all the fields of science, none had produced greater international co-operation than meteorology.

"What a tragic reversal it would be if we started using our knowledge to hurt one another over the head."



Mr Melvin Laird, National security involved.

The Canberra Times

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CLOUD SEEDING OVER VIETNAM

CLIMATEVIEWER.COM

new scientist

20 April 1972 Volume 54 Number 792

The weather as a weapon of war

Despite the emphasis on arms limitations in the SALT talks and the biological warfare treaty signed last week, the armourers continue to thrive. European newspapers have recently included references to Nile Blue, the code name for what appears to be a US project for research into weather modification for military purposes.

Most of the references stem from an article in Dan Greenberg's Science and Government Report (vol 1, no 22). There Greenberg reported that there was a struggle led by Senator Pell to put a damper on the Defense Department's interest in "geophysical warfare". According to Greenberg, despite attempts to maintain total official silence, meteorologists and geophysicists were aware of military exploration of the possibilities of rain-making, rumoured to be already in use on the Ho Chi Minh Trail. Other applications are believed to include "earthquakes, tidal waves and ecologically disruptive temperature alterations".

Greenberg refers to the contribution of Gordon McDonald, a former member of the President's science advisory committee and now serving on the Council on Environmental Quality, to the book, Unless Peace Comes edited by Nigel Calder (Penguin Press, London, 1968).

As MacDonald says, the key to geophysical warfare is the identification of the environmental instabilities to which the addition of a small amount of energy would release vastly greater amounts of energy. Among the techniques on which he speculates is the creation of a temporary "hole" in ozone layer over a target area, releasing the full force of solar ultra-violet radiation which would be fatal to all life. (This might be achievable by either physical or chemical action). Earthquakes might be triggered if the strain pattern in the crust could be accurately determined, by the timed release of energy through small explosion at a distance. Phased explosions might even be used to create conditions for a "guided tidal wave".

Although the State Department and the Arms Control and Disarmament Agency are less than enthusiastic over such research, the Defense Department is having its way at least to the extent of a budget of $3 million for 1972. The need was defended before the Senate Appropriations Committee by Stephen Lukasik, director of Department of Defense's Advanced Research Projects Agency.

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WEATHER MODIFICATION HISTORY

THE AGE

Wednesday, July 5, 1972 250 Spencer St., Melbourne 60 0421 (Classified 60 0611) 118th Year 48 Pages 6c

TORNADO CONTROL UAV DRONE

WEATHER WARFARE

OPERACE NILE BLUE NA KUBĚ

CIA Project Nile Blue - Rain Emba

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CIA Are The Weathermen

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WEATHER MODIFICATION HISTORY

7/2-8/76

-- Betty Segal

Did the CIA order weather modification to ruin the Cuban sugar crop in 1969 and 1970, or didn't it?

Lowell Ponte, former researcher for International Research and Technology Corporation, a Pentagon "think tank," says the CIA and Pentagon ordered cloud-seeding off the shores of Cuba, to "milk" rain clouds, at a time when Castro's fortunes seemingly depended on a successful harvest of sugar cane.

The CIA has categorically denied it practiced cloud seeding anywhere except in Vietnam during that time period.

Ponte says the Cuban experiment was part of "Project Nile Blue," carried on officially starting in 1970 by the Pentagon's Advanced Research Projects Agency (ARPA). Later exposure of the project by scientists opposed to the war revealed that weather experimentation there had begun as early as 1966. A computer model for "Nile Blue" was developed by the main computer installation, known as ILLIAC 4, located at Moffett Field in Mountain View.

Ponte says the Cuban cloud-seeding effort did produce erratic weather which cut down the sugar harvest those years, but that on the whole weather science is too "primitive" and unpredictable to produce certain results. He adds that "Nile Blue" was really aimed at "destabilizing" weather in the Soviet Union, China and Cuba, to ruin harvests and create political unrest.

SFExaminer Jun 27 1976

Another CIA plot: Cuba crops

FOLLOW US ON FACEBOOK WEATHER MODIFICATION HISTORY

United Press International

LOS ANGELES — The United States used cloud seeding to dry up the Cuban sugar crop in 1969 and 1970, Lowell Ponte, a former Pentagon think tank researcher, said yesterday.

It was part of a secret Pentagon project aimed at using nature weapons to destabilize weather in the Soviet Union, China and other Communist countries, and to enhance the power of U.S. food sales, he said.

Ponte, a former specialist for the International Research and Technology Corp., said the CIA and the Pentagon seeded clouds in wind currents that carry rains to Cuba.

"Between 1968 and 1972 the CIA and later the Pentagon were using cloud-seeding to make enemy trails muddy in Southeast Asia," Ponte said in an interview for National Public Radio.

"But the seeding near Cuba was to cause less rain, not more. It was supposed to squeeze rain out of clouds before they reached the island. You might say we tried to embargo rainclouds."

The experimental seeding was stepped up in 1970, Ponte said, after Cuban Premier Fidel Castro staked the honor of his Communist government on the success of that year's sugar crop.

"Castro set a harvest goal of 10 million tons of sugar," Ponte said. "The CIA decided, after Castro's promises, that failure would demoralize his people and make Cuban Communism appear a failure."

The cloud seeding brought erratic weather in Cuba and the sugar harvest fell short of its goal. Castro offered to resign, but remained in office, Ponte said.

"Weather science is too primitive to say that cloud seeding hurt Cuba's harvest," Ponte said. "But it could have. The point is our government secretly attempted to tamper with the weather in another nation, with which we were not at war, in an effort to cause economic and political harm."

Ponte, author of "The Cooling," a book dealing with climatic change and manipulation of weather for political reasons, said the cloud seeding near Cuba was originally to provide information for a Pentagon project called "Nile Blue."

The secret project, he said, has studied ways to melt polar icecaps, direct hurricanes and tornadoes as weapons and to "destabilize weather in the Soviet Union, China and Cuba" to ruin harvests.

The Pentagon and CIA study was aimed at increasing America's "food weapon" — the political use of food sales — in much the same way the Arab nations use oil, he said.

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The Desert Sun

Saturday, October 30, 1976 | Palm Springs, California | 34 Pages, 3 Sections | 15 Cents

Canadian's Suit Continues

WASHINGTON (UPI) — A federal judge must decide whether the CIA and the Pentagon infringed on a Canadian meteorolgist's rainmaking process during the Vietnam War.

Bernard A. Power, a professional meteorologist and president of Weather Engineer Corp. of Canada, Ltd., sued the U.S. four years ago and the trial began Sept. 22 in the U.S. Court of Claims. Arguments ended Friday.

Judge Joseph V. Colaianni is expected to rule in about 10 days on the first part of the two-section

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THE new indicator

November 17–30 1976 | UC San Diego | Volume 2 | Number 2

CIA Tampered with Cuba's Weather

Fig. 1. Aerosol generators installed (a) on the helicopter and (b) on the car chassis.

Russian Geoengineering Solar Radiation Management Field Experiment

September 25, 2005



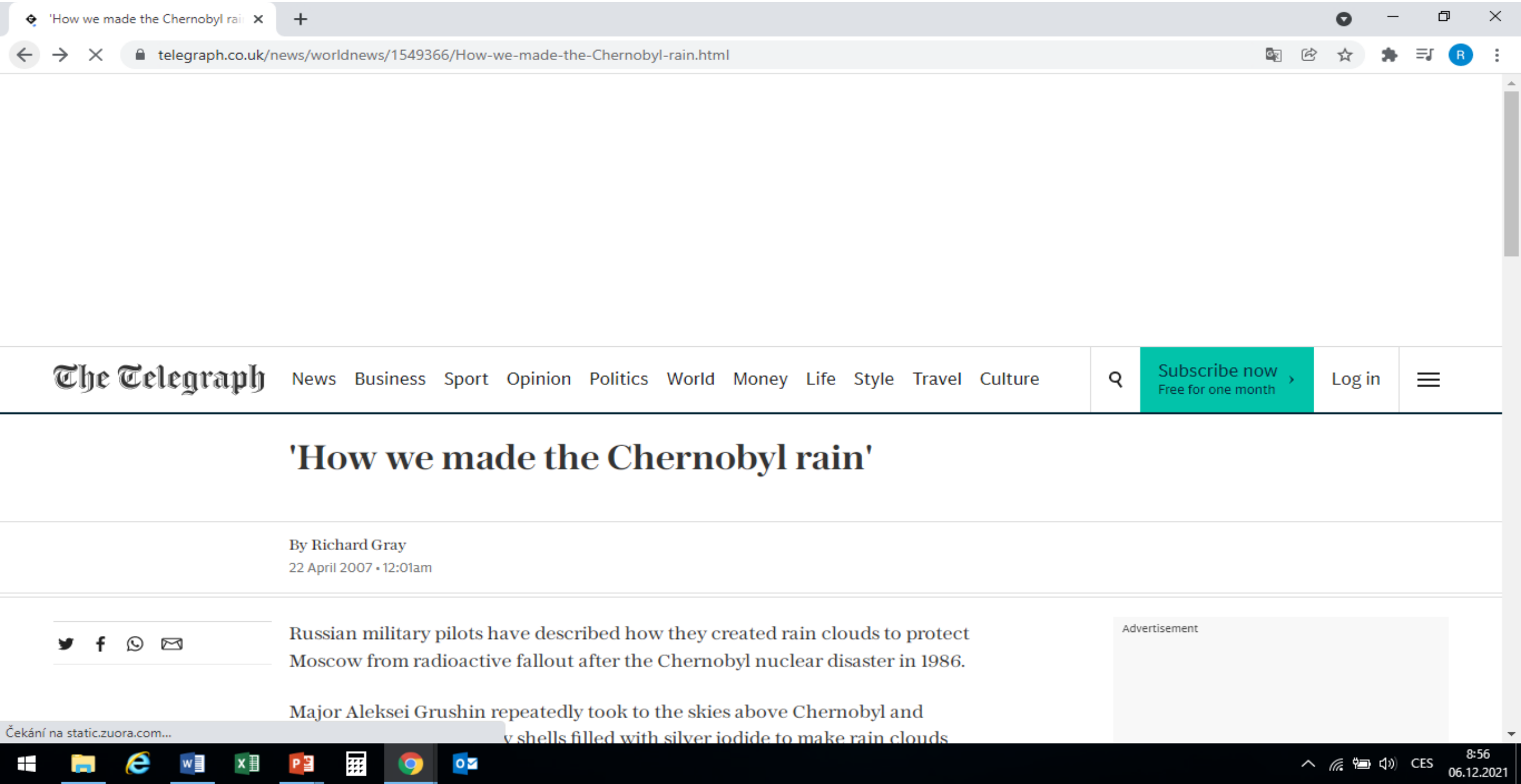
Chinese Weather Modification at the Beijing Olympics

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Sapna Singh Friday 17th of July 2020 12:04 PM



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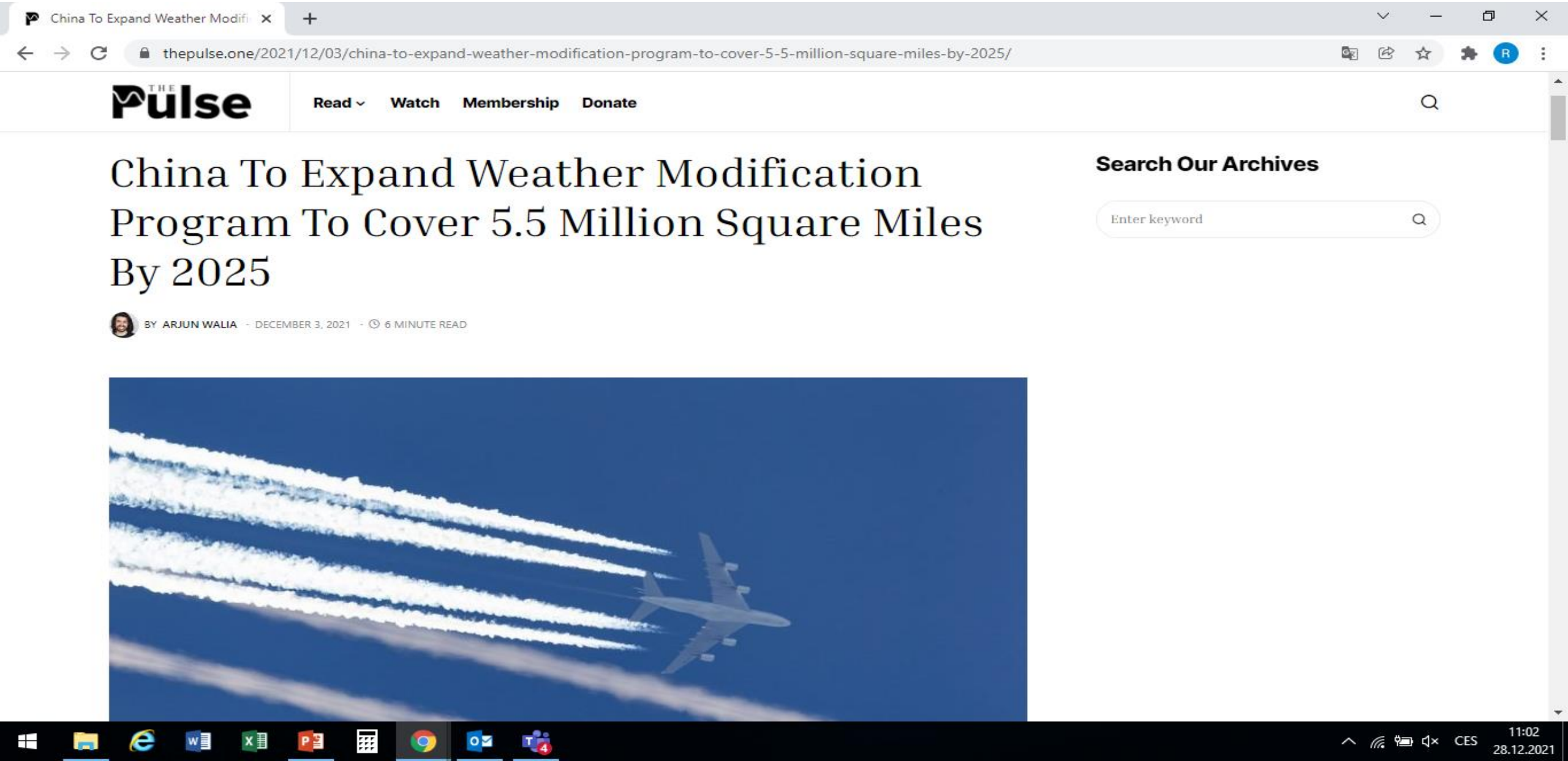


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World Cup

Fake cloud plan for 2022 World Cup

ESPNsoccernet staff
March 24, 2011

Visitors to the 2022 World Cup in Qatar could be kept cool by artificial clouds, according to Qatari scientists.



An artist's impression of the Al-Rayyan stadium for the 2022 World Cup finals © PA Photos

Enlarge

A country that has already pledged to air condition stadiums in order to combat extreme heat in the summer months, with temperatures approaching 50 degrees Celsius, has now unveiled another innovative solution to the problem.

Scientists at Qatar University claim to have invented a synthetic cloud which could shield stadiums and training grounds from oppressive heat. It is reported each cloud could cost in the region of $500,000. The project will be developed in conjunction with Qatar Science and Technology Park.

Saud Abdul Ghani, head of the Mechanical and Industrial Engineering at Qatar University, said: "Artificial cloud will move by remote control, made of 100% light carbonic materials, fuelled by four solar-powered engines and it will fly high to protect direct and indirect sun rays to control temperatures at the open playgrounds."

Qatar's surprise success in winning the right to host the tournament in 2022 was immediately followed by real concerns that extreme temperatures would create health problems for competitors and spectators alike.

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It's so hot in Dubai that the government is artificially creating rainstorms

BY SOPHIE LEWIS
JULY 23, 2021 / 7:12 AM / CBS NEWS

With temperatures in Dubai regularly surpassing 115 degrees Fahrenheit, the government has decided to take control of the scorching weather.

Scientists in the United Arab Emirates are making it rain – artificially – using electrical charges from drones to manipulate the weather and force rainfall across the desert nation. Meteorological officials released video footage this week showing a downpour over Ras al Khaimah, as well as several other regions.



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"Of course, our ability to manipulate weather is puny compared to the forces of nature," vice-chancellor Robert Van de Noort said during the visit. "We are mindful that we as a University have a big role to play, by working with global partners to understand and help prevent the worst effects of climate change."

In 2017, researchers at the university were awarded $1.5 million in funding for what they call "Rain Enhancement Science," also known as man-made rainstorms. The UAE's total investment in rain-making projects is $15 million, part of the country's "quest to ensure water security."

"The water table is sinking drastically in UAE," University of Reading professor and meteorologist Maarten Ambaum told BBC News. "And the purpose of this is to try to help with rainfall."

The UAE is one of the first countries in the Gulf region to use cloud seeding technology, the National Center of Meteorology said. A version of the concept is used in at least eight states in the western U.S., according to The Scientific American.

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By 2007, the Dubai-based newspaper Gulf News was reporting that the UAE had expanded its research on cloud seeding to include the National Aeronautics and Space Administration, an American government agency better known as "NASA."

A year later, Gulf News claimed that Emirati scientists, equipped with a top official's aeroplane, had managed to engineer artificial rainfall over Abu Dhabi, Dubai, and the UAE's south and west. The newspaper described the experiment, an initiative meant to replenish the UAE's groundwater, as a "thundering success."

In 2011, *The Sunday Times* recounted how scientists working for the local government of Abu Dhabi had undertaken an $11 million campaign the previous summer to deploy a series of ionizers in the desert. The scientists credited the ionizers, which *The Daily Mail* compared to "stripped down lampshades on steel poles," with making 50 rainstorms over the city of al-Ain.

Experts, including an official from NCAR, cast doubt on the credibility of the Emirati claims and the techniques used by Meteo Systems, the Swiss company that Abh Dhabi had enlisted for the project. Even so, the UAE remained undeterred: in 2013, it spent hundreds of thousands of dollars on over 200 cloud-seeding missions. That number rose to 242 in 2018. The UAE has said that these efforts increased rainfall by 15 to 35 percent, depending on the area. The country is now experimenting with drones that induce rain via lasers.

The UAE's aggressive investment in clouding seeding is inspiring a wider trend across the Gulf. NCAR, for its part, has researched the potential of cloud seeding in Saudi Arabia. In February 2020, the kingdom outlined plans to launch a cloud-seeding programme in the regions of Asir and al-Bahah, where Saudi scientists aim to create a 20 percent increase in rain. In a more offbeat pursuit,

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How Gulf countries will 'make it

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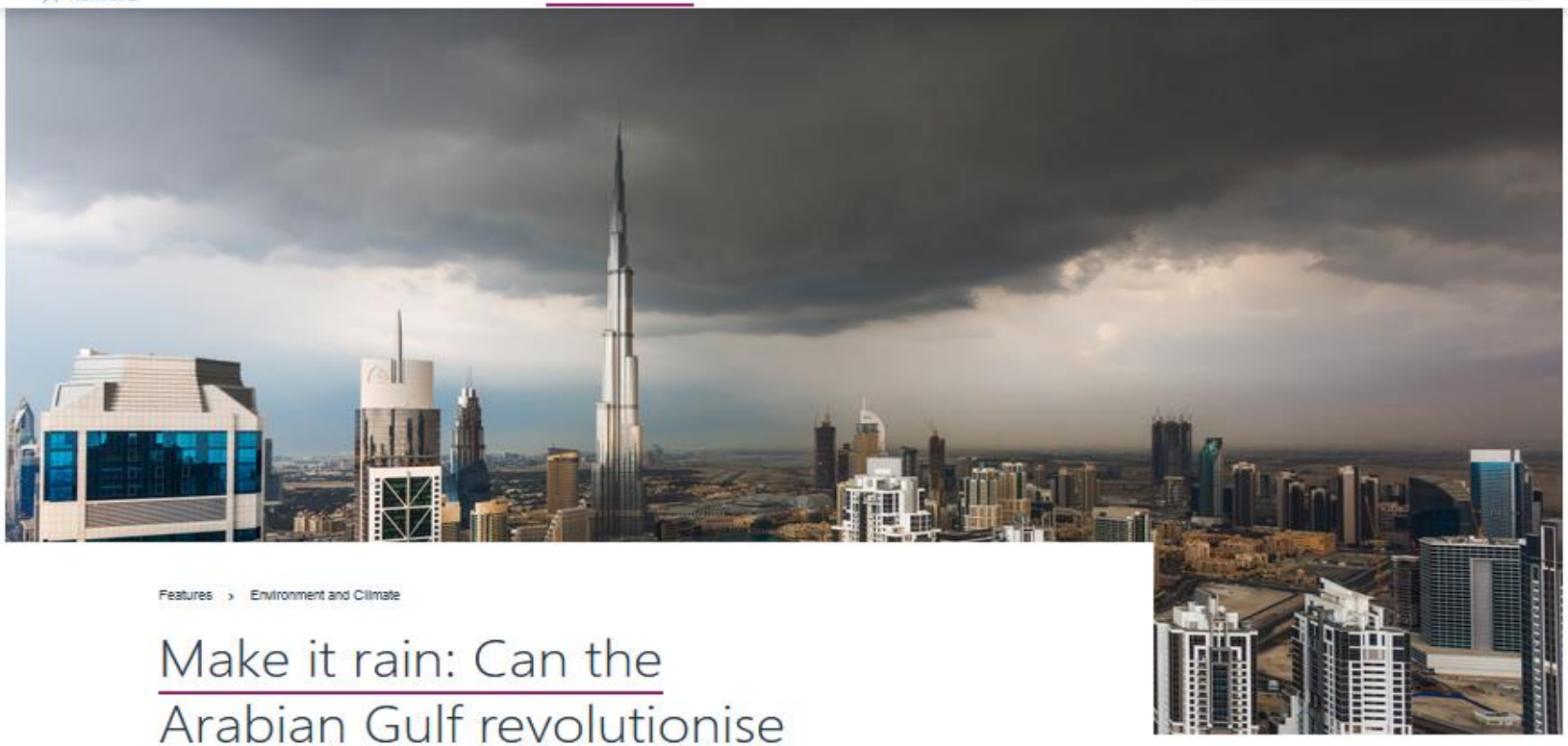
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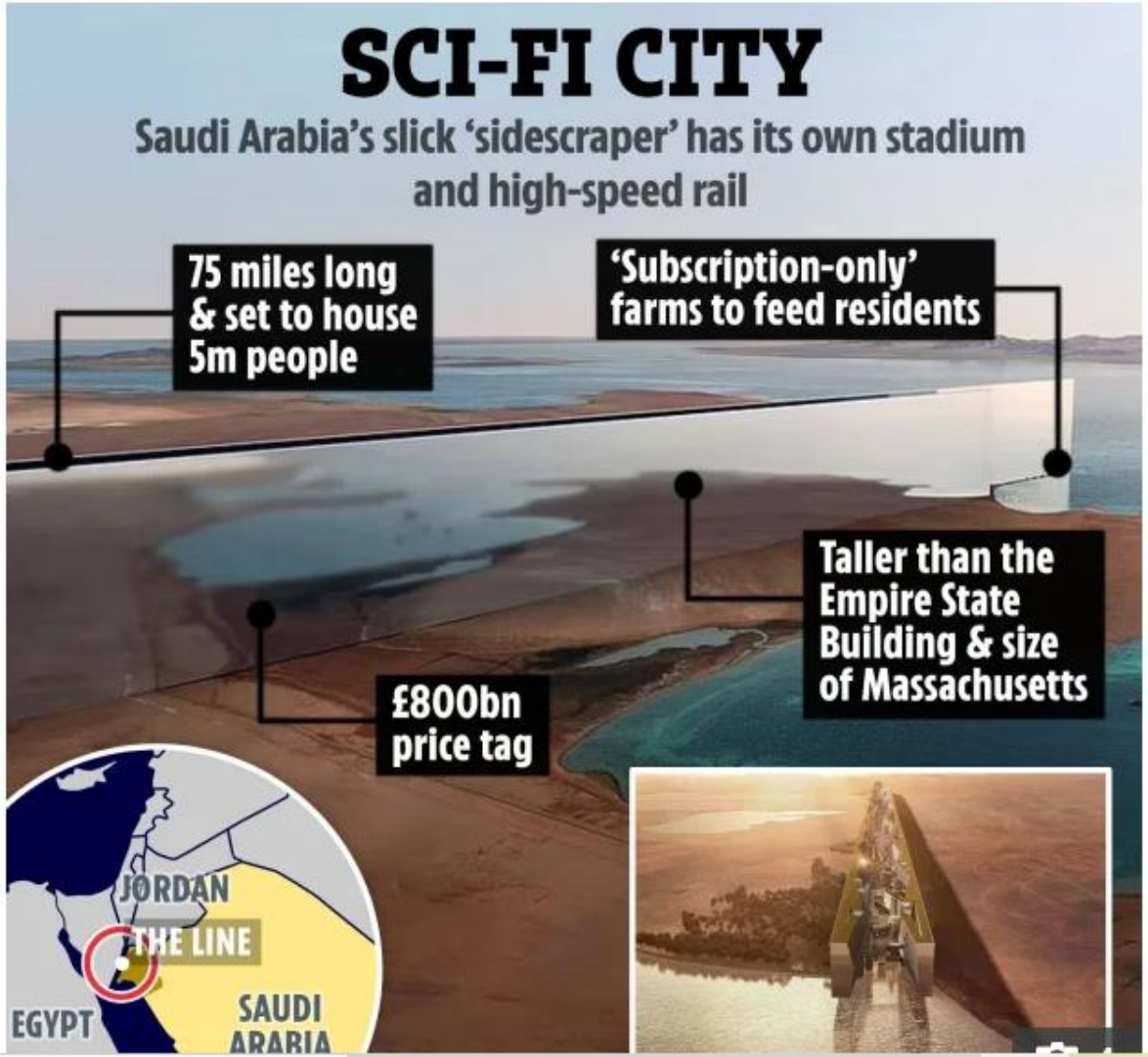
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Original Paper | Published: 11 February 2021

Effect of cloud seeding on aerosol properties and particulate matter variability in the United Arab Emirates

A. Farahat & A. Abuelgasim

International Journal of Environmental Science and Technology **19**, 951–968 (2022) | Cite this article

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Abstract

In this study, satellite data and those obtained from air quality monitoring stations were used to evaluate the effect of cloud seeding missions conducted from January 2017 to March 2017 in the United Arab Emirates (UAE). To determine PM variability during and after the cloud seeding missions, information on daily mean particulate matter (PM_{10} and $PM_{2.5}$) concentrations obtained from 20 air quality

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were divided according to four distinct geographic zones, which include petrochemical and non-petrochemical industrial, residential, and low populated areas. Moreover, data from the MAIAC 1-km product (MCD19A2) obtained using the Moderate Resolution Imaging Spectroradiometer onboard the Terra satellite were used to identify the correlation between aerosol optical depth and ground PM concentrations. The results showed that among the areas, the petrochemical and non-petrochemical industrial areas had the highest $PM_{2.5}$ levels. Urban areas located adjacent to deserts had significantly higher PM_{10} concentrations than other urban areas. The PM concentration was high during the period of cloud seeding missions. This finding indicated that silver iodine crystals fired during the missions might have increased the concentration of PM in the air. Moreover, cloud seeding missions might have a more significant effect in increasing PM_{10} concentrations compared with $PM_{2.5}$ concentrations. Hence, local weather conditions might have affected the decay of silver iodine particles during the missions. Long-range air mass transport may have an influence on the natural and anthropogenic particle concentrations in land and water bodies surrounding the UAE.

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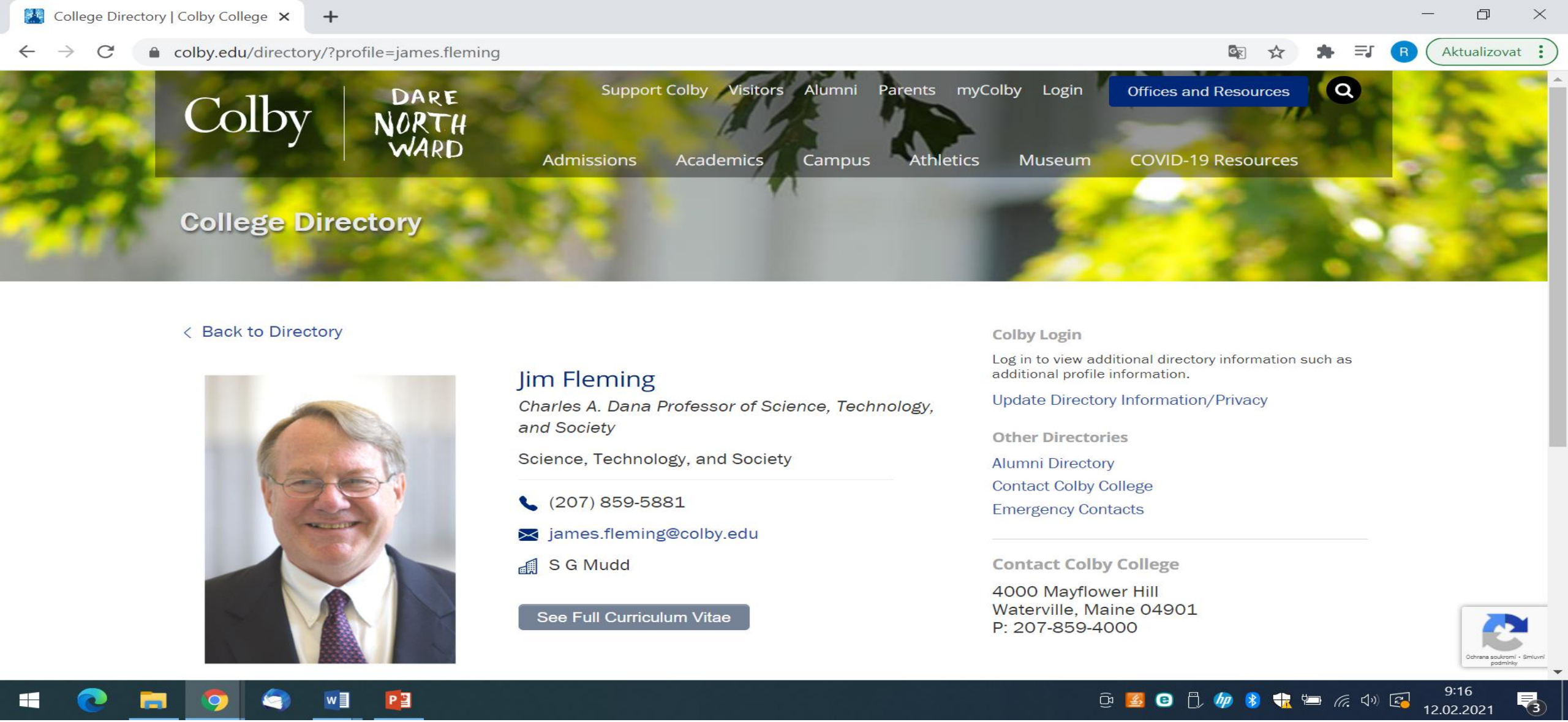
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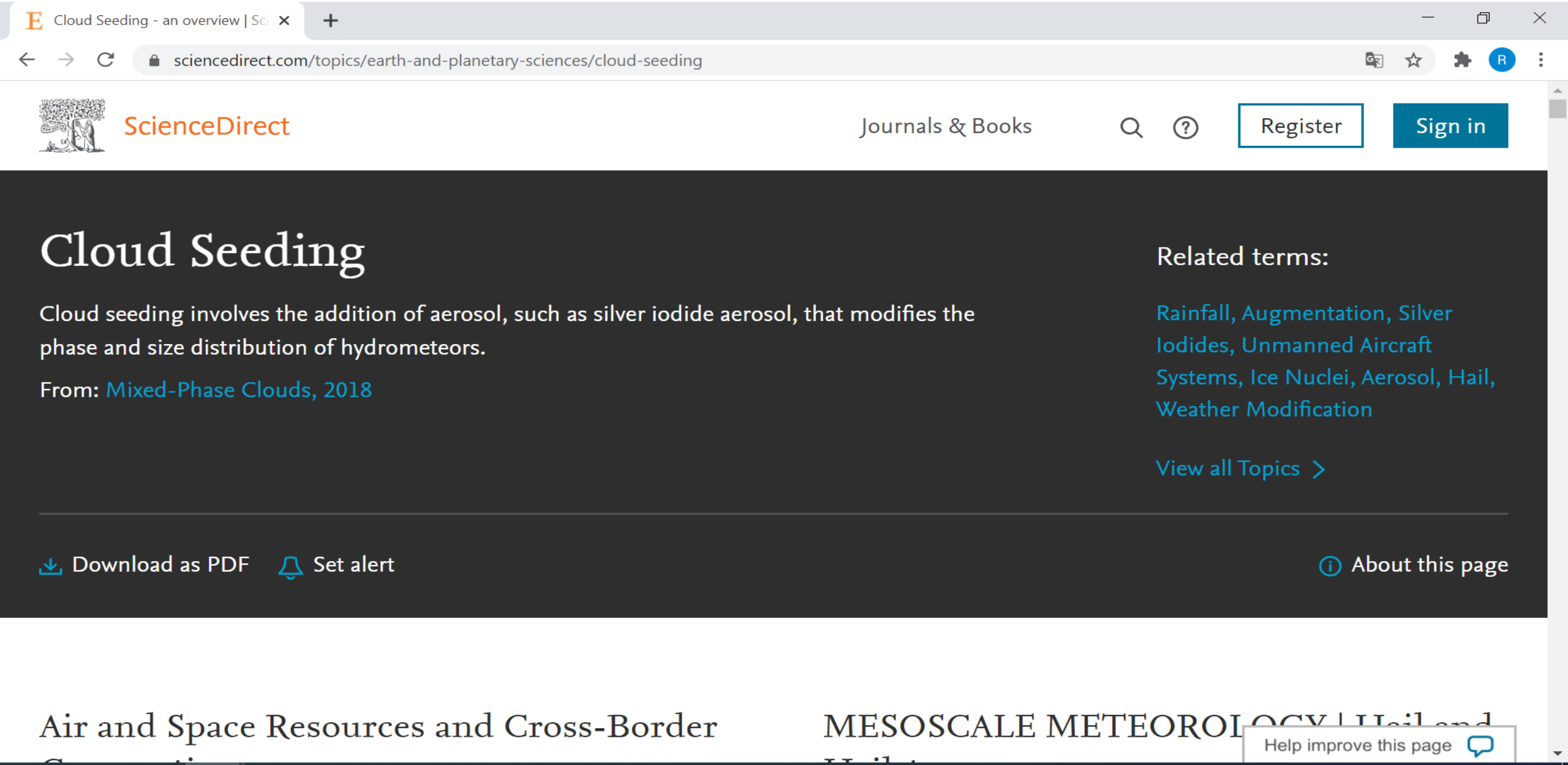
Záměrné ovlivňování počasí a klimatu

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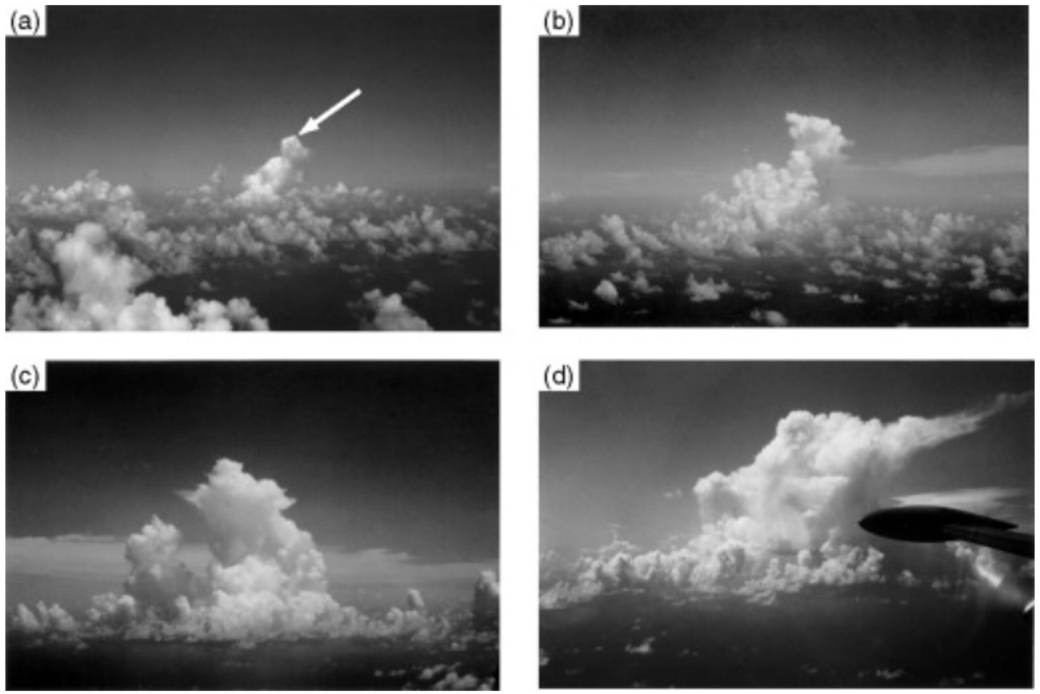


*„**Masivní osévání mraků** tohoto typu a ty, které byly navrženy již v 50. letech Irvingem Langmuirem, mají takový rozsah, že **mohou mít dopad na klima**.“* vědecký historik **Jim Fleming (americký profesor z Colby College)** Jim Fleming (@JFlemingHistory) December 4, 2018

METODA OSÉVÁNÍ MRAKŮ POMOCÍ JODIDU STŘÍBRNÉHO



the height of a cloud were restricted by a stable layer, the release of the latent heat of fusion caused by artificial seeding might provide enough buoyancy to push the cloud through the inversion and up to its level of free convection. The cloud top might then rise to much greater heights than it would have done naturally. Figure 6.48 shows the explosive growth of a cumulus cloud that may have been produced by overseeding.



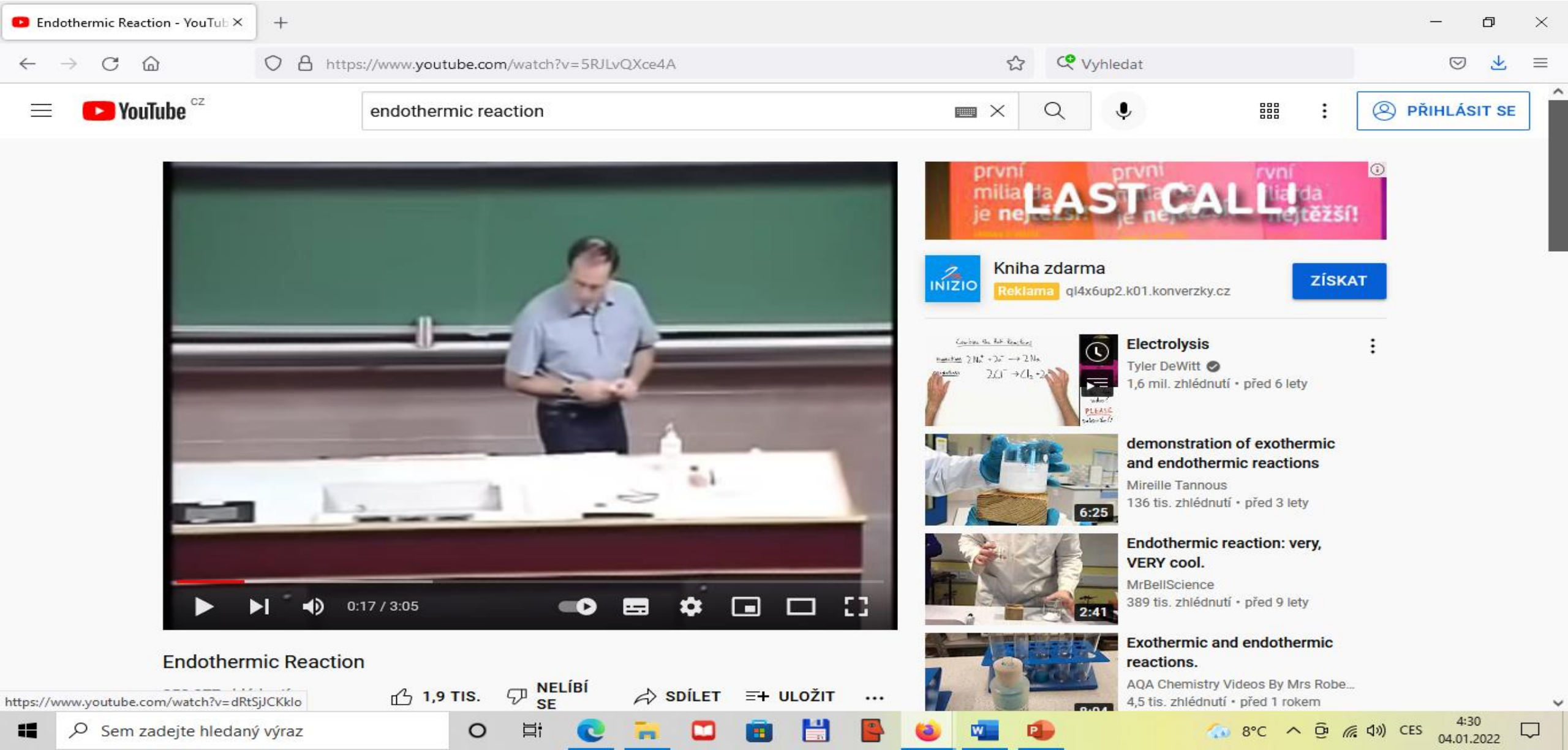
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The right-hand side terms in this expression can be calculated from available data. It is obvious that Eqs. (7.29)–(7.31) are linear and, therefore, the arithmetic averages for small samples and theoretical expectations of both sides yield $\overline{D}_G = \overline{E} - 1$; $\overline{D}_G = \overline{D}_N + \overline{D}_S$; and $\overline{D}_S = \overline{D}_G - \overline{D}_N$, respectively. In calculating the net effect of cloud seeding according to the above equations the following procedure must be applied:

1. Calculate the frequency diagram of the effectivity coefficient from available past observations. In this case, D_N becomes equal to D_G. Subsequently, calculate the natural deviation $D_N = E - 1$ and its frequency distribution for any desired daily period (5 day, 10 day, 20 day, etc.). Hence, for each period there will be a unique frequency distribution for D_N and, consequently, it is possible to calculate its statistical summary values such as the arithmetic mean, standard deviation, mode value, and so on. This distribution function is referred to as the "frequency DRM," the application of which is furnished in the following section. Let us denote the mean value of this frequency function by $\overline{D}_N$ and so if the frequency diagram is symmet

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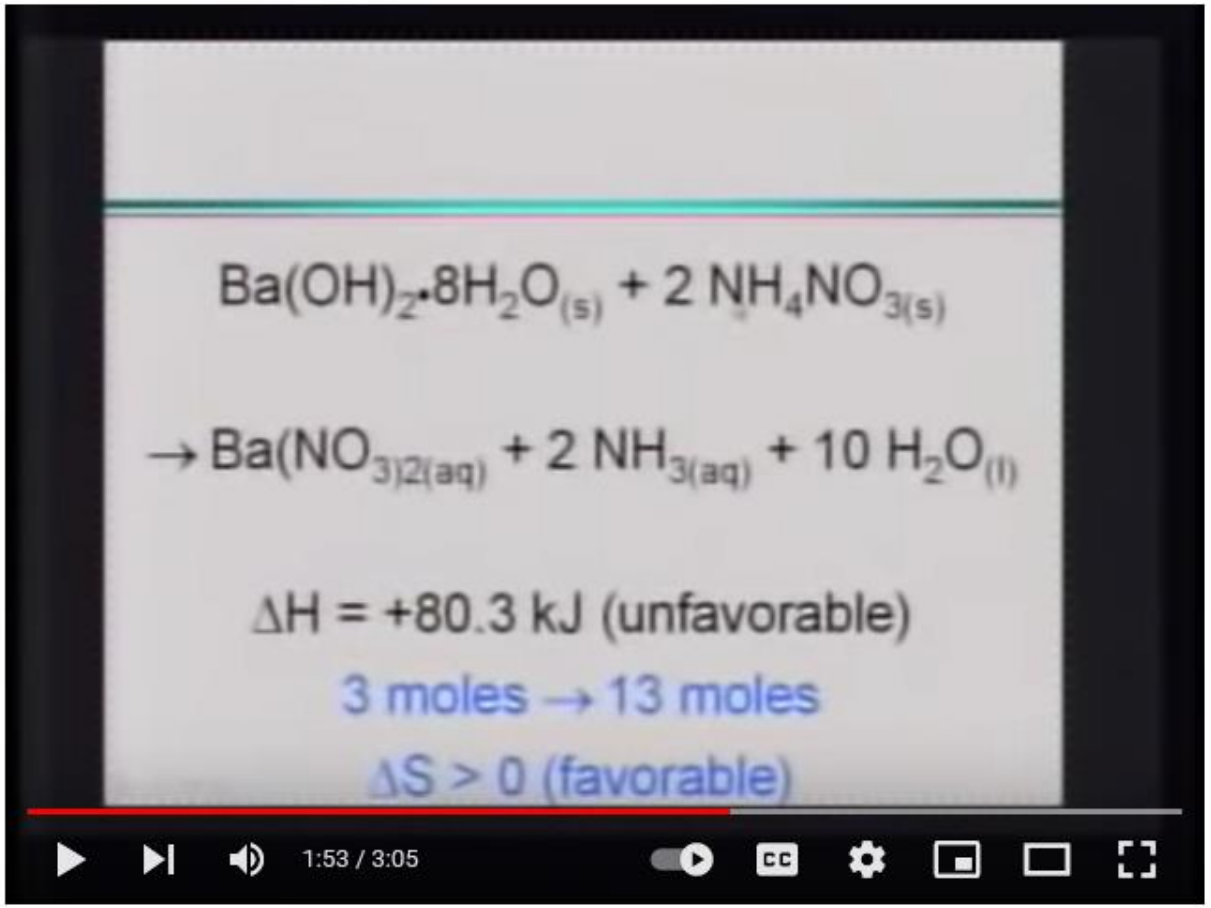
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Bob Burk

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Endothermic reaction: very, VERY cool.

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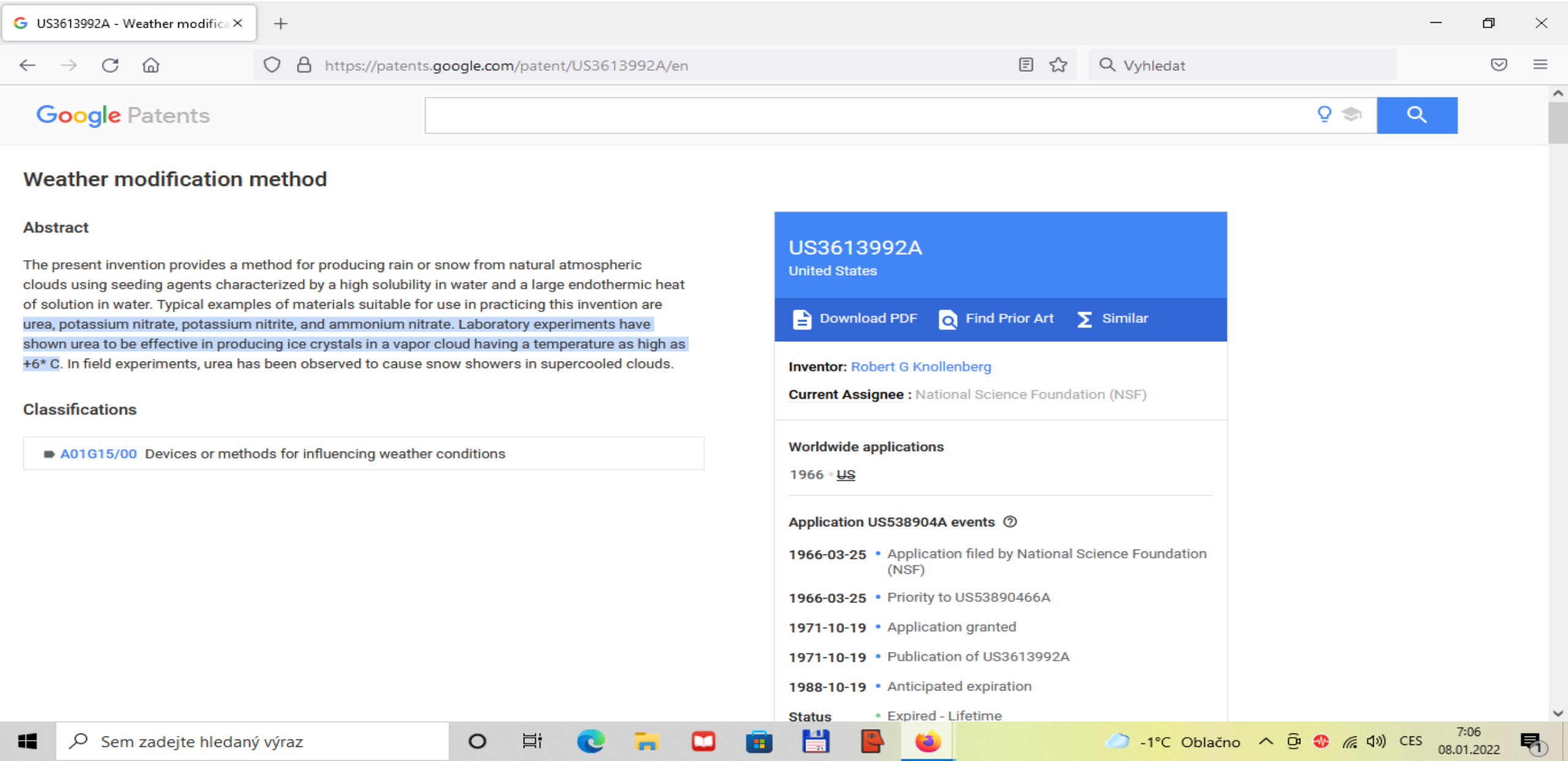
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CES

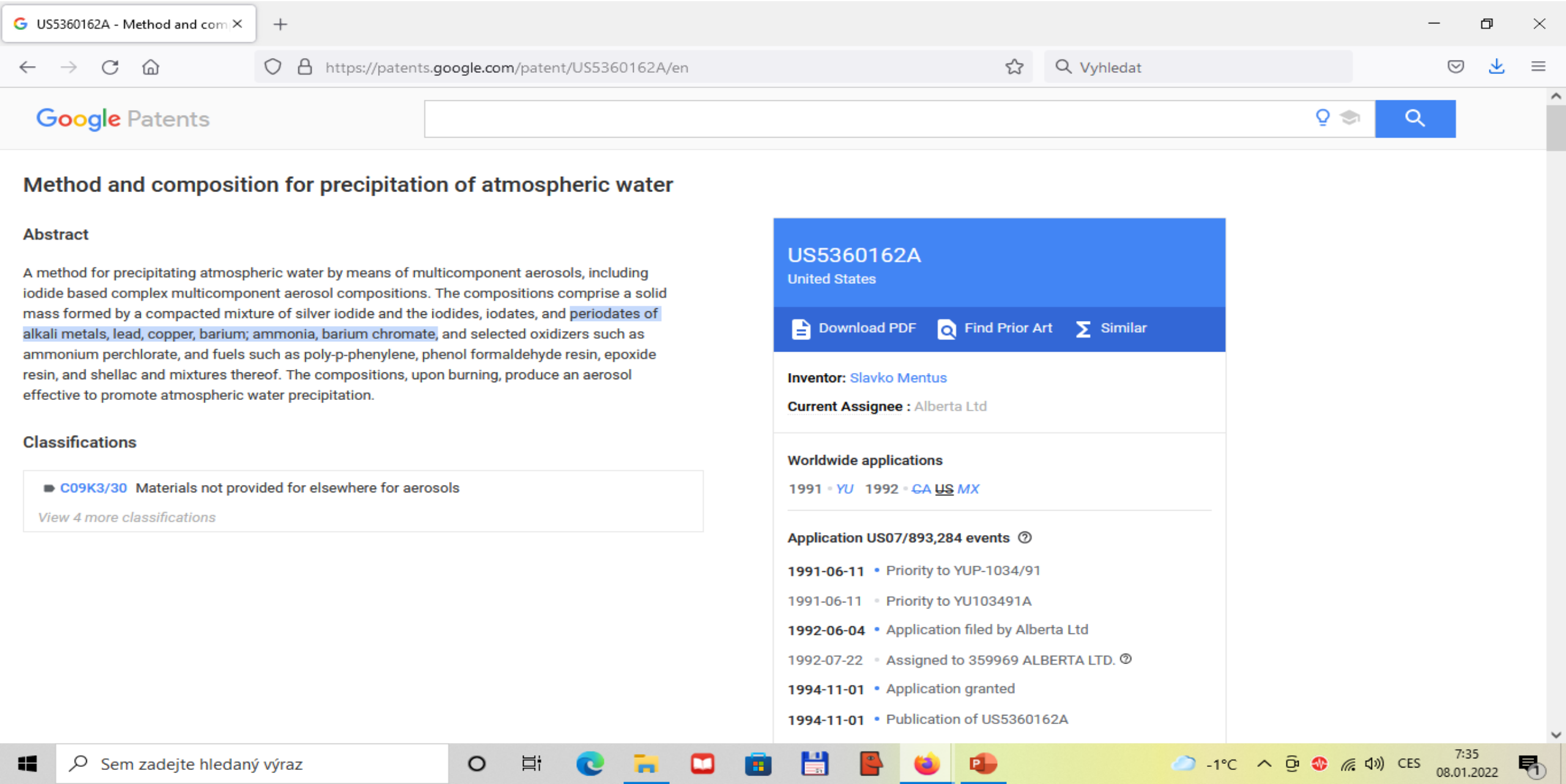
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16.05.2023

Patent – metoda pro ovlivňování počasí (sloučeniny vytvářející endotermickou reakci při vyšších teplotách)



Patent navrhuje k vyvolání deště využít alkalických kovů, olova, mědi, barya…



Dusičnan draselný, dusičnan amonný, urea

US3613992A - Weather modifica

https://patents.google.com/patent/US3613992A/en

approaches have been used previous to the present invention. In the first, foreign material having a hexagonal crystalline structure similar to ice is introduced into clouds in order to stimulate by an epitaxial mechanism to growth to icecrystals within the clouds. Epitaxial ice crystal growth occurs by the accretion of water molecules on a seed crystal with a matching lattice structure and similar molecular distances. Typical of materials capable of acting as an ice nucleus in this manner are silver iodide, lead iodide, cupric sulfide, and kaolinite. Silver iodide has been the most widely used artificial seeding nucleus because of its high threshold temperature. The threshold temperature is the highest temperature at which a seeding agent is effective in producing ice crystals in a cloud of water droplets. The second approach has been to drastically supercool a local area of the cloud, thereby causing homogeneous ice nucleation in the cloud. A typical material employed in this manner is solid carbon dioxide or Dry Ice.

Although these approaches have proved useful, they have not been entirely satisfactory under all conditions. Silver iodide is expensive and requires special generating equipment; further, it tends to decompose after a short exposure to the atmosphere. Lead iodide, cupric sulfide and kaolinite are characterized by low threshold temperatures. Furthermore, all previously known ice nuclei required supercooling of the cloud. Solid carbon dioxide suffers from the disadvantage that it readily sublimates under atmospheric conditions. Furthermore, it is relatively insensitive since the number of ice particles produced per particle of solid carbon dioxide is relatively small. The general purpose of this invention is to provide a method for weather modification which embraces all the advantages of the prior art approaches and possesses none of the aforementioned disadvantages. To attain this, the present invention contemplates the use of seeding agents which have a high solubility in water and a large endothermic heat of solution in water. By an endothermic heat of solution is meant the absorption of heat on dissolution which results in cooling of the solution. Such a seeding agent is capable of acting both as a condensation nucleus and as an ice nucleus. Typical materials which have a high solubility in water coupled with a large endothermic heat of solution in water are potassium nitrate, potassium nitrite, ammonium nitrate, and urea.

Laboratory and field experiments have shown finely divided crystalline urea to be

solubility in water and a large endothermic heat of solution is potassium nitrite.

14. 15. The method of claim 11 wherein the material having a high solubility in water and a large endothermic heat of solution is ammonium nitrate.

15. 16. The method of claim 12 wherein the urea forms a coating on the crystalline material capable of acting as an ice nucleus.

16. 17. The method of causing ice crystal formation in a mass of water droplets suspended in air and having a temperature less than 6* C., which method comprises introducing in said mass particles of finely divided urea whereby the water droplets are simultaneously condensed on and cooled by the urea particles thereby causing crystallization of water in the aforementioned mass of water droplets.

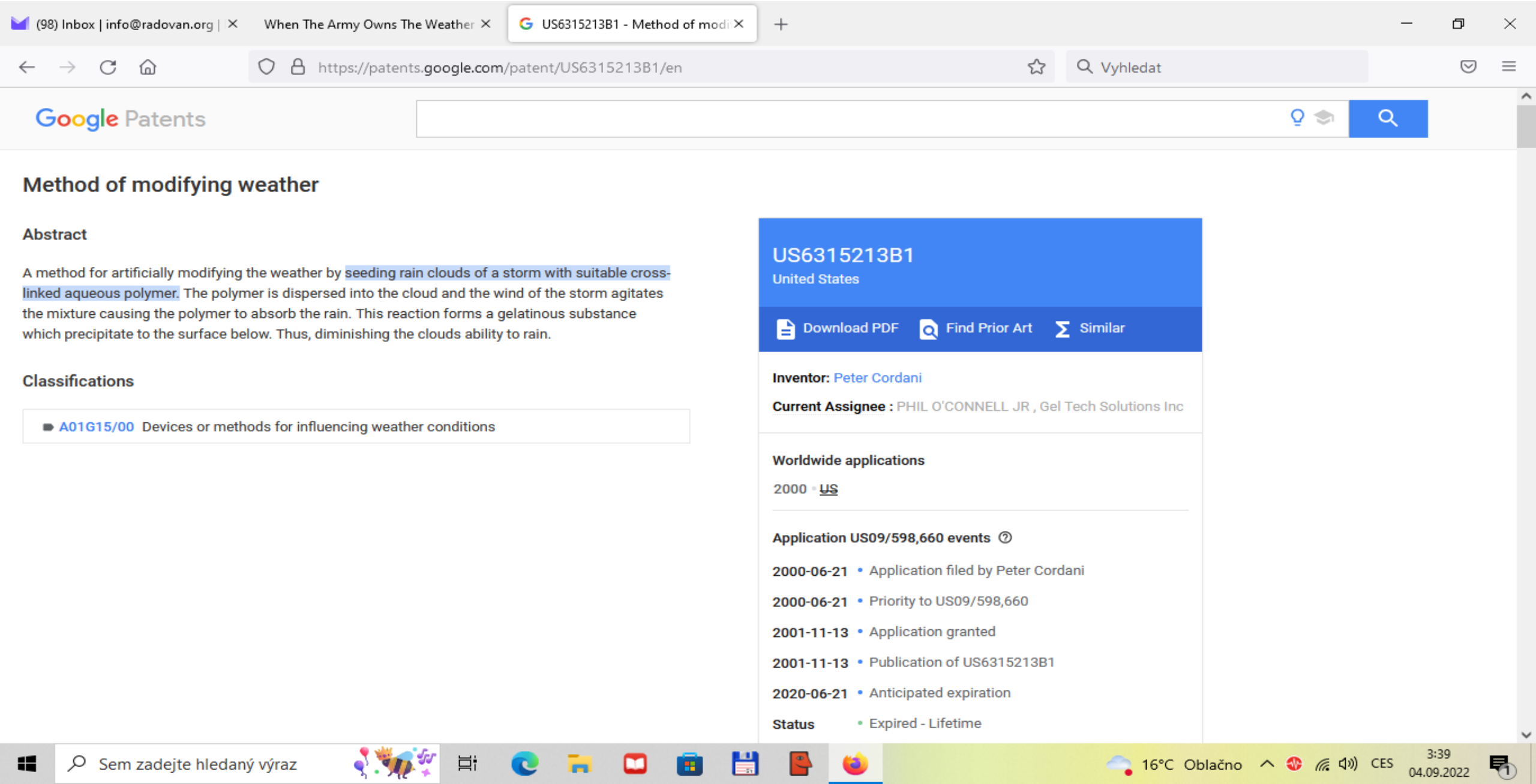
17. 18. The method of causing precipitation from a natural atmospheric cloud consisting of supercooled water droplets which comprises introducing into said cloud particles of a finely divided solid material foreign to said cloud having a high solubility in water and a large endothermic heat of solution in water and selected from the group consisting of urea potassium nitrate, potassium nitrite, and ammonium nitrate whereby the water droplets are simultaneously condensed and cooled by the said particles thereby causing crystallization of the water droplets in the aforementioned natural atmospheric cloud.

Sem zadejte hledaný výraz

-1°C Oblačno

CES 7:09 08.01.2022

ČI RŮZNÉ POLYMERY



NAPŘ. PŘI OSÉVÁNÍ BOUŘÍ POMOCÍ LETADEL

(98) Inbox | info@radovan.org | When The Army Owns The Weather US6315213B1 - Method of modi

https://patents.google.com/patent/US6315213B1/en

Vyhledat

a little as about 0.1 weight percent of polymer. Thus, such particles could hold from ten to thousands of times their own weight. By seeding a leading edge of a violent storm, such as a hurricane, the winds cause a mix of the material wherein moisture is absorbed by the material causing a shearing effect. The shearing effect causes the polymers to absorb, lose, and reabsorb water countless times. During this exchange, the weight of the water being transferred allowing for wind shearing that assists in lessening the velocity of the wind.

The shearing forces are affected by the nature of the interactions between the particles during such collisions. When attractive forces dominate, the particles will aggregate and the dispersion may destabilize.

Example: A hurricane is seeded with approximately 30,000 lbs of a superabsorbent aqueous based polymer by use of a transport plane flying through the leading edge of the storm. Within twenty seconds the polymer will obtain over 70 percent of its absorption capacity or nearly three hundred times its weight. The winds of the storm will continue to disperse the materials causing a form of internal flocculation disrupting the feeding nature of the storm. When presented close to land, the storm will not have sufficient time to reform to its previous strength.

It is to be understood that while I have illustrated and described certain forms of my invention, it is not to be limited to the specific forms herein described. It will be apparent to those skilled in the art that various changes may be made without departing from the scope of the invention and the invention is not to be considered limited to what is shown in the drawings and described in the specification.

Patent Citations (10)

Publication number	Priority date	Publication date	Assignee	Title
US2903188A *	1956-04-02	1959-09-08	Leonard H Hutchinson	Control of tropical cyclone formation

Sem zadejte hledaný výraz

17°C Oblačno CES 3:44 04.09.2022

VÝROBCEM TAKOVÝCH POLYMERŮ JE NAPŘ. FIRMA JRM Chemical Inc.

(98) Inbox | info@radovan.org | × When The Army Owns The Weather × US6315213B1 - Method of modi ×

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following description wherein are set forth, by way of example, certain embodiments of this invention.

DETAILED DESCRIPTION OF THE INVENTION

It is to be understood that while a certain form of the invention is illustrated, it is not to be limited to the specific form or arrangement of parts herein described and shown. It will be apparent to those skilled in the art that various changes may be made without departing from the scope of the invention and the invention is not to be considered limited to what is shown and described in the specification and drawings.

The present invention relates to a method for artificially modifying weather by solidifying portions of a cloud in a storm such as a hurricane, by introducing polymers into the cloud. This method utilizes "superabsorbent" aqueous based polymers, preferably cross linked modified polyacrylamides which can be used in any application where aqueous solidification is permissible. An example of a superabsorbent aqueous based polymer is manufactured by JRM Chemical Inc. under the trademark H-series.

In the present invention, a solid form of the superabsorbent polymer, such as a powder, is introduced into the rain clouds of a storm in a suitable manner, for instance a aircraft may traverse the storm and release the polymer seeds or they may be released from a seeding flare delivered from the surface or from an aircraft. The amount of polymer needed is predetermined based upon the size and severity of the storm along with the absorption capacity of the polymer used. The wind of the storm provides the agitation that causes the polymer to bind with the water forming a gel-like substance. As a result of this method, wind based water storms can be artificially modified.

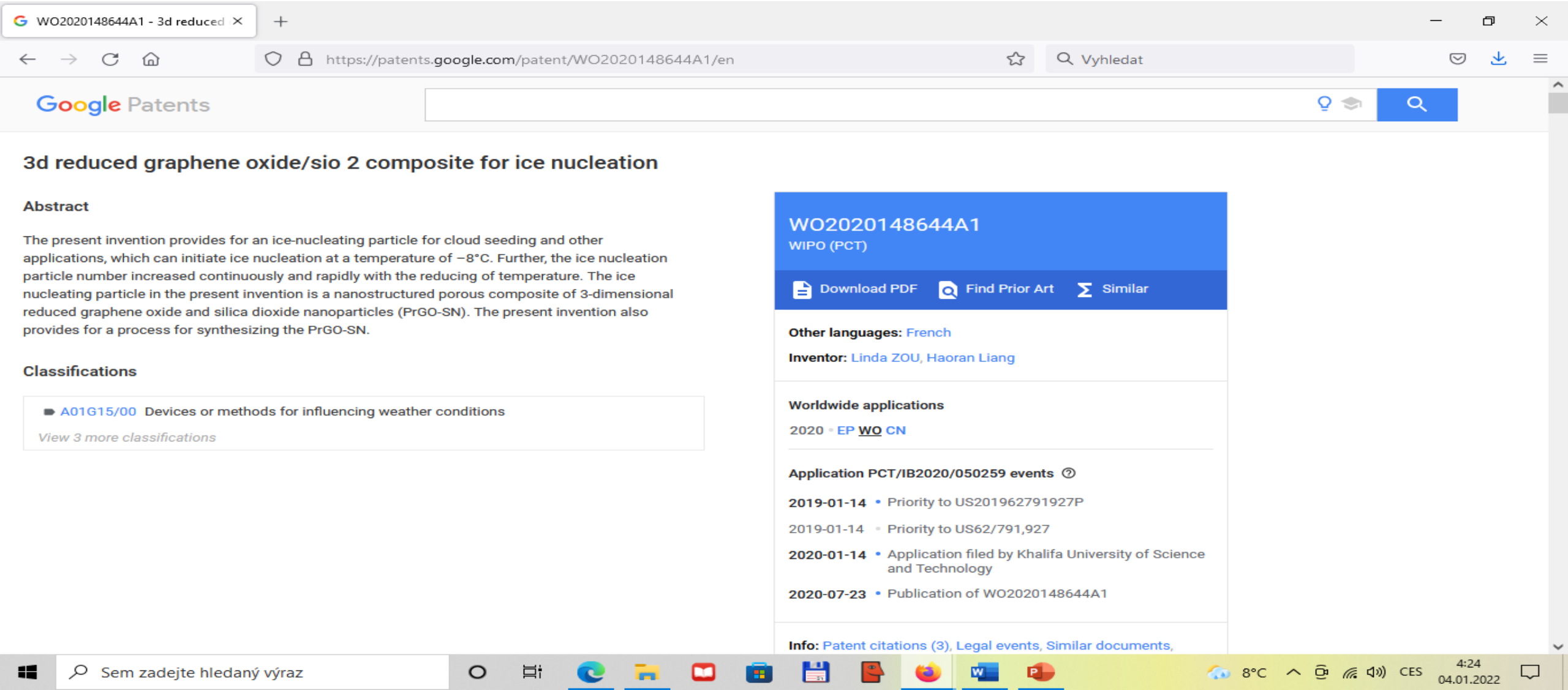
The use of a biodegradable polymer allows for safe use of the ocean wherein the high salinity of the water will expedite the degradation of the material. Various biodegradable superabsorbent polymers include carboxy-methylcellulose, alginic acid, cross-linked starches, cross-linked polyamino acids and a cross-linked

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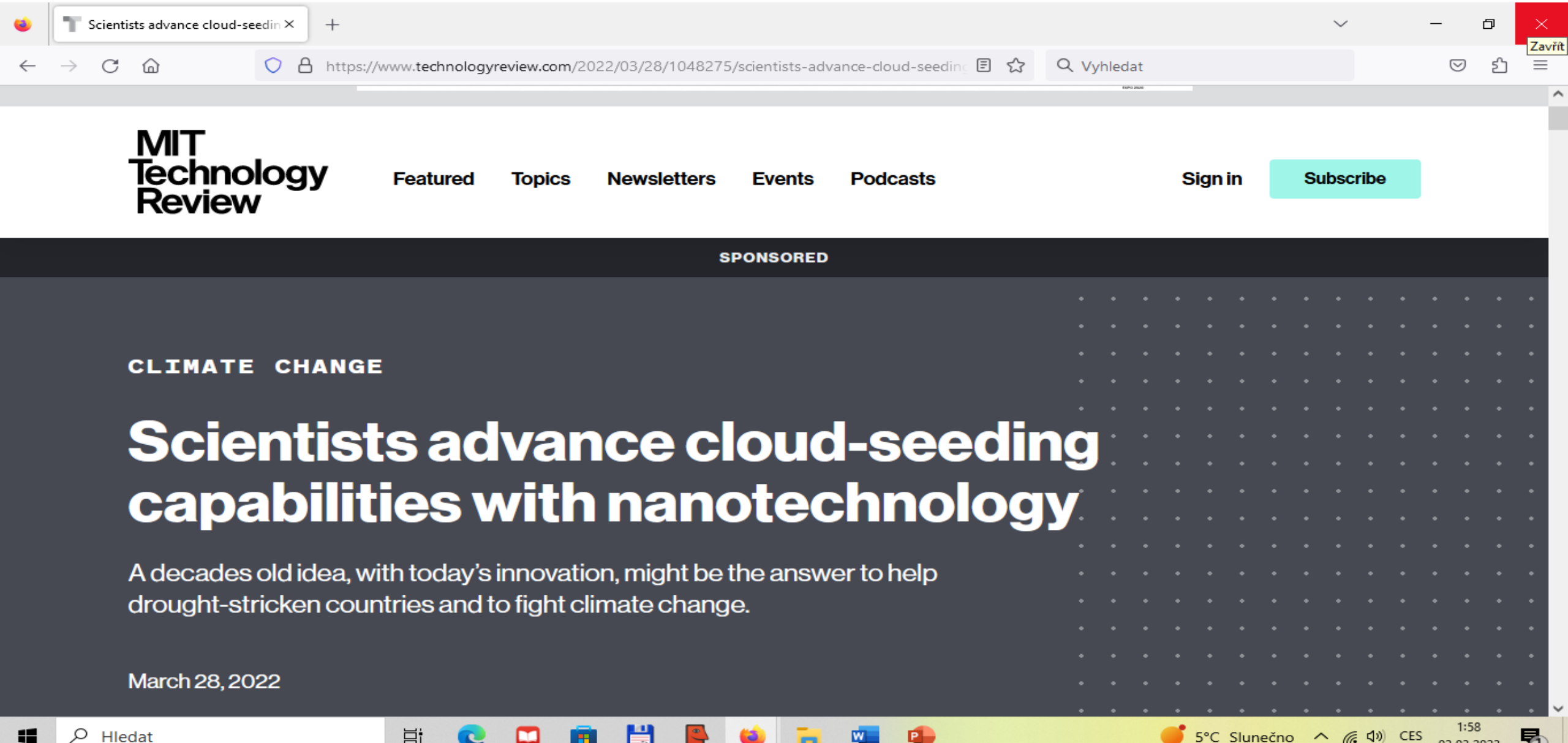
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Oxidy grafenu možné použit k formování a ochlazování mraků

Podrobný popis procesu chemické nukleace ledu a jednotlivých chemických sloučenin



OSÉVÁNÍ MRAKŮ POMOCÍ NANOTECHNOLOGIÍ TŘEBA OXIDU GRAFENU



particles. How do those compare to cloud seeding materials?

Dr. Zou: Yes. As you know, cold clouds with sub-zero temperatures are also present in the atmosphere. They are made of many super cooled water vapors, so although they are below zero, they remain as vapor. Once such cloud encounters the ice nucleation particles, they rapidly form a large number of ice crystals and bypass the liquid water phase. So they form super cool vapor and crystallize into ice particles.

Ice nucleation is important. It will initiate from the thin water layer formed on the surface of the ice nuclease, and the ice will grow rapidly at the expense of the water vapor in the cloud. We designed and fabricated a porous nanocomposite of 3D reduced graphite oxide and silica dioxide nanoparticles. This material can initiate ice nucleation followed by rapid growth starting from a temperature of minus 80 degrees. This temperature is much higher than most other known ice nucleate material. Often they require minus 25 degrees or even lower.

Laurel: This is very critical because the cloud seeding materials go very high up into the atmosphere where it is very cold, correct?

BAKTERIE SE POUŽÍVÁJÍ PRO VYTVÁŘENÍ SNĚHOVÝCH SRÁŽEK

Principles and biotechnological
https://pubmed.ncbi.nlm.nih.gov/1760850/
Vyhledat

Review > Crit Rev Biotechnol. 1991;11(3):277-95. doi: 10.3109/07388559109069185.

Principles and biotechnological applications of bacterial ice nucleation

A Margaritis [1], A S Bassi

Affiliations + expand

PMID: 1760850 DOI: 10.3109/07388559109069185

Abstract

Certain aerobic, Gram-negative bacteria, including the epiphytic plant pathogen, Pseudomonas syringae, possess a membrane protein that enables them to nucleate crystallization in supercooled water. Currently, these ice-nucleating (IN) bacteria are being used in snow making and have potential applications in the production and texturing of frozen foods, and as a replacement of silver iodide in cloud seeding. A negative aspect of these IN bacteria is frost damage to plant surfaces. Thus, of the various types of biological ice nucleators, bacteria have been the subject of most research and also appear relevant to the anticipated practical uses. The intent of this review is to explain the identification and ecology of the ice-nucleating bacteria, as well as to discuss aspects of molecular biology related to ice nucleation and consider existing and potential applications of this unique phenomenon.

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11.05.2023

VYPOUŠTĚNÍ BAKTERIÍ, KTERÉ MOHOU ZPŮSOBIT DÉŠŤ

Cultivation of the rain making b

https://www.climatecolab.org/contests/2017/rain-enhancement/c/proposal/1333949

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Contests > Rain Enhancement 2017 > Proposal: Cultivation of the rain making bacteria



Cultivation of the rain making bacteria

by MonaBahman

Description | Impact | Contributors 1 | Comments 4 | Evaluation results

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Pitch

Experiment the rain making bacteria to test the natures ability to make clouds with bacterium by cultivating it in a specific location

Description

Summary

Pseudomonas syringae is a bacteria that plays a crucial role in the formation of all forms of precipitation. But it found that this bacteria has a detrimental impact on crops causing frost damage due to its high ability to suck the water. As the host plants are disappeared or protected with pesticides reduced habitat for rain-making bacteria such as *P. syringae* could be a result of the occurrence of the rain more extreme on polarized locations. Cultivating this bacteria in a certain location it essentially needs to find its good side in constructive nature of this rain-making

PROPOSAL SUMMARY

Cultivation of the rain making bacteria

Team proposal: Only members listed on the proposal's Contributors tab will be able to edit this proposal. Members can request to join the proposal team on the Contributors tab. The proposal owner can open this proposal for anyone to edit using the Admin tab.

By: Mona Bahman

Hledat

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Chemické nukleace ledu jsou schopné i nebezpečné bakterie Escherichia coli



Bakterie jsou schopné přežít i v 10km

Bacterial Ice Nucleation Protein | Bacteria Live At 33,000 Feet

https://www.popsci.com/science/article/2013-06/bacteria-33000-feet/

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Bacteria Live At 33,000 Feet

Awesome! Now what?

BY STEPHANIE WARREN | PUBLISHED JUN 20, 2013 12:12 AM

SCIENCE





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Bakterie mohou formovat mraky, ale i přenášet choroby z jedné strany světa na druhou

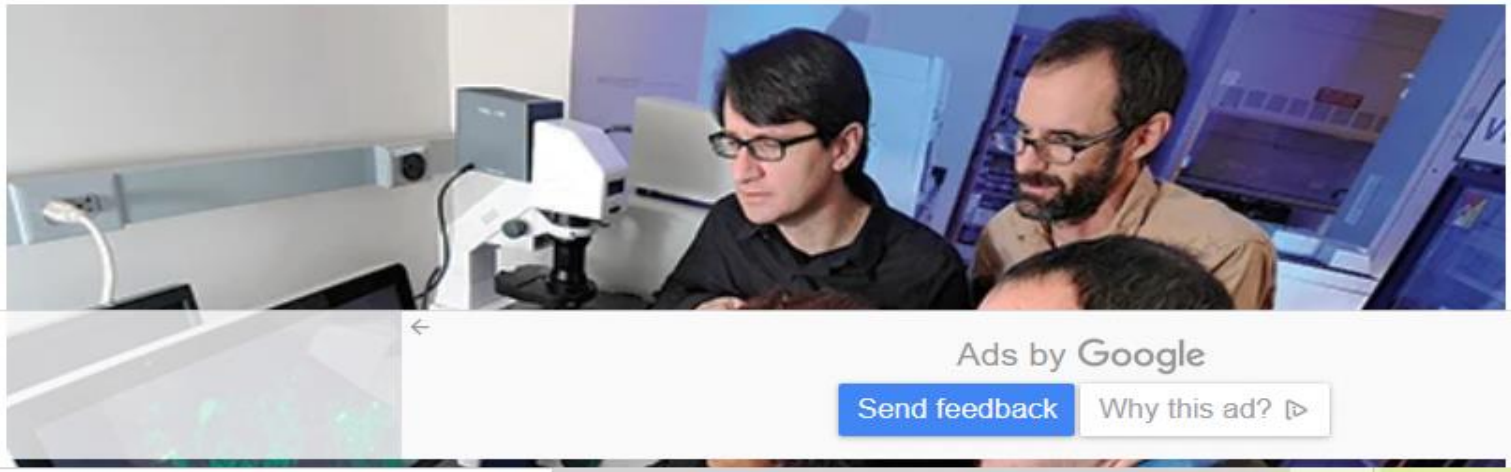
Bacterial Ice Nucleation Protein | Bacteria Live At 33,000 Feet

https://www.popsci.com/science/article/2013-06/bacteria-33000-feet/

Vyhledat

NOW WHAT?

Scientists don't yet know what the bacteria are doing up there, but they may be essential to how the atmosphere functions, says Kostas Konstantinidis, an environmental microbiologist on the Georgia Tech team. For example, they could be responsible for recycling nutrients in the atmosphere, like they do on Earth. And similar to other particles, they could influence weather patterns by helping clouds form. However, they also may be transmitting diseases from one side of the globe to the other. The researchers found E. coli in their samples (which they think hurricanes lifted from cities), and they plan to investigate whether plagues are raining down on us. If we can find out more about the role of bacteria in the atmosphere, says Ann Womack, a microbial ecologist at the University of Oregon, scientists could even fight climate change by engineering the bacteria to break down greenhouse gases into other, less harmful compounds.





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MRAKY JSOU PLNÉ BAKTERIÍ, NA KTERÉ NEFUNGUJÍ LÉKY. A TY PUTUJÍ PO SVĚTĚ

Clouds carry drug-resistant bac

https://medicalxpress.com/news/2023-04-clouds-drug-resistant-bacteria-distances.html?fb

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Clouds carry drug-resistant bacteria across distances: study





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Atmosférický vědec na Carnegie institutu na Univerzitě ve Stanfordu v USA

Ken Caldeira - Emeritus | Carnegi

carnegiescience.edu/scientist/ken-caldeira-emeritus

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KEN CALDEIRA - EMERITUS

Ken Caldeira was a Carnegie investigator from 2005 to 2020 and is world renowned for his modeling and other work on the global carbon cycle; marine biogeochemistry and chemical oceanography, including ocean acidification and the atmosphere/ocean carbon cycle; land-cover and climate change; the long-term evolution of climate and geochemical cycles; climate intervention proposals; and energy technology.

Caldeira was a lead author for the U.N.'s Intergovernmental Panel on Climate Change (IPCC) AR5 report and was coordinating lead author of the oceans chapter for the 2005 IPCC report on carbon capture and storage. He was a co-author of the 2010 US National Academy America's Climate Choices report, and participated in the UK Royal Society geoengineering panel in 2009 and ocean acidification panel in 2005. He was a lead author of the 2007 U.S. "State of the Carbon Cycle Report.

Caldeira was invited by the National Academy of Sciences Ocean Studies Board to deliver the 2007 Roger Revelle Lecture, "What Coral Reefs Are Dying to Tell Us About CO_2 and Ocean Acidification." In 2010, Caldeira was elected Fellow of the American Geophysical Union.

From the early 1990s to 2005, Caldeira was with the Energy and Environment Directorate at the Lawrence Livermore National Laboratory where he was awarded the Edward Teller Fellowship (2004), the highest award given by that laboratory. Caldeira did post-doctoral research at Penn State University and in the Energy and Environment Directorate of Lawrence Livermore National Laboratory. Caldeira received his B.A. from Rutgers College and both his M.S. and Ph.D. in



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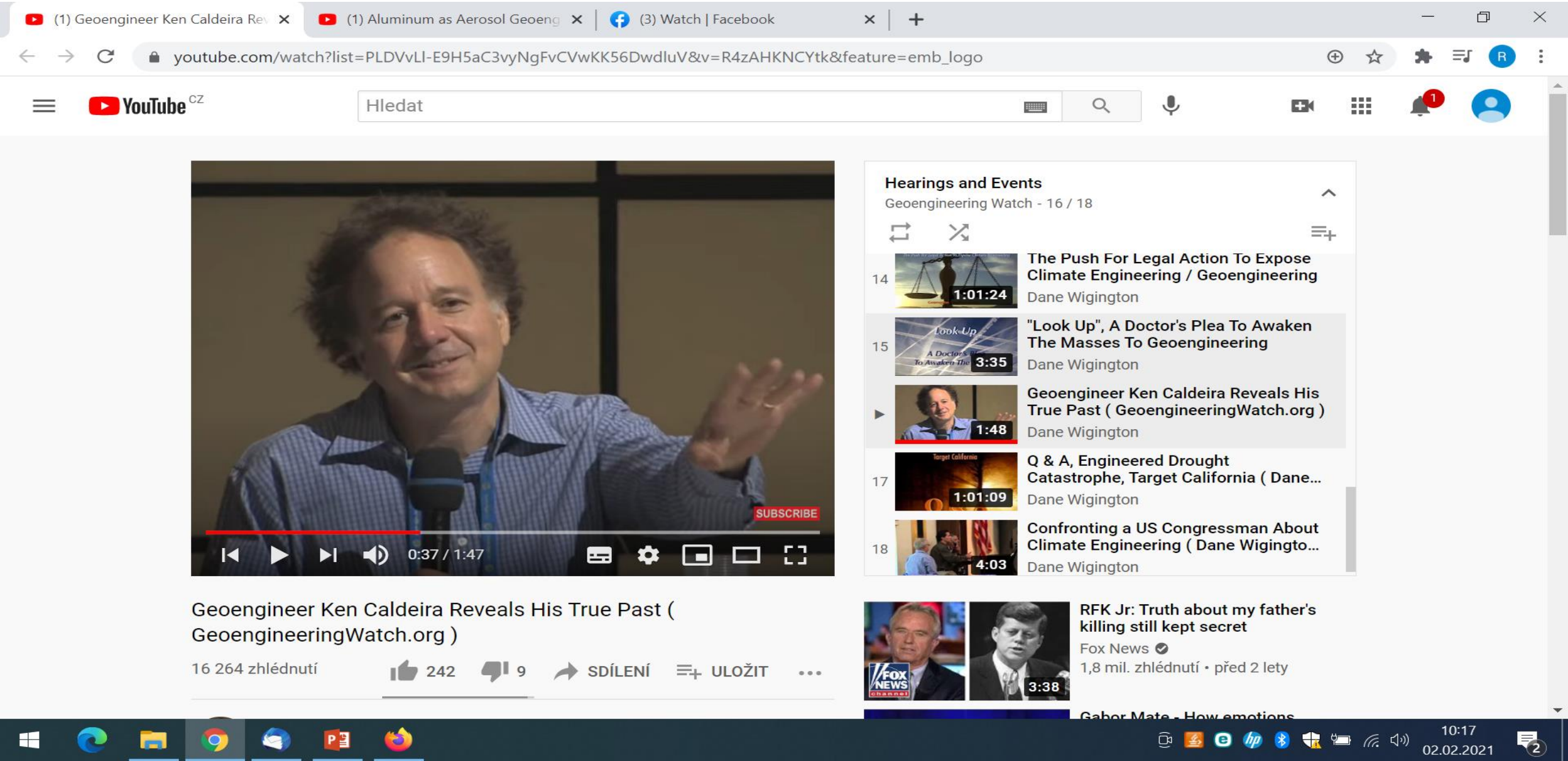
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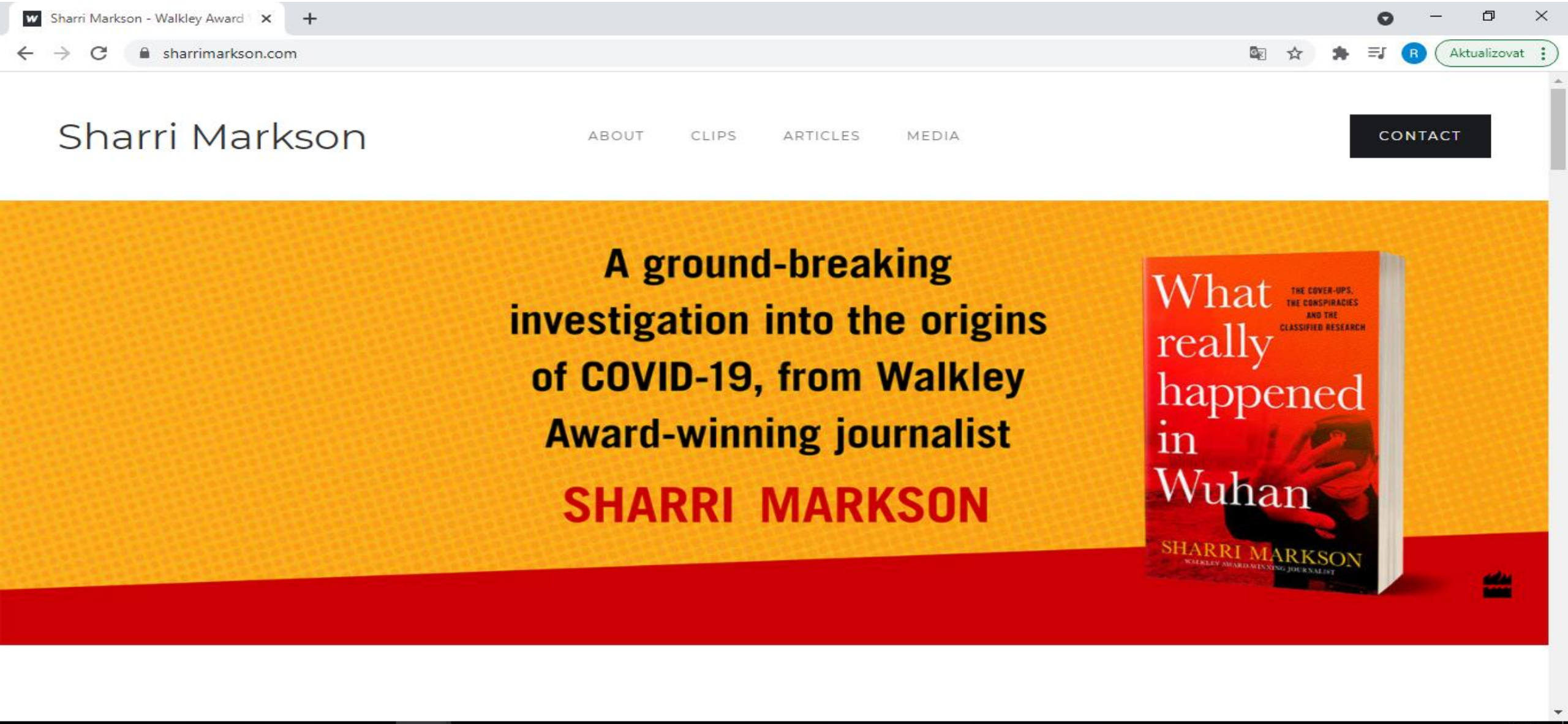
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Vědec popisuje tajné jednání s vládními agenty o možnosti využití počasí jako válečné zbraně – třeba nechat vypršet patogeny z mraků



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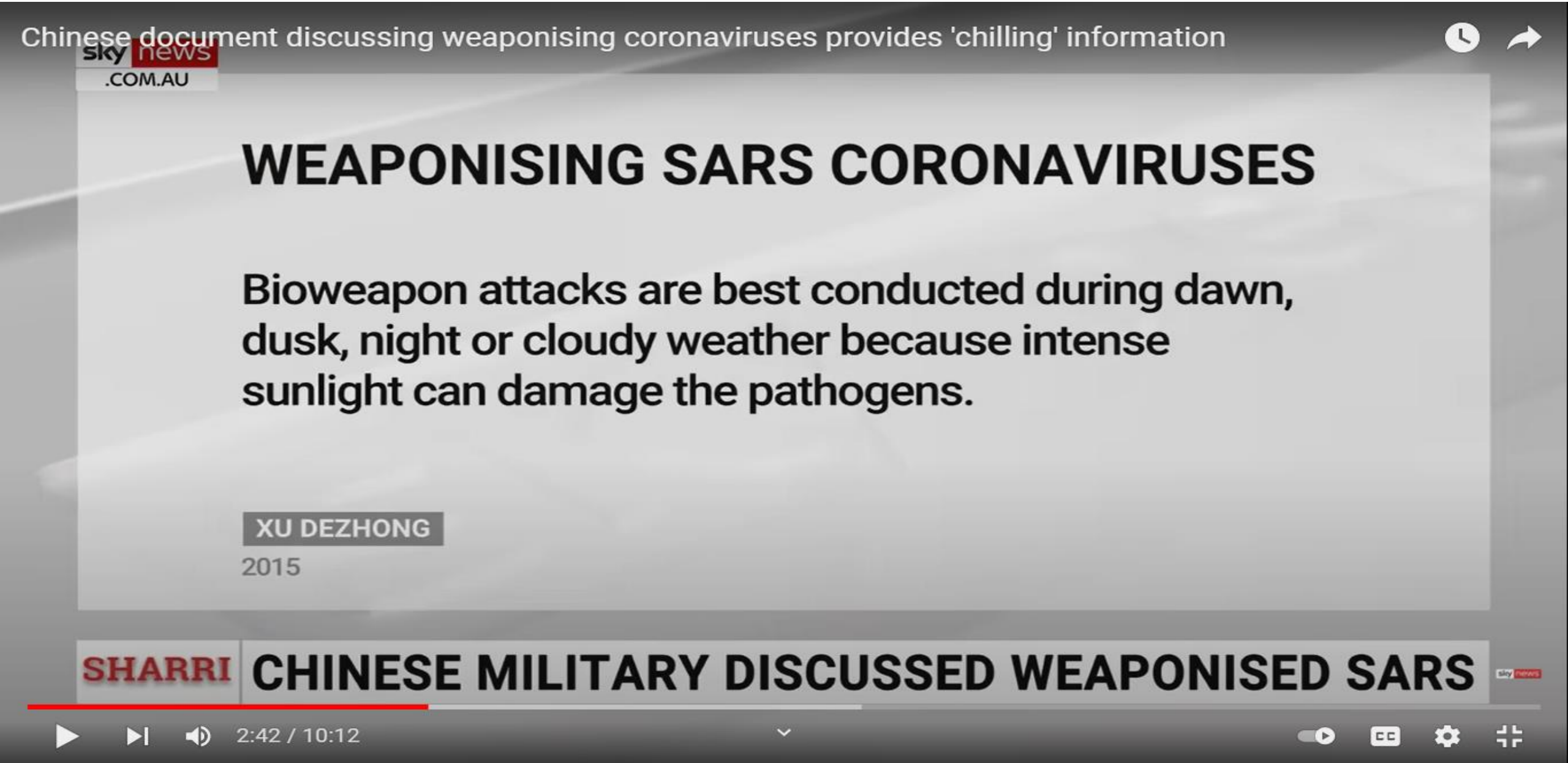
SHARRI CHINESE MILITARY DISCUSSED WEAPONISED SARS

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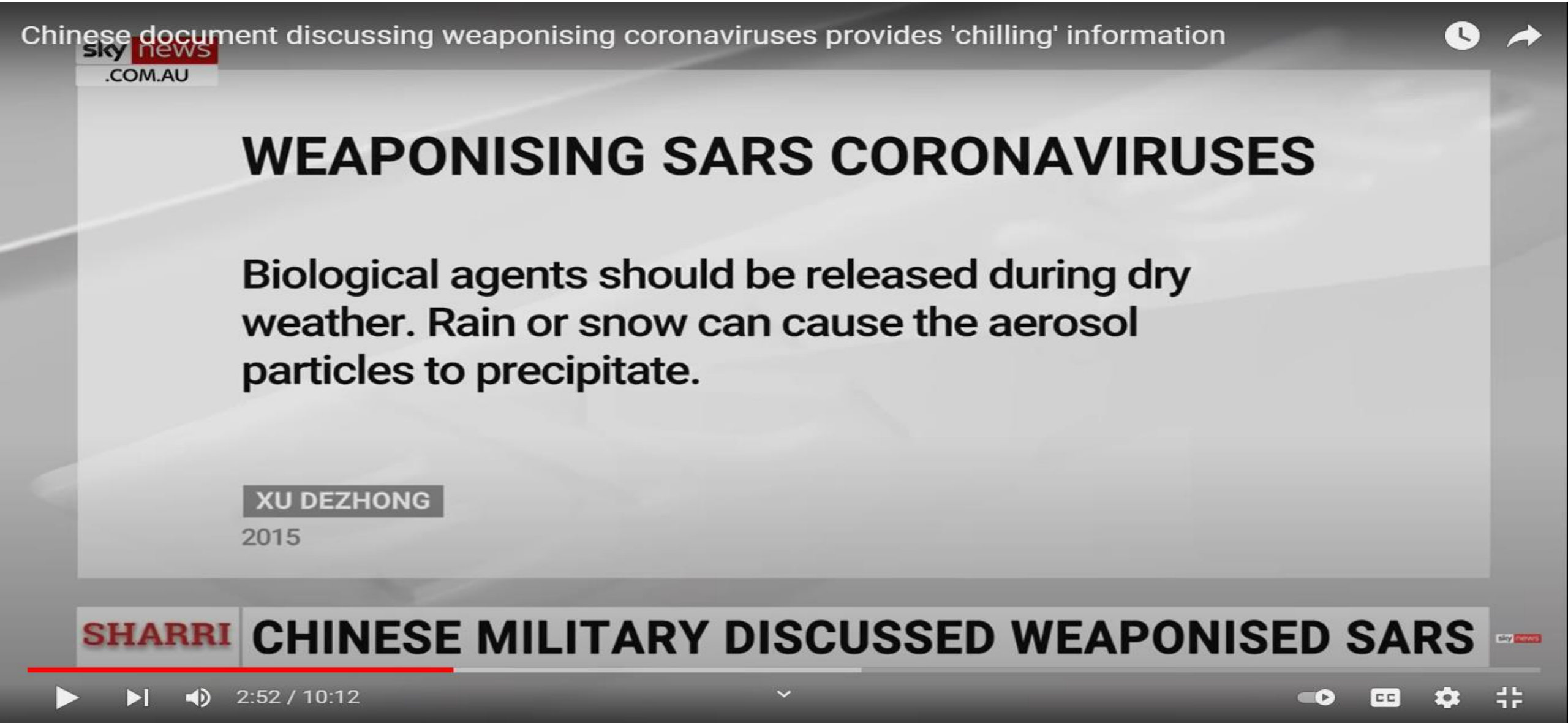
Mikroorganismy můžeme nechat zmrznout a pak vypustit jako aerosoly



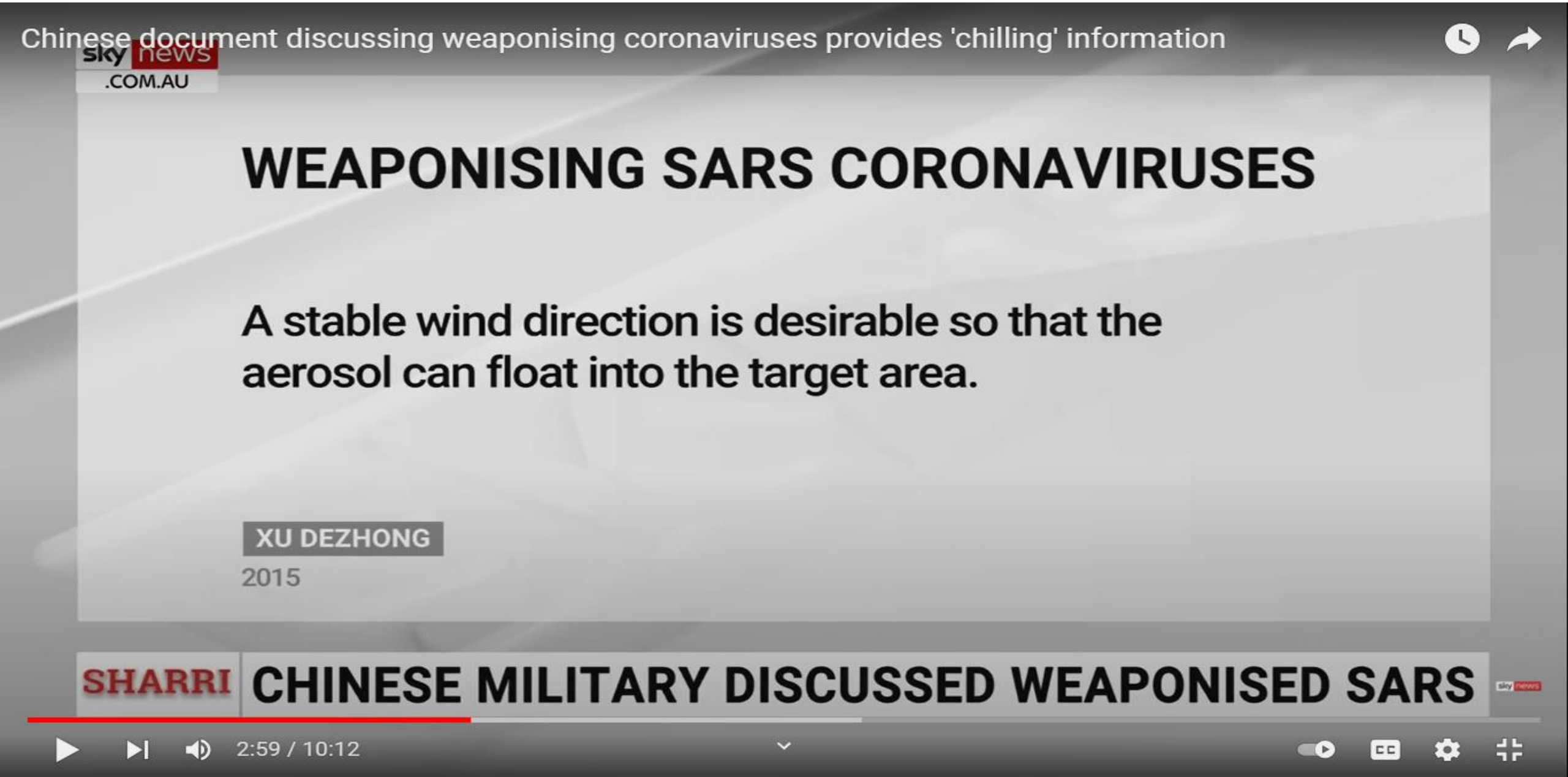
Biologické útoky je nejlépe realizovat za svítání, v noci a při zatažené obloze



Biologické agenty by se měly vypouštět během sucha. Déšť, sníh snižují jejich účinnost



Je dobré využít příznivý vítr



OPĚT ZNOVA A ZNOVA ARMÁDA PROVÁDĚLA NEBEZPEČNÉ BIOLOGICKÉ EXPERIMENY NA AMERIČANECH – 239 operací

BI US military released bacteria to t

businessinsider.com/military-government-secret-experiments-biological-chemical-weapons-2016-9

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Over and over again, the military has conducted dangerous biowarfare experiments on Americans

Kevin Loria Sep 25, 2016, 10:00 PM



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Jak britská vláda během studené války na tisících Britech testovala chemické a biologické zbraně – 750 operací

How the British Government subj

independent.co.uk/news/uk/politics/how-british-government-subjected-thousands-people-chemical-and-biological-warfare-trials-during-cold-war-...

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How the British Government subjected thousands of people to chemical and biological warfare trials during Cold War

Exclusive: Historians had previously thought that such operations were much less extensive

David Keys | @davidmkeys | Thursday 09 July 2015 00:36 | comments



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Např. vypouštění bakterií jako Serratia marcescens

BI Over and over again, the military
businessinsider.com.au/over-and-over-again-americans-have-been-subjected-to-secret-military-experiments-2015-9#/#from-minneapolis-to-st-louis-1

The people of San Francisco had no idea.

The Navy continued the tests for seven days, potentially causing at least one death. It was one of the first large-scale biological weapon trials that would be conducted under a "germ warfare testing program" that went on for 20 years, from 1949 to 1969. The goal "was to deter [the use of biological weapons] against the United States and its allies and to retaliate if deterrence failed," the government explained later. "Fundamental to the development of a deterrent strategy was the need for a thorough study and analysis of our vulnerability to overt and covert attack."

Of the 239 known tests in that program, San Francisco was notable for two reasons, according to Dr. Leonard Cole, who documented the episode in his book "Clouds of Secrecy: The Army's Germ Warfare Tests Over Populated Areas."

Cole, now the director of the Terror Medicine and Security Program at Rutgers New Jersey Medical School, tells Tech Insider that this incident was "notable: first, because it was really early in the program ... but also because of the extraordinary coincidence that took place at Stanford Hospital, beginning days after the Army's tests had taken place."

Hospital staff were so shocked at the appearance of a patient infected with a bacteria, *Serratia marcescens*, that had never been found in the hospital and was rare in the area,



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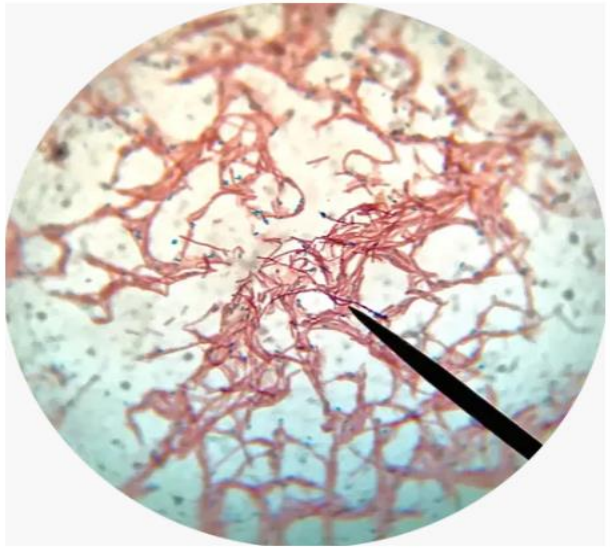
Patogen – bacillus subtillis

BI US military released bacteria to t
businessinsider.com/military-government-secret-experiments-biological-chemical-weapons-2016-9
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Hospital staff were so shocked at the appearance of a patient infected with a bacteria, *Serratia marcescens*, that had never been found in the hospital and was rare in the area, that they published an article about it in a medical journal. The patient, Edward Nevin, died after the infection spread to his heart.

S. marcescens was one of the two types of bacteria the Navy ship had sprayed over the Bay Area.

It wasn't until the 1970s that Americans, as Cole wrote in the book, "learned that for decades they had been serving as experimental animals for agencies of their government."



Bacillus subtilis, then known as Bacillus globigii, was one pathogen that was used

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Sloučeniny zinku a kadmia. Bacil globigii. Patogen Yersina pestis

How the British Government subj
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Ulf Schmidt's book, Secret Science, is published today on 9 July, by Oxford University Press.

Spreading diseases: 'Harmless' proxies

Aircraft, lorries and ships spread 4,600kg of cadmium sulphide in one decade

Zinc Cadmium Sulfide ultra-fine particles

. This inorganic compound was used by Cold War scientists in the UK and the US as a supposedly harmless proxy to simulate the behaviour, in the lower atmosphere and on the ground, of biological warfare substances. However it is still not known whether particles of ZCS that may have become embedded in people's lungs for decades could ultimately cause disease.

Bacillus globigii. This bacterium was used as a supposedly harmless proxy to simulate the behaviour, in terms of dispersal and penetration, of biological warfare aerosols. Although not considered harmful when it was used in Cold War field trials, it is now known to be capable of causing fevers, food poisoning (occasionally resulting in death), peritonitis and septicaemia .

Pasteurella pestis (now known as Yersina pestis). Clouds of this highly

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Ale také různé experimenty ve Skotsku, na Bahamách či Nigérii

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Pasteurella pestis (now known as Yersina pestis). Clouds of this highly infections bacterium were dispersed only over areas of sea – but nevertheless very near to Lewis, a Scottish Island with thousands of inhabitants. In order not to infect the islands, it appears that the scientists relied entirely on the wind not changing direction and speed. This bacterium is the one that has caused plague epidemics worldwide in the past (including those of the medieval world's Black Death).

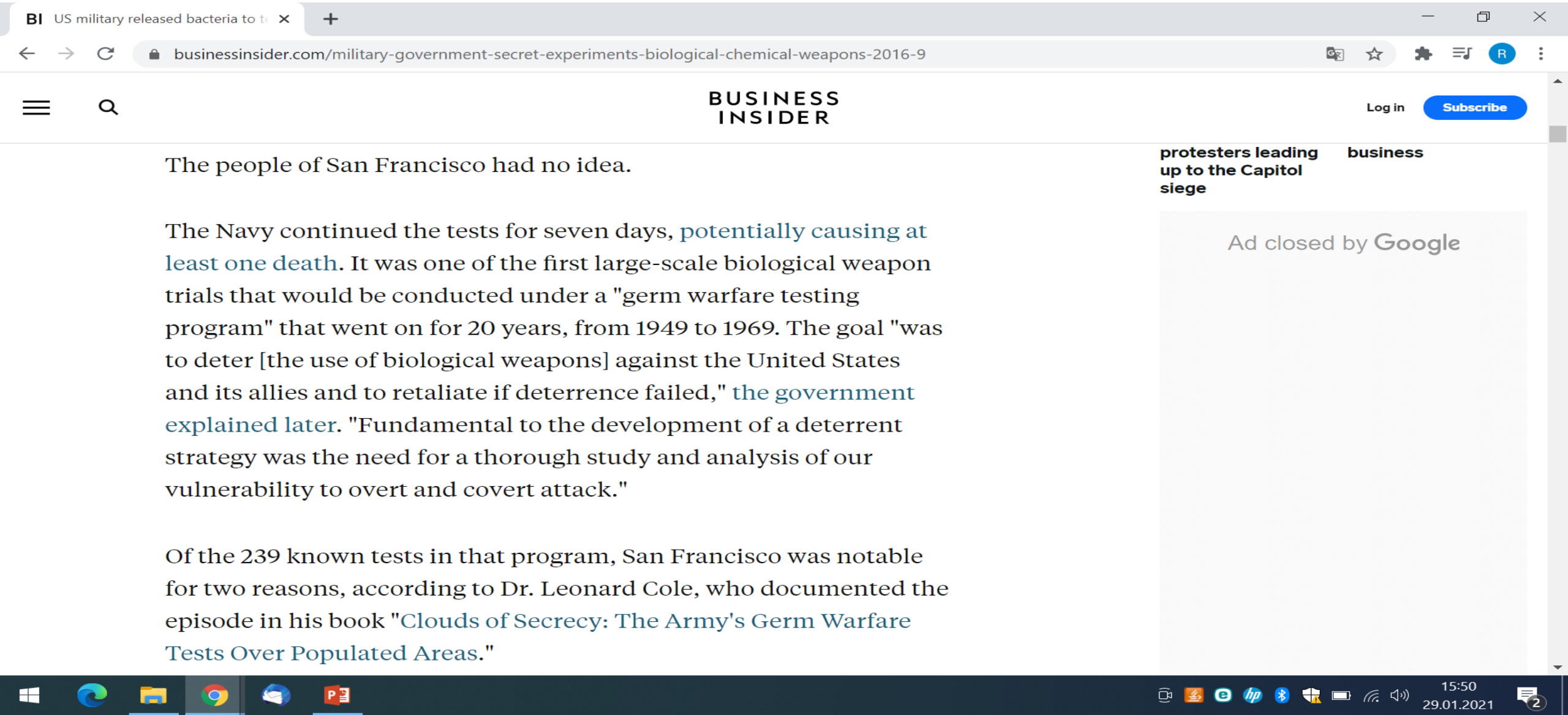
Venezuelan Equine Encephalitis. Clouds of this virus were dispersed over an area of sea close to an uninhabited island in the Bahamas. The virus debilitates or kills horses and donkeys and can also cause severe fever and even death in humans. Mosquitos spread the virus further by biting equines.

G-series nerve agents. Clouds of this chemical warfare weapon were dispersed during field trials in a small part of southern Nigeria, some miles north of the town of Warri. G-series nerve agents were first developed by the Nazis before and during World War Two. The group includes substances like sarin and attacks the human nervous system,



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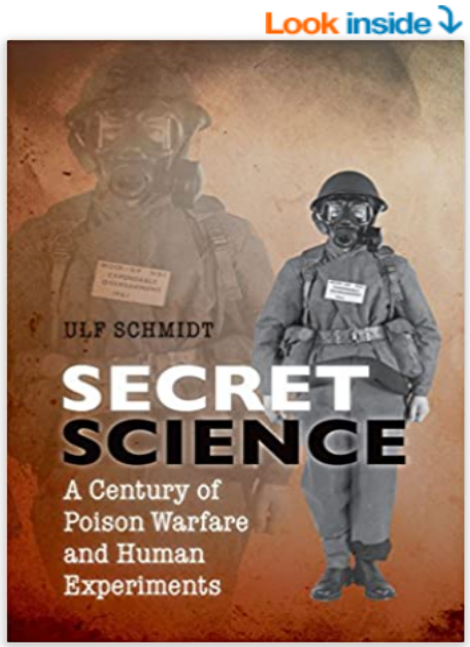
Mraky tajemství: Využívání mikroorganismů armádou a výzkumy nad zalidněným územím – kniha dr. Leonard Cole



Století využívání jedů pro válečné účely a experimentů s lidmi - kniha profesora Ulf Schmidt

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From the early 1990s, allegations that servicemen had been duped into taking part in trials with toxic agents at top-secret Allied research facilities throughout the twentieth century featured with ever greater frequency in the media. In Britain, a whole army of over 21,000 soldiers had participated in secret experiments between 1939 and 1989. Some remembered their stay as harmless, but there were many for whom the experience had been all but pleasant, sometimes

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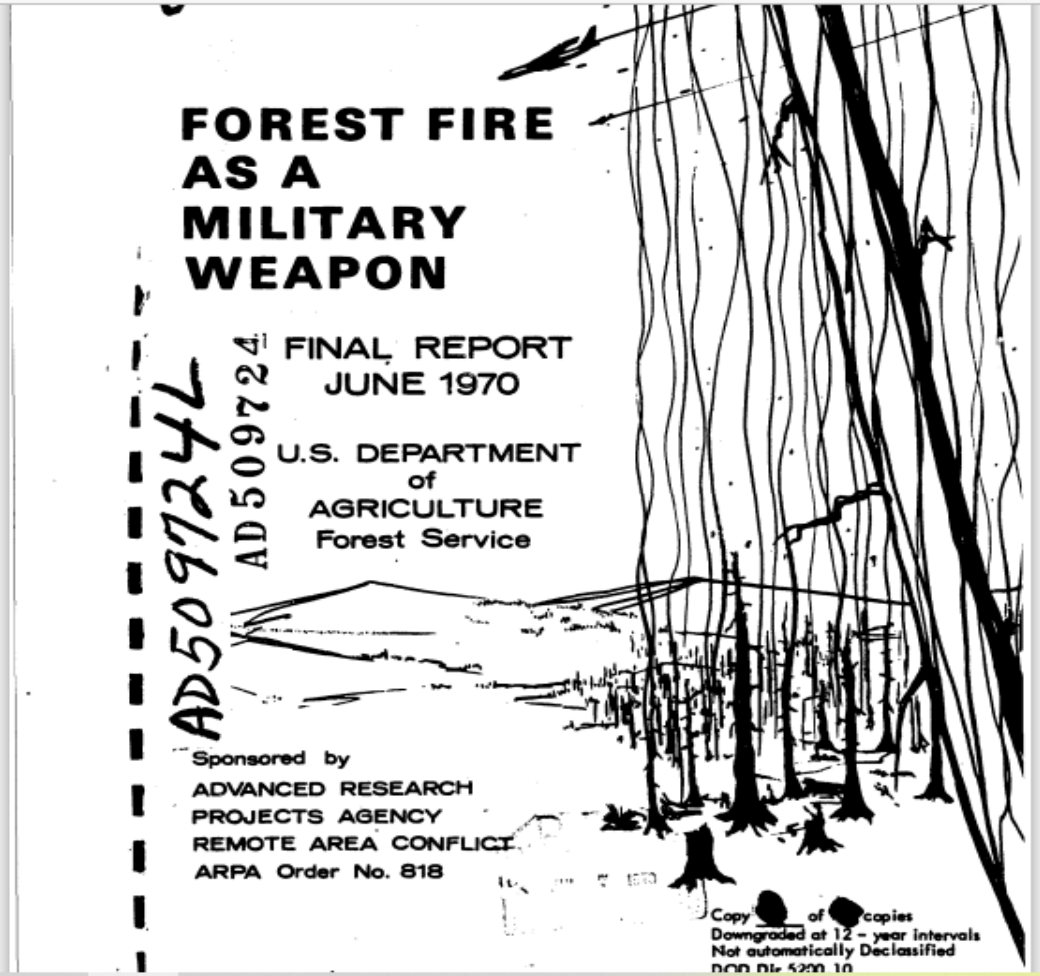
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In 1965, the Joint Chiefs of Staff requested that the Secretary of Defense initiate research to determine the feasibility of measuring the flammability characteristics of forests and jungle growth, modifying flammability so that vegetation would readily support combustion, and developing measures to destroy large areas of forest or jungle growth by fire. This research has been conducted by the Forest Service of the Department of Agriculture, under sponsorship of the Advanced Research Projects Agency through ARPA Order 818.

Primary research attention has been given to the flammability characteristics of jungle growth in tropical and monsoonal climates where forest fires seldom occur naturally. Major consideration has been given to developing operational guidelines that utilize input data readily available to military commanders under field conditions. The following conclusions are directly pertinent to the JCS request:

Forest flammability depends on the amount of dead vegetation on or near the ground surface, the moisture content of this ground level material, and the weather at the time of burning.

Forest flammability can be greatly increased by killing all shrub vegetation, selecting optimum weather conditions for burning, and igniting fires in a preselected pattern.

Removal of overhead tree canopy requires the initiation of high intensity crown fires. In many climates, crown fires are unlikely to be achieved by any environmental modification technique. However, significant military damage can be produced by forest fires of lesser intensity.

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Blue Skies Or Stormy Weather

Navy Scientist Creates Clouds, Breaks Them Up

New Technique May Make Rain

WASHINGTON, Sept. 23 (AP)— The navy said today it has created clouds and destroyed others by seeding them with ordinary carbon black.

A woman scientist who discovered the new method said experiments over southern Georgia produced a series of clouds at a cost of 18 cents a cloud.

Much experimentation must be done before the value of the new technique can be determined. It could open the way to cheap and reliable means of making rain, or of breaking up storm clouds, or of dissipating fog.

The technique was developed by Dr. Florence W. Van Straten, who livened up a desk job with the chief of naval operations by theorizing along new lines as to how rain is formed.

Earlier cloud-seeding methods using more expensive dry ice and silver iodine have been confined to super-cooled clouds. The carbon method, Dr. Van Straten said, apparently works with clouds at any temperature.



—Associated Press Wirephoto
DR. FLORENCE VAN STRATEN
Her cloud theory works

In the Georgia experiments, a navy airplane dropped carbon black in both solid and liquid-suspension form into clouds and into clear skies. Additional studies using radar-tracked balloons currently are under way over Chesapeake Bay.

Results indicate that when the carbon is sprayed or sprinkled into a clear sky it causes clouds to form, and when it is introduced into clouds it clears them up. Whether it actually produces rain in this process has not been determined definitely.

"We dropped carbon black, suspended in liquid, over a track a mile long and produced a solid line of clouds one mile long," Dr. Van Straten told a reporter.

"When we dropped 1½-pound dry packages of carbon black, we produced single clouds with each drop."

The navy team seeded seven clouds with carbon, and dissipated each of them in from 2½ to 20 minutes.

"Each cloud turned gray and then rapidly disappeared," Dr. Van Straten said.

"Aside from the cost of the airplanes, we spent less than $5 on the experiments in Georgia."

Carbon black, used in printer's ink and automobile tires, is nothing more than soot. It is available cheaply, in commercial quantities, as a by-product of the burning of natural gas.

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WEATHER MODIFICATION HISTORY

Vědkyně Dr. Florence Van Straten ve spolupráci s americkým námořnictvem sděluje výsledky experimentu. „Vypustili jsme popílek a uhlíkový prach po délce jedné míle a na stejném místě jsme vytvořili mraky stejné délky. Když jsme popílek vypustili do mraků, ty se prakticky okamžitě rozpustily. Jedná se o velmi levnou záležitost, cca 18 centů na mrak. Popílek je totiž v průmyslové výrobě odpadem.“ 1958



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Journal of Applied Meteorology
Article: pp. 355–386 | Abstract | PDF (2.52M)

Weather Modification by Carbon Dust Absorption of Solar Energy

William M. Gray, William M. Frank, Myron L. Corrin, and Charles A. Stokes
Atmospheric Science Department, Colorado State University, Ft. Collins 80523

(Manuscript received June 19, 1975, in final form December 22, 1975)
DOI: 10.1175/1520-0450(1976)015<0355:WMBCDA>2.0.CO;2

ABSTRACT

Growing global population pressures and predicted future food and energy shortages dictate that man fully explore his potential use of solar energy. This paper investigates the possibility of beneficial weather modification through artificial solar energy absorption. A variety of physical ideas related to artificial heat sources on different scales of motion are considered. Interest is concentrated on the feasibility of mesoscale (~ 100–300 km) weather modification through solar energy absorption by carbon aerosol particles of size ~0.1 μm or less. Particles of this size maximize solar energy absorption per unit mass.

It is hypothesized that significant beneficial influences can be derived through judicious exploitation of the solar absorption potential of carbon black dust. There is an especially high potential for this in the boundary layer over tropical oceans and in the formation of cirrus clouds and the consequent alteration of the tropospheric IR energy budget. If dispersed in sizes ≤0.1 μm, solar energy absorption amounts as high as ~ 2×10^{10} cal lb^{-1} per 10 h or about 4×10^{11} cal per dollar per 10 h can be obtained. This is a tremendously powerful heat source, especially if it stimulates additional radiation energy gains from extra cloud formation and/or enhanced surface evaporation. Preliminary observational and modeling information indicates that this artificial heat source can be employed on the mesoscale (~ 100–300 km) to achieve significant economic gains by means of precipitation enhancement and tropical storm destruction alleviation. It may also be possible to use carbon dust to enhance precipitation over interior land areas, alter extratropical cyclones, inhibit high daytime summer temperatures and severe weather, prevent frosts, and speed up springtime snowmelt in agriculturally marginal regions.

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Je možné také použít popílek a uhlíkový prach, abychom zvýšili srážky, změnili směr cyklónů, utlumili vysoké letní teploty a extrémní počasí, zabránili frontám a urychlili tání sněhu v okrajových zemědělských oblastech. 1975

WEATHER MODIFICATION

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Advanced Weapon/Instrumentation Technologies

John Hopkins University/Applied Physics Laboratory

by

Dr. Arnold A. Barnes, Jr.

Senior Scientist

Optical Effects Division

Phillips Laboratory

19 March 1997

Osévání mraků pomocí uhlíkového prachu – mraky, déšť, mlha

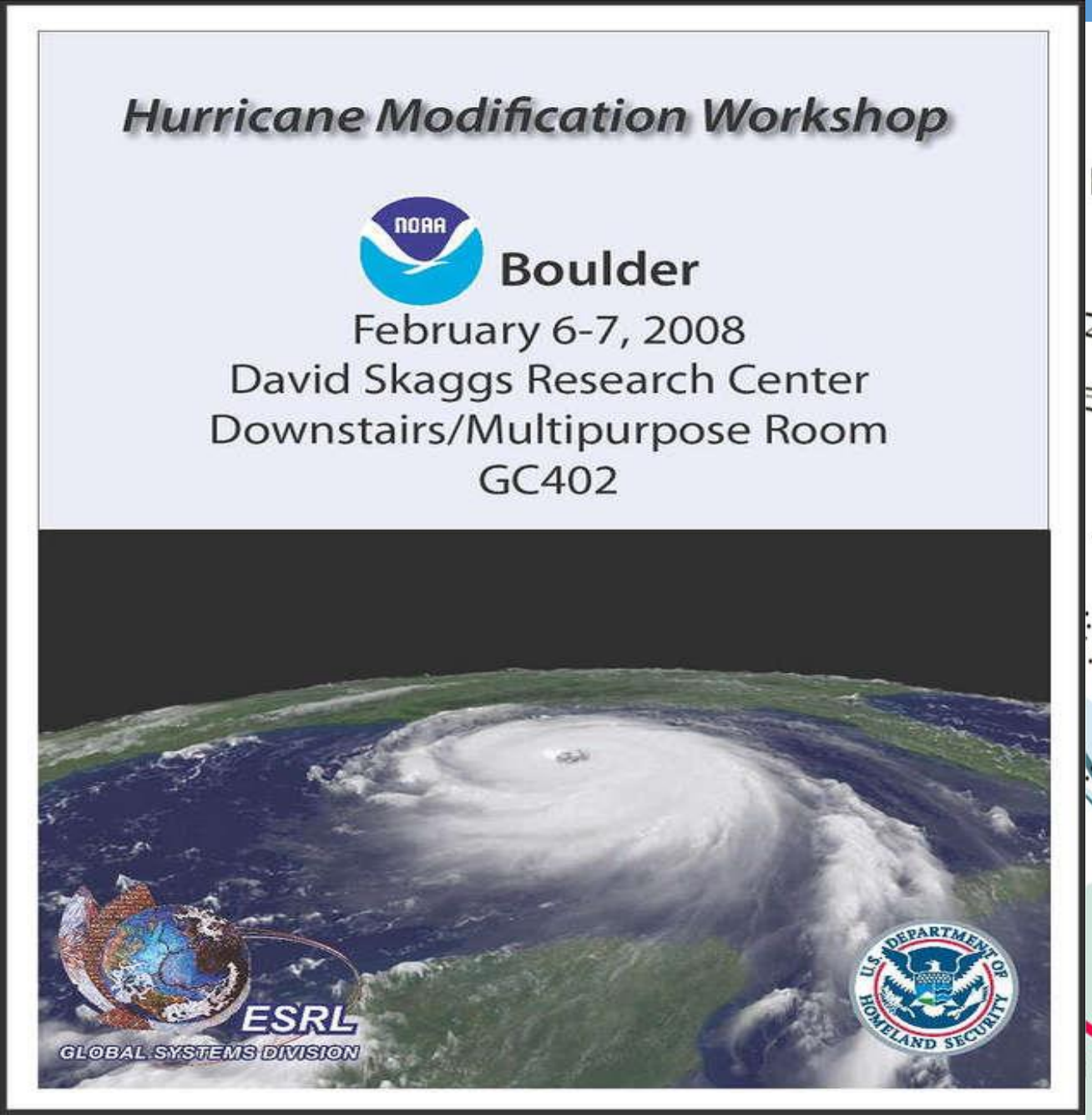
CLOUD SEEDING

- WEATHER MODIFICATION USING CARBON BLACK (1)
  - – Increase Precipitation
    - » Muddy dirt roads to decrease tractability
    - » Flood fields and small rivers
    - » Decrease troop comfort level
    - » Decrease tractability by snow or freezing rain when the temperature conditions are right
  - – Decrease Precipitation #
    - » Dry out roads/fields for improved tractability
    - » Deny fresh water to troops in semi-dry regions

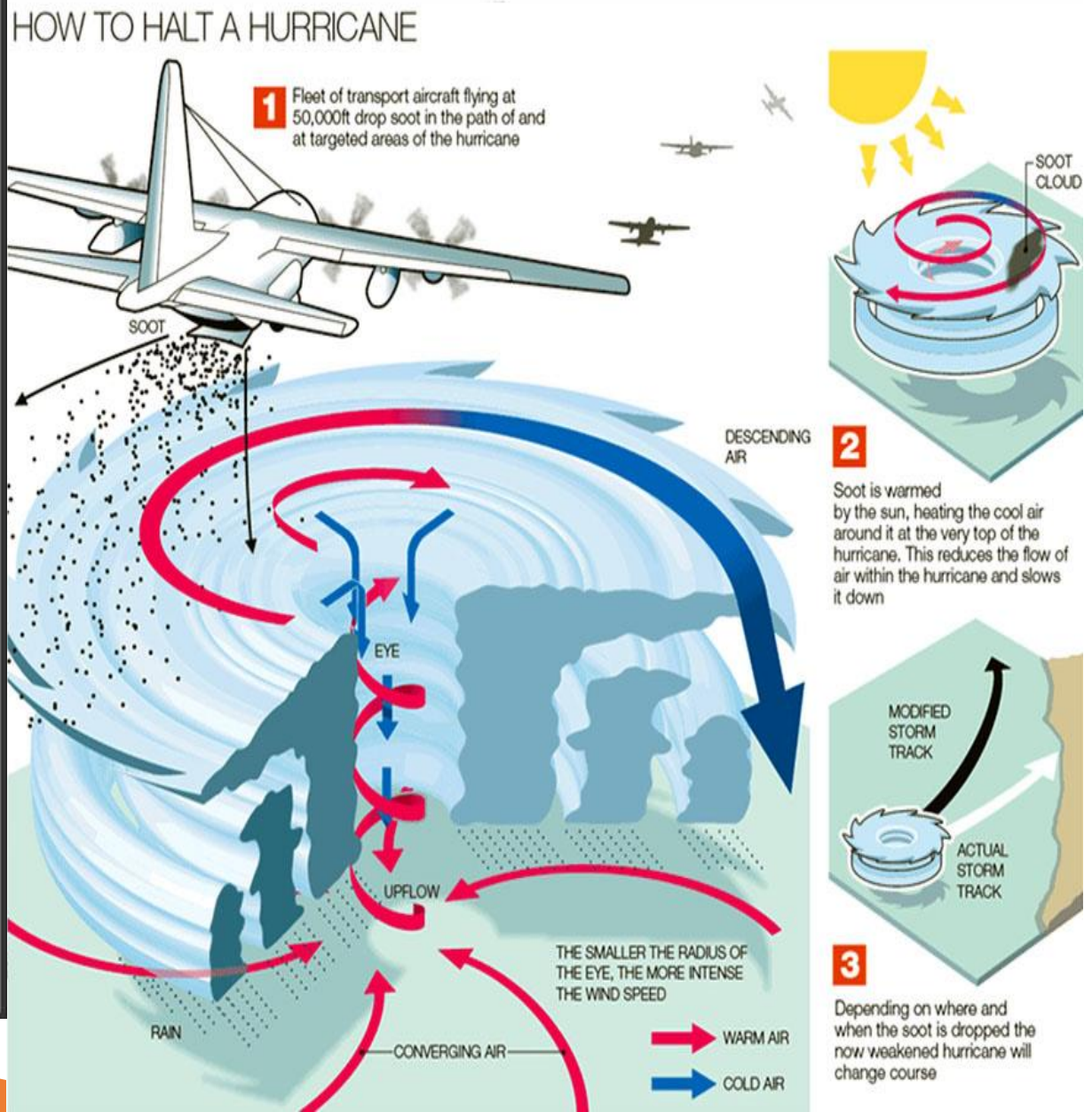
CLOUD SEEDING (cont.)

- WEATHER MODIFICATION USING CARBON BLACK (2)
  - – Increase Cirrus Cloud Cover
    - » Deny visual satellite or high altitude reconnaissance
    - » Decrease light level for night time operations
  - – Dissipate Fog
    - » Uncover targets for visual raids
    - » Provide visual inspection of damage
    - » Provide visual reconnaissance
    - » Open airfields for landing / recovery

Využití sazí a uhlíkového prachu k ovlivňování hurikánů a bouří



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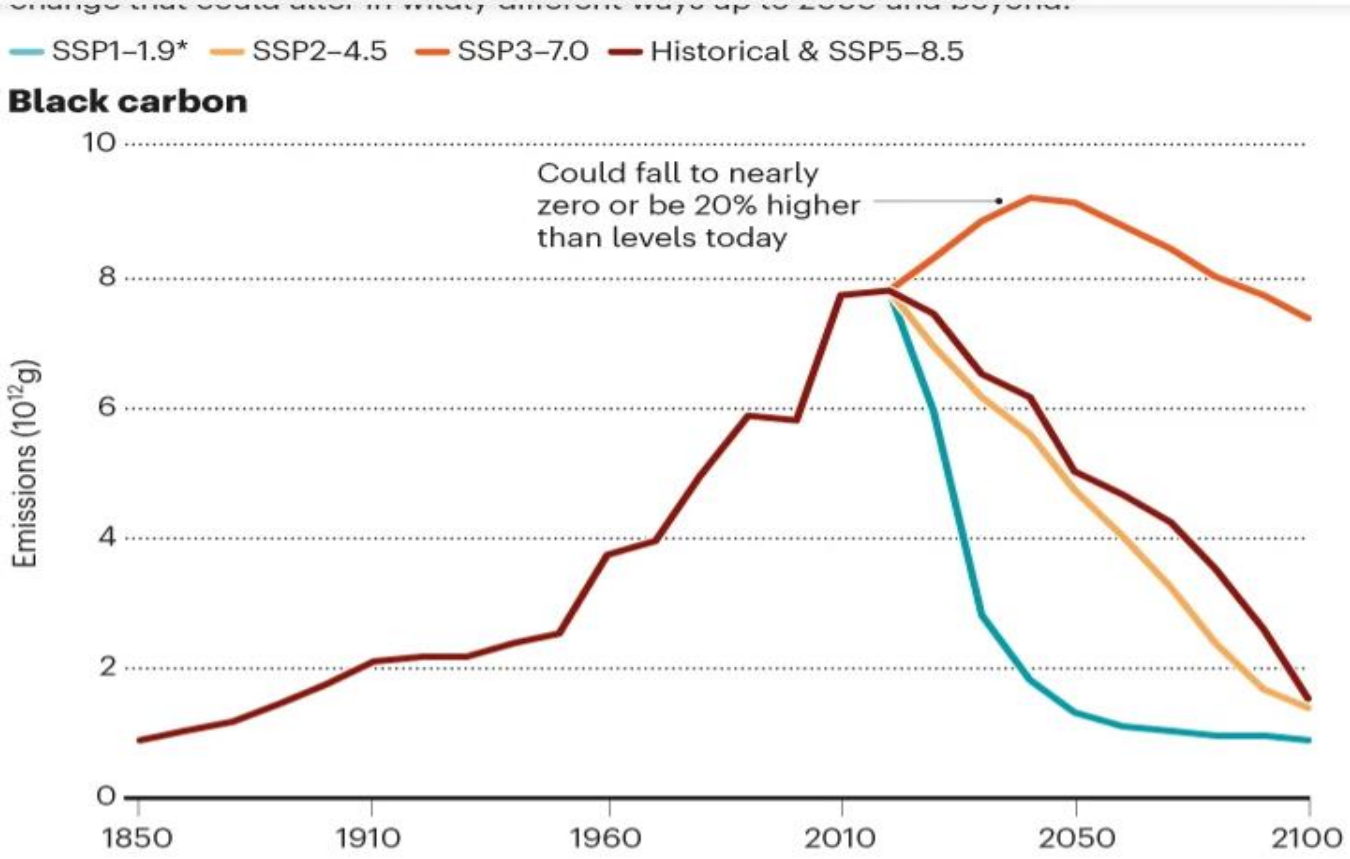
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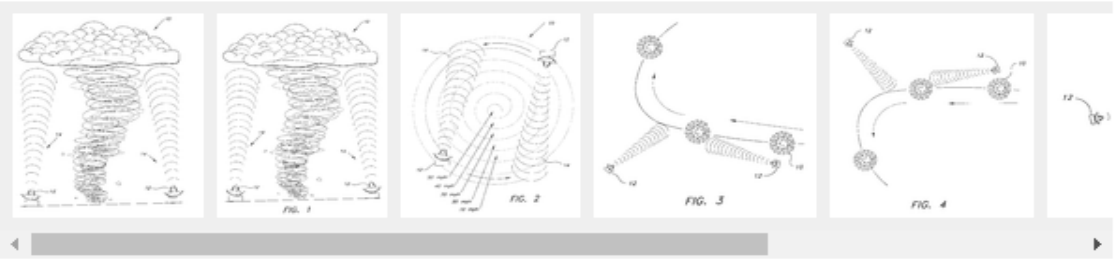
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Hurricane and tornado control device

Abstract

A method is disclosed for affecting the formation and/or direction of a low atmospheric weather system. Audio generators are positioned to project sound waves toward a peripheral area of a weather system. The sound waves are generated at a frequency to affect the formation of the weather system in a manner to disrupt, enhance or direct the formation. The sound waves can also be projected in a manner to cause the system to produce rain.

Images (7)



Classifications

A01G15/00 Devices or methods for influencing weather conditions

US20030085296A1
United States

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Inventor: Andrew Waxmanski

Worldwide applications

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Application US09/985,284 events

2001-11-02 • Application filed by Andrew Waxmanski

2001-11-02 • Priority to US09/985,284

2003-05-08 • Publication of US20030085296A1

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External links: USPTO, USPTO PatentCenter, USPTO

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(19) **United States**

(12) **Patent Application Publication**

Waxmanski

(10) **Pub. No.: US 2003/0085296 A1**

(43) **Pub. Date: May 8, 2003**

(54) **HURRICANE AND TORNADO CONTROL DEVICE**

(76) Inventor: **Andrew Waxmanski**, Chipley, FL (US)

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Richard C. Litman
LITMAN LAW OFFICES, LTD.
P.O. Box 15035
Arlington, VA 22215 (US)

(21) Appl. No.: **09/985,284**

(22) Filed: **Nov. 2, 2001**

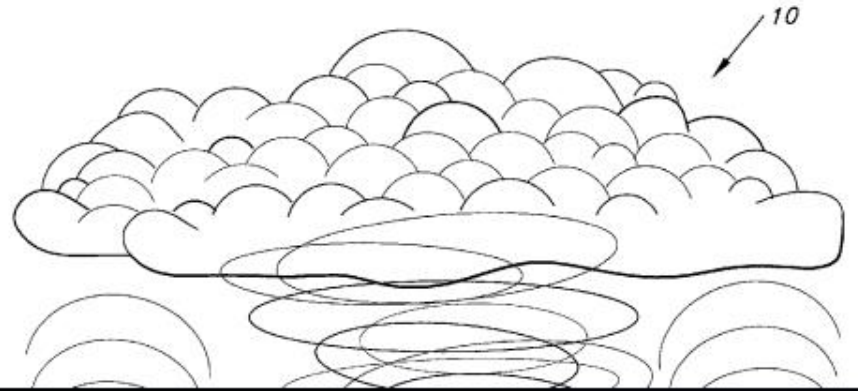
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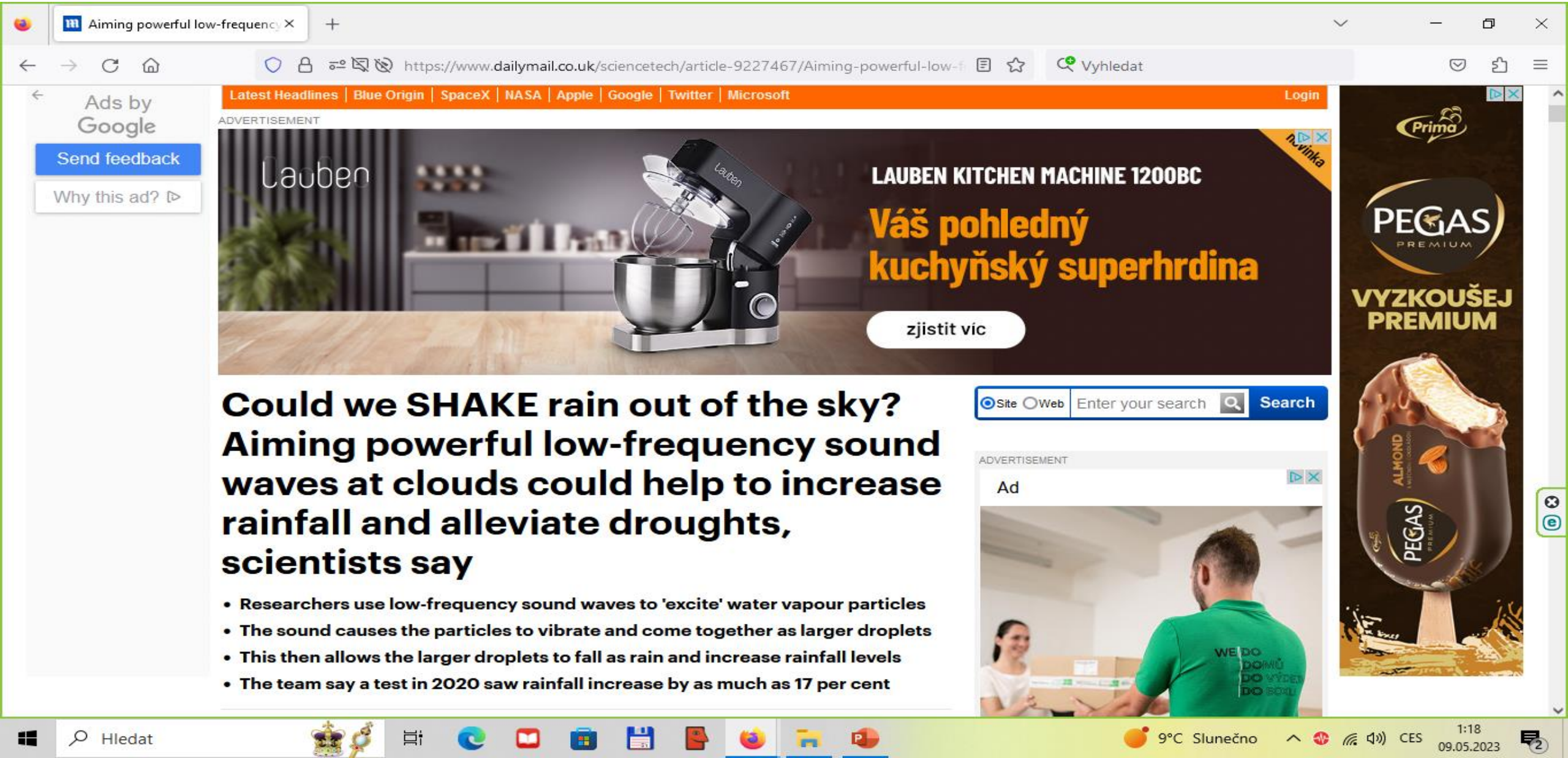
(57) **ABSTRACT**

A method is disclosed for affecting the formation and/or direction of a low atmospheric weather system. Audio generators are positioned to project sound waves toward a peripheral area of a weather system. The sound waves are generated at a frequency to affect the formation of the weather system in a manner to disrupt, enhance or direct the formation. The sound waves can also be projected in a manner to cause the system to produce rain.



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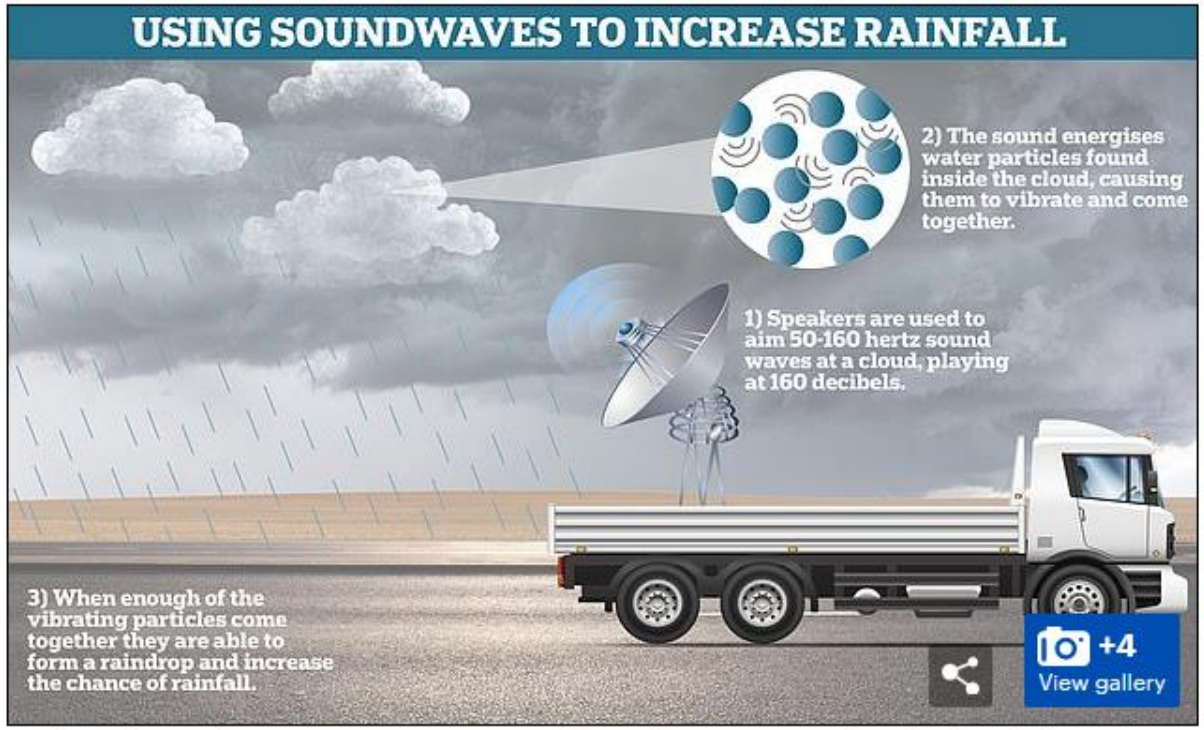
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after they fired their device - which is about as loud as a running jet engine.

Wang and colleagues believe that this technology could bring new and greater levels of rainfall to areas of the world that suffer from drought.



Study author Professor Wang Guangqian said sound waves 'excite the cloud' and vibrate it - this leads to a greater probability of water particles colliding and coming together - creating larger droplets and a greater chance of rainfall

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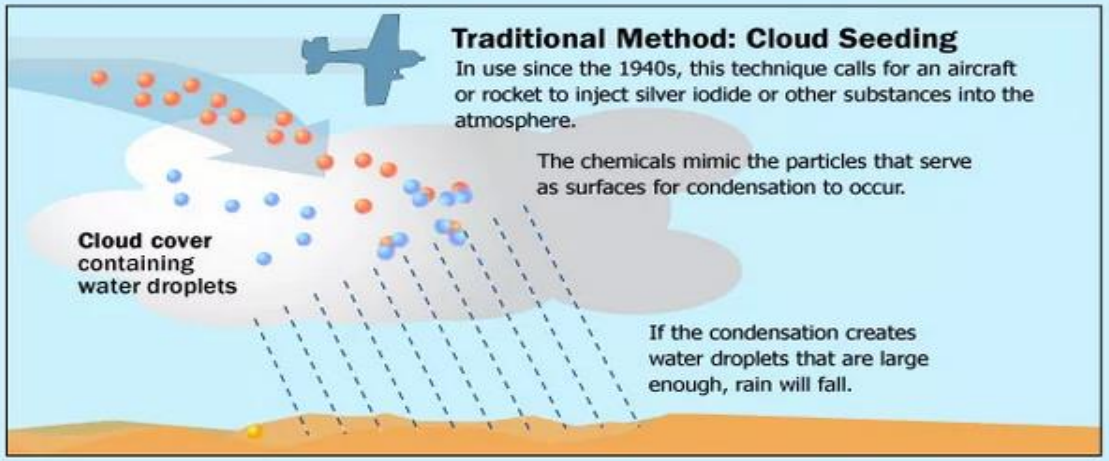
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Science Plays Rain God: Seeding and Ions

An ambitious project attempts to ionize the lower atmosphere and create conditions where raindrops can easily form. Here is a look at old and new techniques of trying to induce rainfall:



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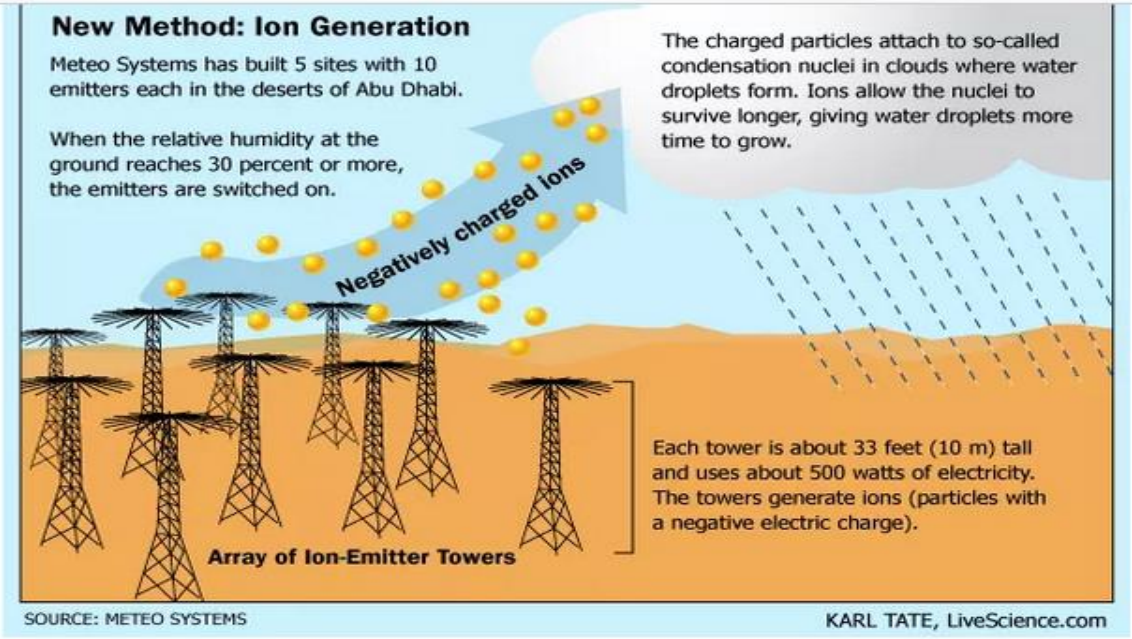
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Graphic shows new ion generation method for rainmaking and how it compares to cloud seeding. (Image credit: Karl Tate)

Fifty-two unanticipated rain showers in a Middle Eastern desert supposedly occurred because of ionizing devices installed in Abu Dhabi as part of a weather-modification project, a company is claiming.

The still-unproven rainmaking effort comes courtesy of Meteo Systems of Switzerland. The company and some of the researchers involved in the project are hoping to gather enough experimental proof to overcome widespread

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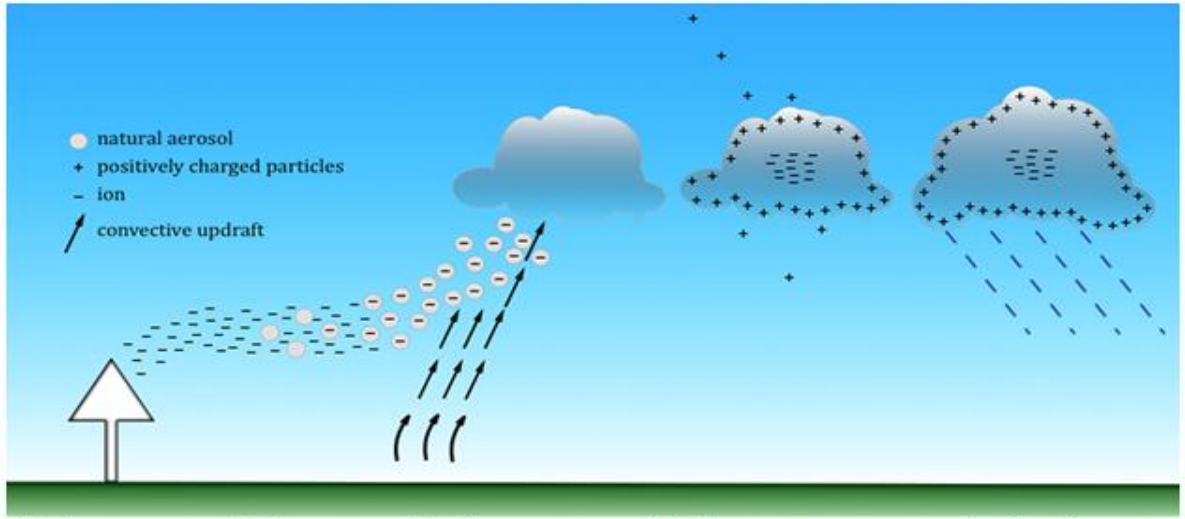
ŠVÝCARSKÁ FIRMA METEOSYSTEMS V SAE

WeatherTec™ is different - Mete

sindicatum.com/meteosystems/weathertec-overview/weathertec-is-different/

Vyhledat

WeatherTec™ is different



Step1: WT Emitter-system ionisation	Step 2: aerosol charging	Step 3: charged aerosols advected into cloud by convective updraft (τ~20 min)	Step 4: the - ve charge aerosols in the cloud induce +ve charge at the cloud boundary	Steps 5 and 6: electric charge influences ice particle formation and enhances rainfall (t~30mins - 2hrs)

- WeatherTec™ charges naturally occuring aerosol particles (dust etc.)
- These aerosols travel up to the clouds where they influence cloud microphysics which may lead to increased rainfall

WeatherTec Overview

- An alternative solution?
- Weather Modification 101
- Traditional cloud seeding vs. WeatherTec™
- WeatherTec™ is different
- Benefits of WeatherTec™
- ...and some challenges to be overcome
- Appropriate site selection is critical

Sem zadejte hledaný výraz

Blíží se déšť

CES

4:27

26.08.2022



Photo Gallery - Meteo Systems

sindicatum.com/meteosystems/photo-gallery/#!prettyPhoto[pp_gal]/0/

Vyhledat



Sem zadejte hledaný výraz

Blíží se déšť

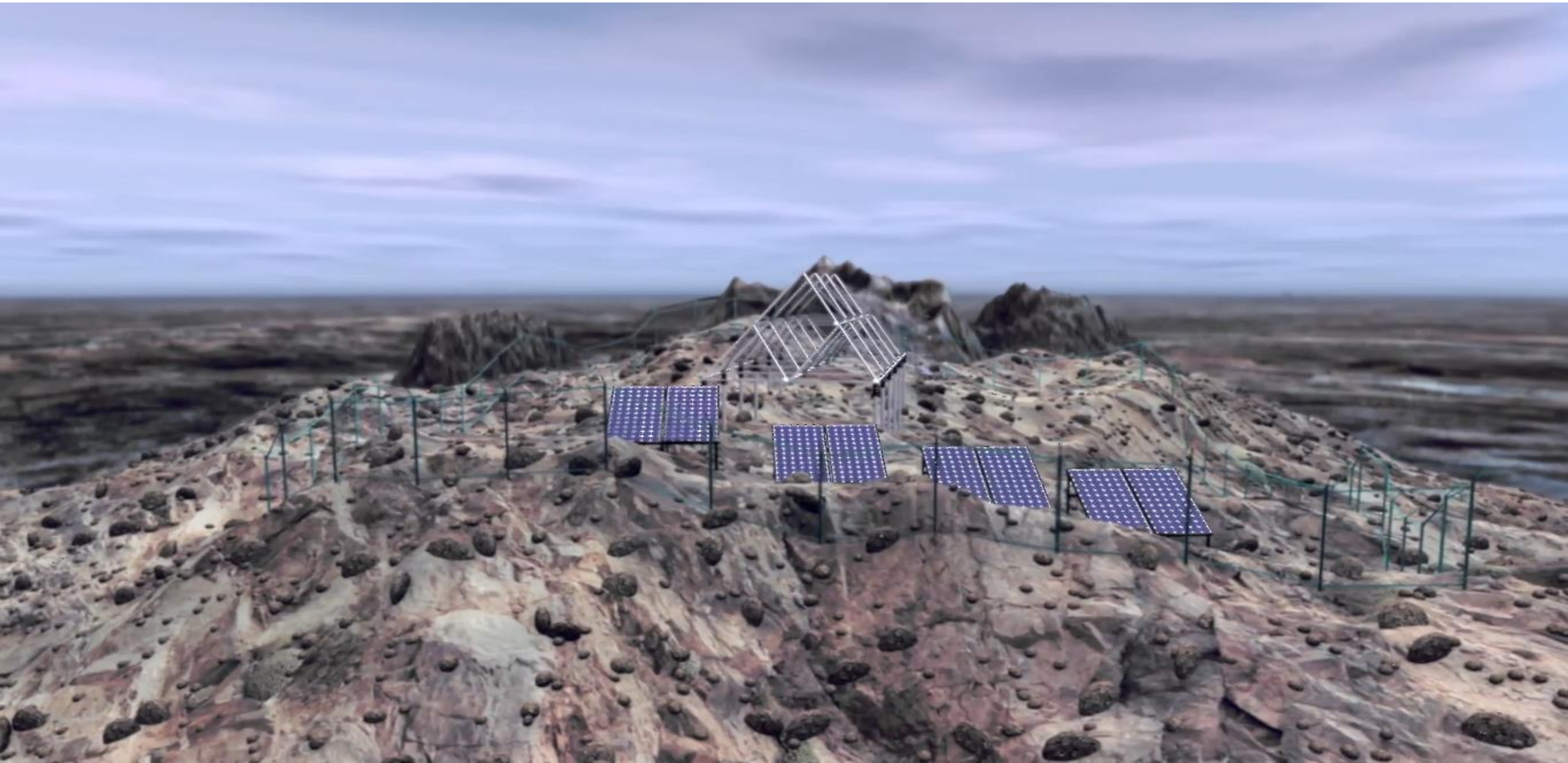
CES

4:28

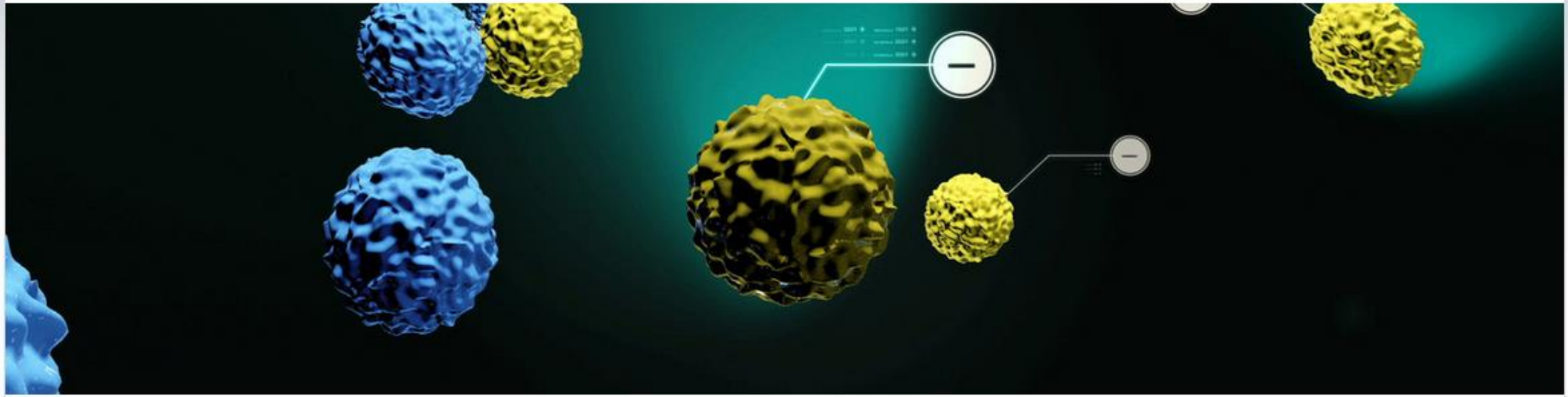
26.08.2022



FIRMA ATLANT TECHNOLOGY V AUSTRÁLII



Australian Rain Technologies



ATLANT™ Technology

At any time, the atmosphere contains about 10 times more fresh water than all the combined fresh water rivers on the surface of the earth. A small fraction of that atmospheric water which condenses as clouds falls as rain, and a far smaller fraction falls on the earth's landmasses where it can augment increasingly deficient water supplies.

➤ ATLANT™ Technology
➤ How ATLANT™ works
➤ Areas of application
➤ Benefits







Zavřít zobrazení na celou obrazovku

0:04 / 0:06


Zavřít zobrazení na celou obrazovku
0:03 / 0:06


Zavřít zobrazení na celou obrazovku
0:02 / 0:06

OVLIVŇOVÁNÍ POČASÍ S VYUŽITÍM TECHNOLOGIÍ MANIPULUJÍCÍ IONOSFÉRU

CGCT_Profile_V.3.pdf

climateglobal.net/CGCT_Profile_V.3.pdf

Vyhledat

1 z 5

Automatická velikost

Climate
Global Control Trading

Climate Global Control Trading L.L.C.
Company Profile

A Brief Summary about The Company

The company Climate Global Control Trading L.L.C. (CGCT) http://www.climateglobal.net/ is a supplier of integrated technology solutions, specializing in project design, planning and implementation of ionospheric Technology for Weather Management.

CGCT is the world's leading Supplier of water resources of atmospheric origin on the global market of water resources and other various weather services. CGCT has implemented its services of successful tests in the use of the unique Innovative Technology for Weather Management in the

Sem zadejte hledaný výraz

Blíží se déšť

CES

4:52
26.08.2022

MOHOU SMĚROVAT ATMOSFÉRICKÉ ŘEKY Z INDICKÉHO A TICHÉHO OCEÁNU

CGCT_Profile_V.3.pdf

climateglobal.net/CGCT_Profile_V.3.pdf

Vyhledat

1 z 5

Automatická velikost

A Brief Summary about The Technology

Technological solutions of CGCT allows us to carry out seasonal regulation of atmospheric processes in the defined areas by our clients by transferring wetted air masses from over-wetted areas of the Indian and Pacific oceans to arid regions and to ensure permanent and long-term presence of additional moisture in arid regions and maintain a given climate regime in certain areas of the country for a certain time.

The Innovative Technology for Weather Management is safe and ECO friendly, the technology does not use any chemical components and is reversible. With our technology it allows us to completely

Climate Global Control L.L.C P.O. Box: 181210, Dubai, U.A.E Phone: +971 56 259 8220 Email: info@ climateglobal.net; Web: www.climateglobal.net

Sem zadejte hledaný výraz

Blíží se déšť

CES

4:53

26.08.2022

AŽ NA 3 MILIÓNECH KM²

CGCT_Profile_V.3.pdf

climateglobal.net/CGCT_Profile_V.3.pdf

Vyhledat

2 z 5

Automatická velikost

The uniqueness of the technology for weather management allows the delivery of millions of barrels of water over vast distances and atmospheric precipitation in huge areas determined by the Customer, which allows a real solution of water security for countries suffering from water scarcity. Water of atmospheric origin has colossal advantages over the conventional methods of supplying fresh water and has a positive impact on the agricultural sector, energy sector and the entire economy of the any country.

Features and Benefits of Ionospheric Climate Technology

1. CGCT has invested heavily in Research and Development for the past 50 years this has made it possible to create a process control system including control of atmospheric processes.
2. Collection and processing of data on atmospheric processes, formation of control algorithms, and control of execution is carried out in real time and over large areas.
3. Managing weather processes in an area of 100,000 square kilometers up to 3 million square kilometers. We are also able to manage weather processes within commercial projects (minimum of 2,000 square kilometers).
4. Technology "Controlled climate change" is fully reversible

Sem zadejte hledaný výraz

Blíží se déšť

CES

4:54

26.08.2022

POUŽÍVÁME ELEKTROMAGNETICKÉ VLNY O RŮZNÝCH FREKVENCÍCH

CGCT_Profile_V.3.pdf
climateglobal.net/CGCT_Profile_V.3.pdf
Vyhledat
3 z 5
Automatická velikost

How It Works

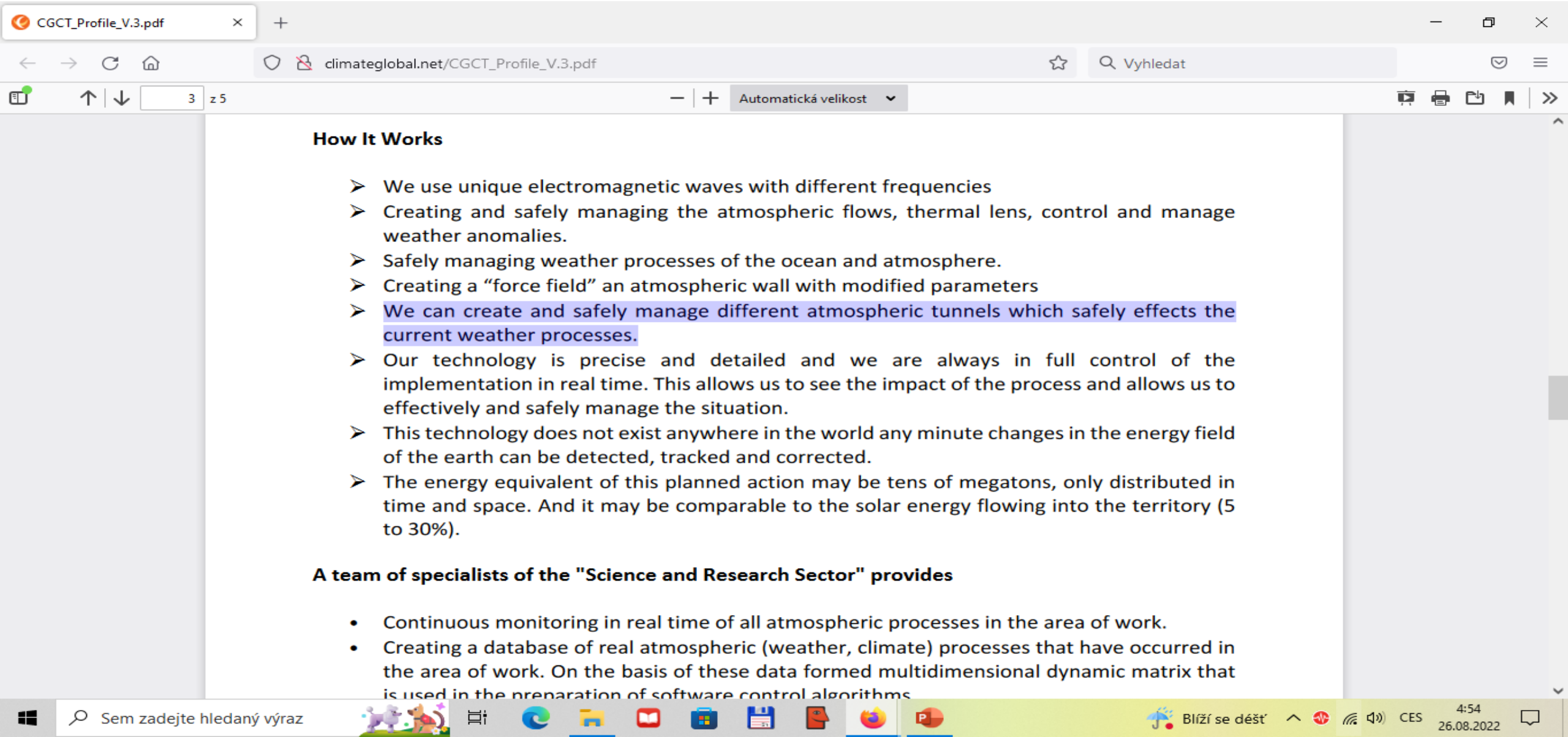
- We use unique electromagnetic waves with different frequencies
- Creating and safely managing the atmospheric flows, thermal lens, control and manage weather anomalies.
- Safely managing weather processes of the ocean and atmosphere.
- Creating a “force field” an atmospheric wall with modified parameters
- We can create and safely manage different atmospheric tunnels which safely effects the current weather processes.
- Our technology is precise and detailed and we are always in full control of the implementation in real time. This allows us to see the impact of the process and allows us to effectively and safely manage the situation.
- This technology does not exist anywhere in the world any minute changes in the energy field of the earth can be detected, tracked and corrected.
- The energy equivalent of this planned action may be tens of megatons, only distributed in time and space. And it may be comparable to the solar energy flowing into the territory (5 to 30%).

A team of specialists of the "Science and Research Sector" provides

- Continuous monitoring in real time of all atmospheric processes in the area of work.
- Creating a database of real atmospheric (weather, climate) processes that have occurred in the area of work. On the basis of these data formed multidimensional dynamic matrix that is used in the preparation of software control algorithms

Sem zadejte hledaný výraz
Bliží se déšť
CES
4:54
26.08.2022

UMÍME VYTVOŘIT A BEZPEČNĚ ŘÍDIT RŮZNÉ ATMOSFÉRICKÉ TUNELY, KTERÉ OVLIVŇUJÍ PROCESY POČASÍ



How It Works

- We use unique electromagnetic waves with different frequencies
- Creating and safely managing the atmospheric flows, thermal lens, control and manage weather anomalies.
- Safely managing weather processes of the ocean and atmosphere.
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KOMPLEXY RŮZNÝCH ANTÉN, JEJICHŽ UMÍSTĚNÍ A JAK VLASTNĚ VYPADAJÍ JE PŘÍSNĚ TAJNÉ

CGCT_Profile_V.3.pdf

climateglobal.net/CGCT_Profile_V.3.pdf

4 z 5

Automatická velikost

Equipment

Hardware technology "Controlled Weather Change" presents a distributed network of antenna systems. Antenna complexes are located in areas of active weather-forming processes in the Indian Ocean region. Antenna complexes are fully autonomous, non-volatile; with a high level of redundancy these complexes provide a completely safe control system of all atmospheric processes.

The information about the location and composition of equipment is strictly confidential.

***1.* Regulation of the amount of rainfall in any given area**

- Raising the amount of rainfall up to 50% in the arid season in a given area
- Decrease in precipitation during heavy rainfall period in a given area
- Ensuring the required amount of precipitation in a given area within a certain time interval
- Changing in average levels of precipitation in a given area
- Filling of reservoirs with fresh natural water

The provision of additional inflow of moisture into the arid regions of the country is carried out by the transfer of wetted masses of air from the areas of Indian and Pacific Oceans, which will increase precipitation in arid areas by 150-300 mm a year that will eliminate water scarcity for household, agricultural and industrial needs of regions that suffer from water scarcity.

***2.* Regulation of seasonal temperature contrasts**

- Changing maximum and average temperature in any given territory

Sem zadejte hledaný výraz

Blíží se déšť

CES 4:55 26.08.2022

Cyclone Ashooba Hits Muscat
PŘEHRÁVÁ

https://www.youtube.com/watch?v=J4TbRDDYIs8

Vyhledat

YouTube CZ

Search



Cyclone Ashooba Hits Muscat (Oman)

15,677 views • Jun 10, 2015

46 DISLIKE SHARE CLIP SAVE ...

All Watched



TOP 10 BEST TORNADOES
Pecos Hank
25M views • 5 years ago



Cyclone Topples Cars in India
ABC News
757K views • 5 years ago



WION Climate Tracker LIVE | Europe's drought & heat wave...
WION
38 watching
LIVE



Meet Woebot!
Woebot Health
2.3K views • 7 months ago



Gravitas | Orania: A 'whites-only' town in South Africa
WION
863K views • 13 days ago

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Bouřka CES 5:00 26.08.2022

HAARP A VÝZKUM IONOSFÉRY



Lukáš Visingr - iDNES.cz
idnes.cz/wiki/lide-v-cesku/lukas-visingr.K464589

Lukáš Visingr

Lukáš Visingr je vojenský a bezpečnostní analytik a publicista



Obrana si odškrtává modernizační projekty. Ty nejdůležitější ještě chybí

1. prosince 2020

Vrtulníky, děla, radary, protivzdušné systémy, kolové obrněnce, další transportní letouny nebo...



Běloruská armáda: početné speciální síly a vojáci, kteří by s Rusy nebojovali

27. srpna 2020

Běloruská armáda je v plné bojové pohotovosti. Podle prezidenta Lukašenka mají vojáci bedlivě...



Minuta ticha a nový raketomet. Rusko ukázalo svou sílu vojenskou přehlídkou

aktualizováno 24. června 2020

Jako ukázka vojenské síly současného Ruska vyzněla vojenská přehlídka na Rudém náměstí v centru

Další z kategorie

Aleš Opata
Andor Šándor
Břetislav Tureček
Jiří Soukup (bezpečnostní expert)
Josef Bečvář
Kamil Beneš
Libor Lochman
Martin Marcin
Patrik Štěpánek
Petr Kolář (diplomat)
Petr Pavel
Tomáš Pojar

Reklama
Reklamy Google
Přestat zobrazovat tuto reklamu
Proč tato reklama?

PLANEO Elektro
Při koupi pracího setu získáte dárek za 3 000 Kč
VÍCE ZDE

CASHBACK až 4000 Kč
Až 4000 Kč zpět za nákup am. chladniček
VÍCE ZDE

Systém HAARP
Nezabezpečeno | military.cz/usa/weapons/haarp/haarp.htm
Aktualizovat

HAARP

Připravil Lukáš Visingr

Zkratka HAARP znamená High-frequency Active Auroral Research Program, tedy vysokofrekvenční aktivní polární výzkumný program. Oficálně se jedná o program výzkumu ionosféry, ale prakticky všechna známá fakta svědčí o tom, že HAARP je zbraň, nebo alespoň vojenské zařízení. Pravdou ovšem je, že ionosféry se docela jistě týká.

Ionosféra, tedy řídká část atmosféry ve výšce zhruba od 80 kilometrů nad povrchem, obsahuje velké množství nabitých částic (iontů) a kromě jiného umožňuje šíření různých rádiových signálů.

Základna HAARP se nachází na Aljašce v oblasti Gakona, což je necelých 150 mil severovýchodně od města Anchorage. Další, poněkud menší zařízení takového typu je v místě jménem Arecibo v Norsku, třetí je v Portoriku. Podle některých zdrojů jsou další na jižní polokouli (snad dokonce poblíž jižního pólu). Kromě toho je po celé Zemi rozmístěno několik desítek dalších atmosférických "hořáků" mnohem menších rozměrů.

Systém pokrývá plochu asi 13 hektarů a je tvořen 180 anténami (12 krát 15 řad), z nichž každá má dva dipólové přenašeče o výkonu 10 000 W. Celá soustava má tedy výkon 3,6 MW (3,6 miliónu wattů). Antény mají dvě kmitočtová nastavení, a to 2,8 až 7 MHz a 7 až 10 MHz. HAARP tedy vysílá elektromagnetické vlnění do ionosféry, přičemž využívá některé její charakteristiky. Ionosféra funguje především jako gigantická "anténa", pomocí níž lze signál zaměřit na kterékoli místo na Zemi. To ovšem není všechno. Za určitých meteorologických podmínek (ty se neustále mění, ale dají se předpovídat) lze ionoféře "ukrást" značné množství elektromagnetické energie, která je tam díky iontům rozmístěna v těžko představitelném množství. Pokud bude celý výkon HAARPu za vhodných podmínek zamířen na jediný bod oblohy, původní signál se zesílí až tisíckrát, což znamená výkon 3,6 GW, tedy 3,6 MILIARDY wattů. Abyste si udělali představu, tak je to zhruba dvojnásobek výkonu všech vodních elektráren v České republice dohromady.

Je třeba podotknout, že prakticky identický systém navrhoval počátkem 20. století geniální Nikola Tesla, ale v tehdejší době nenašel pro své progresivní názory příliš pochopení. Kořeny projektu HAARP sahají do roku 1983, kdy Bernard Eastlund, majitel ropné společnosti ARCO (Atlantic Richfield Oil Company), vzkřísil staré Teslovy teorie o řízené energii, získal patenty na jejich nové využití a přesvědčil americké ministerstvo obrany, aby se jimi zabývalo. Eastlund pak založil divizi APTI (ARCO Power Technologies Inc.), která od roku 1991 pracovala na HAARPu. První ostrý test proběhl v prosinci 1994 a od té doby je systém spouštěn nejméně jednou za měsíc.

Nabízí se samozřejmě otázka, k čemu může sloužit vlna s energií miliard wattů. Oficiální stanovisko mluví pouze o výzkumu atmosféry a vesmíru. Tomu ovšem věří jen málokdo. Objevila se řada teorií o skutečném poslání HAARPu; pominu-li nápady typu zbraně proti mimozemšťanům, pak lze uvažovat zhruba o následujících aplikacích, které jsem seřadil podle jejich pravděpodobnosti.

Odešlete zpětnou vazbu
Proč tato reklama?
12:05
12.02.2021

Zahorizontální radar...
Radiolokátory typu Over-The-Horizon již fungují řadu let, bohužel však stále vykazují tentýž zásadní problém. Jejich přesnost totiž klesá exponenciálně se vzdáleností, takže sice vidíte za obzor, ale skutečná pozice cílového objektu může být klidně o desítky kilometrů odlišná. Z tohoto důvodu je také zcela nemožné podle OTH radaru cokoli zaměřovat. Na druhou stranu, nespornou výhodou je možnost zachycení letounů STEALTH, alespoň tedy první generace. Například letoun F-117 je vytvořen tak, aby se od něj radarové vlny odrážely směrem vzhůru, a nikoli zpět k vysílači. Paprsek zahorizontálního radaru však letoun zasahuje shora, a odraz zpět nahoru je ta nejlepší možná varianta. Uvážíme-li obrovský výkon HAARPu, pak máme zřejmě co do činění s radarem, který může vytvořit klidně i radarovou "mapu" celé planety. Můj osobní názor na HAARP je ten, že se jedná o součást protiraketové obrany, přesněji řečeno detektor balistických střel.

...nebo ještě něco víc?
Někteří odborníci zastávají hypotézu, že obrovský výkon HAARPu by dokázal "protlačit" elektromagnetické vlny nejen vzduchem, ale i skrz vodu a dokonce i pevné látky. Nabízí se tak řada možností: komunikace s ponořenými ponorkami, "rentgenové" snímkování Země (šlo by o jakýsi gigantický tomograf), pátrání po podzemních úkrytech, ložiscích surovin či ponorkách. Často se mluví také o detekci aktivity jaderných zařízení, a to hlavic i reaktorů, případně o monitorování veškeré rádiové komunikace na Zemi.

Štít...
Už Nikola Tesla navrhoval vytvoření "elektromagnetického štítu", který by nepropustil žádné cizí těleso (rozuměj zbraň). Je známo, že vědci v SSSR se zabývali myšlenkou ničení balistických raket pomocí ionizace atmosféry, jejíž fyzikální vlastnosti se tímto pochopitelně okamžitě mění. Pokud by k něčemu takovému došlo v dráze letu rakety, následovaly by turbulence a poruchy aerodynamiky, které by při obrovské rychlosti rakety nevyhnutelně způsobily její zkázu. HAARP by tedy mohl vytvořit jakýsi protiraketový "deštník", jehož účinnost by byla stoprocentní.

...a meč
Výborně, a proč zůstávat u obrany? Co kdybychom nečekali s "deštníkem" na útok, ale namísto toho tím "deštníkem" nepřítele vzali po hlavě, aby k útoku vůbec nedošlo? :-) HAARP by mohl bez problémů fungovat jako emitor elektromagnetického impulsu, který by svým monstrózním výkonem doslova "usmažil" elektroniku jakékoli družice, zbraně či komunikačního prostředku.

Poručíme větru, dešti
Ovlivnění počasí je ve skutečnosti docela jednoduché. Přípravy takových systémů proběhly už v 50. letech; roku 1976 podpsalo přes 60 států dohodu o zákazu geofyzikálních zbraní, která ovšem platila na dobu určitou, a to 20 let. HAARP může ionizací či ohřevem atmosféry výrazně ovlivnit proudění vzduchu, a tak způsobit třeba bouřku, tornádo, extrémní vedra či mrazy. Například je možné kdekoli na světě vyvolat umělý blesk, mnohem silnější než kterýkoli přírodní; vždyť to dokázal zmíněný Nikola Tesla již na přelomu 19. a 20. století. Teoreticky by snad šlo (ale to už je hodně přitažené za vlasy) zasáhnout také podzemní vrstvy magmatu, a tak způsobit zemětřesení.

Kontrola magnetosféry

Reklamy Google
Odešlete zpětnou vazbu
Proč tato reklama?

HAARP – možný nástroj pro ovlivňování počasí a lidí



HAARP může vyzařovat zpátky na planetu velmi nízké frekvence

Virtual ULF Antennea-2013.pdf

https://spp.astro.umd.edu/SpaceWebProj/Invited Talks/Virtual ULF Antennea-2013.pdf

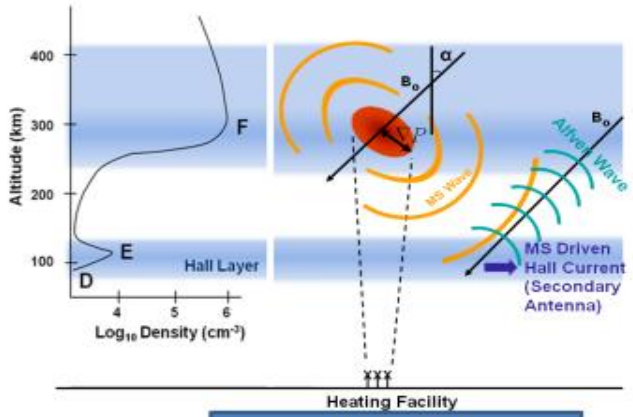
3 z 27

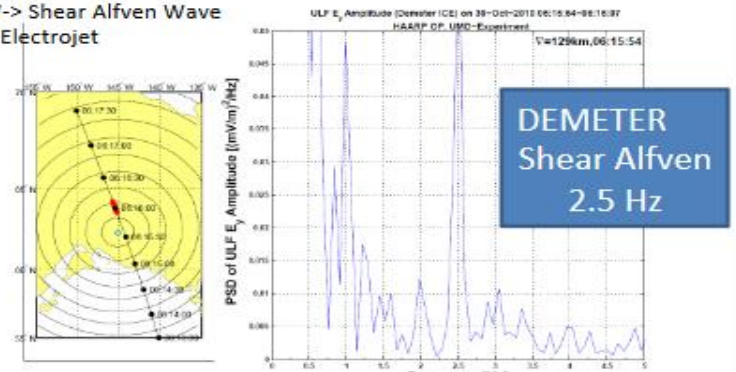
Automatická velikost

VIRTUAL ANTENNA – IONOSPHERIC CURRENT DRIVE (ICD)

DOES NOT REQUIRE CURRENT- f < 70 Hz

MS-> Magnetosonic
SAW-> Shear Alfven Wave
EJ-> Electrojet

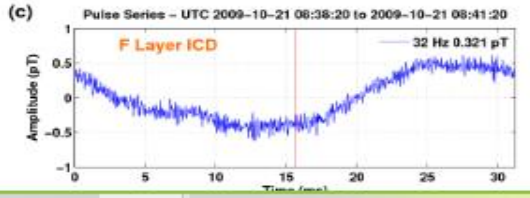




DEMETER
Shear Alfven
2.5 Hz

DEMETER
Magnetosonic .1 Hz





GROUND

Papadopoulos et al. GRL, 2011 a,b; Eliasson et al. JGR, 2012

Hledat

7°C Převáž. oblačno

CES

1:58
22.02.2023

Virtual ULF Antennea-2013.pdf
https://spp.astro.umd.edu/SpaceWebProj/Invited Talks/Virtual ULF Antennea-2013.pdf
Vyhledat
2 z 27
Automatická velikost

VIRTUAL ANTENNA – CURRENT MODULATION (PEJ)

Modulated electron Heating-
> Modulates conductivity->
Virtual Antenna

REQUIRES CURRENT

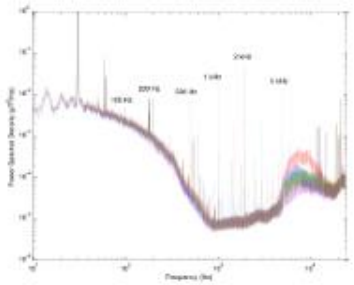
Radiation Belt Injection

Ejectrojet (EJ)

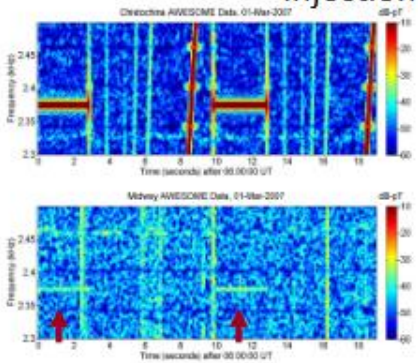
Ground Injection



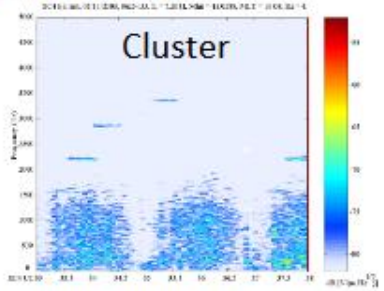
EI Waveguide Injection



DELTA Mine –
Papadopoulos, PARS, 2007

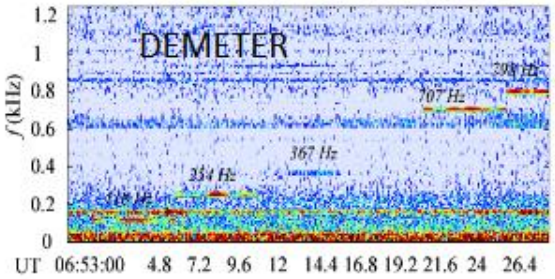


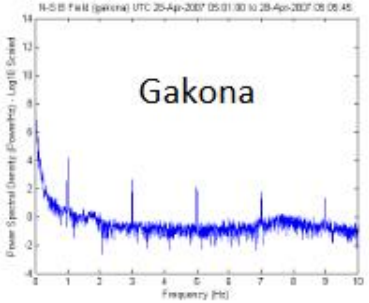
5400 km away Midway,
Moore et al., JGR 2007



Platino et al., JGR 2004, 2006

Bx ,02/10/2005, 06:52:59.7, L = 4.36,
λ = 60.59°, GMlong = 270.81°, Alt. = 725.6 km





Papadopoulos et al., URSI, 2010; JGR 2005

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1:58
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„Náhodné“ ovlivňování počasí a klimatu

letadla, lodě, raketoplány, satelity, ionosférická zařízení, nukleární výbuchy,…

Tzv. kondenzační stopy se transformují na cirrus mraky (výška 6 a více km)

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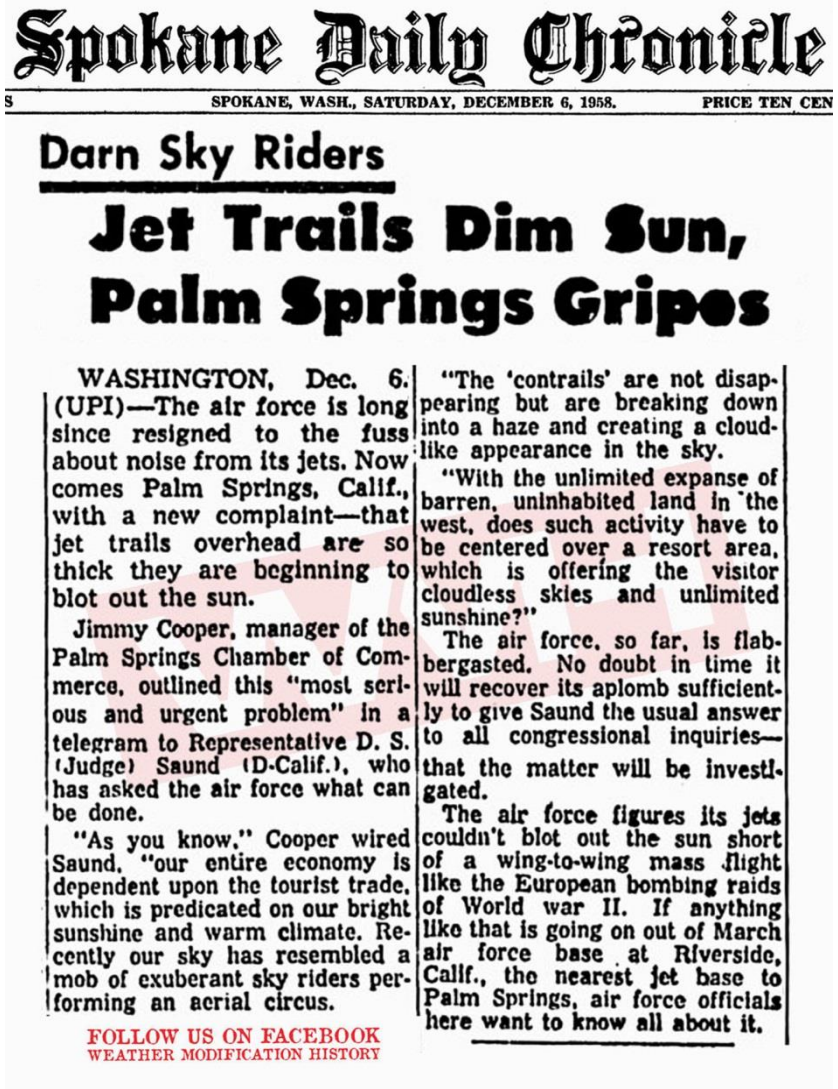
hhw.pdf 2 / 8 100%



Fig. 1. Geoengineering particulate trails with photographers' permission [4]. clockwise from upper left: Soddy-Daisy, Tennessee, USA (David Tulis), Reiat, Switzerland (Rogerio Camboim SA), Warrington, Cheshire, UK (Catherine Singleton), Alderney, UK looking toward France (Neil Howard), Luxembourg (Paul Berg), New York, New York, USA (Mementosis)

10:05
13.02.2021

Zástupci města si stěžují na americké letectvo vytváří nesnesitelný závoj na obloze 1958



Spokane Daily Chronicle

SPOKANE, WASH., SATURDAY, DECEMBER 6, 1958. PRICE TEN CEN

Darn Sky Riders

Jet Trails Dim Sun, Palm Springs Gripes

WASHINGTON, Dec. 6. (UPI)—The air force is long since resigned to the fuss about noise from its jets. Now comes Palm Springs, Calif., with a new complaint—that jet trails overhead are so thick they are beginning to blot out the sun.

Jimmy Cooper, manager of the Palm Springs Chamber of Commerce, outlined this "most serious and urgent problem" in a telegram to Representative D. S. (Judge) Saund (D-Calif.), who has asked the air force what can be done.

"As you know," Cooper wired Saund, "our entire economy is dependent upon the tourist trade, which is predicated on our bright sunshine and warm climate. Recently our sky has resembled a mob of exuberant sky riders performing an aerial circus.

"The 'contrails' are not disappearing but are breaking down into a haze and creating a cloud-like appearance in the sky.

"With the unlimited expanse of barren, uninhabited land in the west, does such activity have to be centered over a resort area, which is offering the visitor cloudless skies and unlimited sunshine?"

The air force, so far, is flabbergasted. No doubt in time it will recover its aplomb sufficiently to give Saund the usual answer to all congressional inquiries—that the matter will be investigated.

The air force figures its jets couldn't blot out the sun short of a wing-to-wing mass flight like the European bombing raids of World war II. If anything like that is going on out of March air force base at Riverside, Calif., the nearest jet base to Palm Springs, air force officials here want to know all about it.

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"Let's face it, men" said a crisp talking, star-studded general, **"you'll either have to live with the vapor trails or move the City of Palm Springs."**

The resort area, it appears, is known as the "Palm Springs Intersection." the freeway interchange of all West Coast aerial traffic.

So, the city officials and civic leaders, in an apparently unanimous, unspoken agreement, decided that a peaceful coexistence with the Air Force was the wisest course.

https://weathermodificationhistory.com/1948-contrail-cirrus-complaints-begin-nationwide/



THIRTY-SECOND YEAR

The Desert Sun

The Desert Empire's Daily Newspaper

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WEATHER MODIFICATION HISTORY

XII, No. 138 20 Pages—2 Sections Palm Springs, California, Saturday, January 31, 1959

AF GIVES VILLAGE 2 CHOICES: LIVE WITH TRAILS OR MOVE

Armády po celém světě se vyhýbají kontrole toho jak moc znečišťují ovzduší

World's militaries avoiding scruti

theguardian.com/environment/2021/nov/11/worlds-militaries-avoiding-scrutiny-over-emissions

Greenhouse gas emissions

World's militaries avoiding scrutiny over emissions, scientists say

Countries do not have to include armed forces' emissions in their targets despite estimates sector creates 6% of greenhouse gases

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F-16 fighters take off at the US Osan airbase in Pyeongtaek, South Korea Photograph: YONHAP/EPA

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Dva americké státy zažalovaly letecké společnosti kvůli znečištění ovzduší letadly 1970

TWO STATES SUE OVER “BLACK BELCH” AND CIRRUS CLOUDS

“The government will tell the nation’s 43 commercial airlines Tuesday that **they must end pollution of the skies with jet engine smoke** by 1972 or face punitive legislation from Congress. Mainly at issue is the installation of a redesigned combuster – or burner can – on 3,000 existing commercial jet engines of one maker that reportedly account for 70 percent of all smoke pollution from airliners.

There will be a marked aesthetic improvement, since the so-called **burner cans cut out something like 70 percent of the visible pollution** and thus the familiar “black belch” will be seen no more.”

https://weathermodificationhistory.com/states-sue-airlines-over-smoke-pollution-of-the-skies/



St. Petersburg Times

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Florida's Best Newspaper
ST. PETERSBURG, FLORIDA, MONDAY, JANUARY 19, 1970

12-A St. Petersburg Times, Monday, January 19, 1970

U.S. To Clamp Down On Jet Pollution

WASHINGTON (AP) — The government will tell the nation's 43 commercial airlines Tuesday that they must end pollution of the skies with jet-engine smoke by 1972 or face punitive legislation from Congress.

Top airline executives will get the blunt message of quick voluntary cleanup or else at a meeting called by Secretary of Health, Education and Welfare (HEW) Robert H. Finch and Secretary of Transporation John A. Volpe.

The executives will be told of the Administration's intention to push tough legislation already nearing passage unless they seize this final opportunity of doing the job themselves, HEW pollution fighters said.

MAINLY AT issue is the installation of a redesigned combuster — or burner can — on 3,000 existing commercial jet engines of one maker that reportedly account for 70 per cent of all smoke pollution from airliners.

The government estimates all existing Boeing 727, Boeing 737 and Douglas DC9 jetliners with the Pratt and Whitney JT8B engines can be converted to smoke-free operation by the end of 1972 at a cost of $13.5-million.

The airline industry has told the Federal Aviation Administration it can do the job by the end of 1974, but only then at a cost of $30-million.

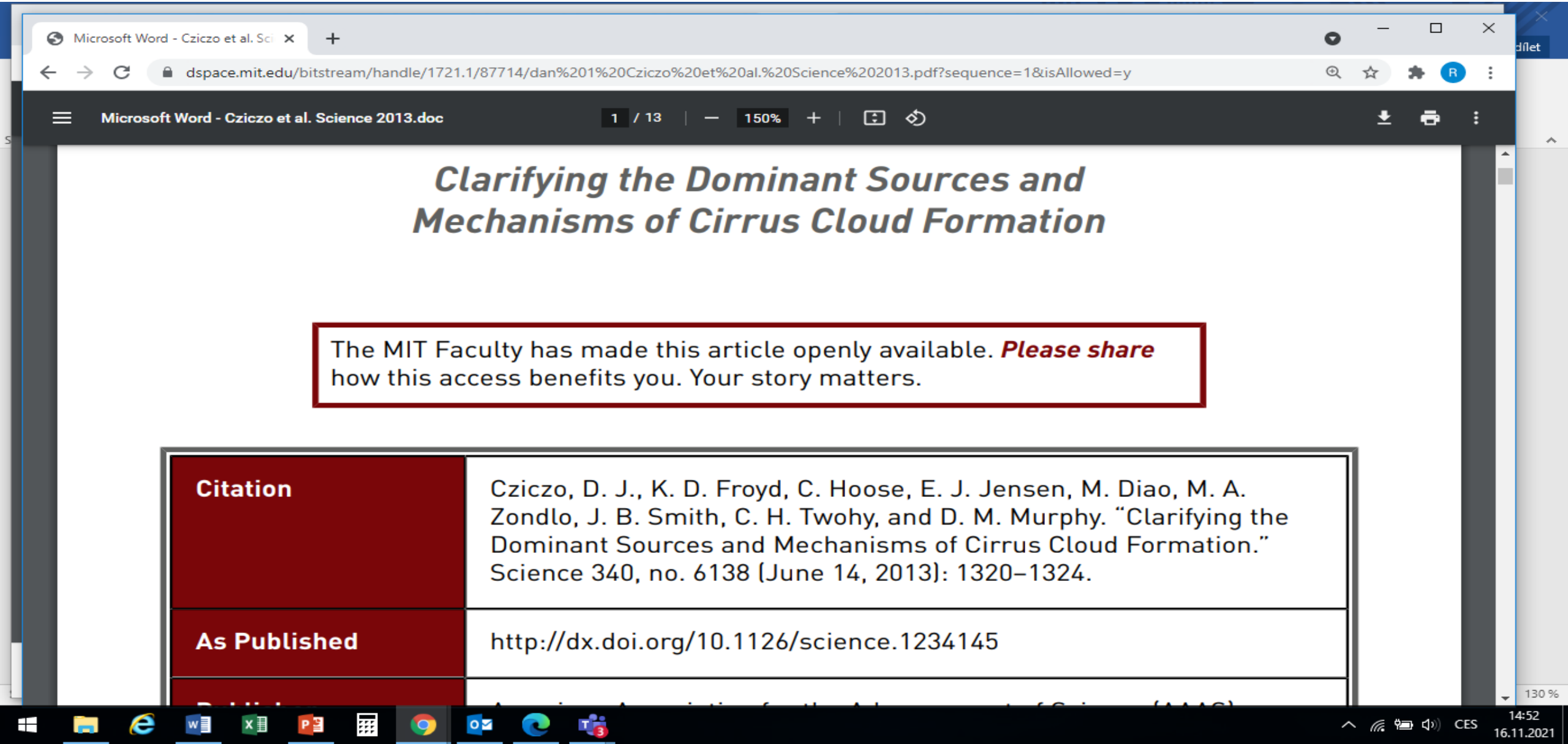
THE SMOKE that pours from jet engines is caused by incomplete fuel burning in the standard combuster. The redesigned combuster eliminates smoke plumes almost completely, federal specialists say.

The government is limited to persuasion about jet pollution at present because it lacks specific congressional authorization to attack the problem.

California already has laid down a Jan. 1, 1971, deadline for ending jet pollution in that state. Additionally, Illinois and New Jersey have filed suits to force a quick cleanup.

JOHN A. VOLPE
. . . calls Tuesday meeting.

MIT Identiflkace hlavních zdrojů a mechanismů utváření cirrových mraků 2013 – analýza zplodin v běžné letové výšce 2002-2011



61% identifikovaných částic byl minerální prach a částice těžkých kovů

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The predominant particle category on which freezing took place was mineral dust and metallic particles, 61% by number (Fig. 1). This category was also the most enhanced in cloud ice with respect to its near-cloud abundance, 5%. The overwhelming majority, ~90%, exhibit no apparent sulfate or organic coating. Mixtures of sulfate and organic carbon, in all cases the largest near-cloud category at 55%, were the principal IR in only two distinct cloud encounters for which homogeneous freezing is inferred. In all other cirrus sulfate/organic particles were 14% of IR. Sulfate and organic material can act as IN when present as glasses or anhydrous salts *(10,11)*. Therefore, some of these particles may have entered the ice phase heterogeneously, implying the 94% value of heterogeneous freezing may be a lower limit. Sea salt was abundant as IR during flights that took place over open ocean, 25% by number, but only 3% during other flights. Biomass burning was in all cases the second most abundant particle type near-cloud, 36%, but was depleted in the IR, representing <5%. These quantities represent composite averages for each of the four campaigns. Single flights within campaigns were analyzed individually with the only differences from the campaign averages being the homogeneous freezing cases *(12)*. Representative spectra are shown for four IR types in Fig. 2.

The cirrus encounters presented here include both convective outflow and synoptically

CES 15:06 16.11.2021

Minerální prach hliníku a křemíku; Částice sodíku, draslíku, niklu, mědi, železa a olova

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spectrometry (*13,14*). This technique is sensitive to all atmospheric aerosol particle components in a range from ~0.2 – 3 μm aerodynamic diameter (*13,14*). Ice residual particles were also collected and analyzed with electron microscopy coupled to energy dispersive X-ray microanalysis (*21*). Homogeneous freezing appeared to initiate cloud formation for only two individual cirrus clouds with composition shown in two insets (*). Mineral dust is the most dominant heterogeneous ice nucleus in all other cirrus encounters despite the geographic separation between the study areas and major global dust sources, colored brown (NASA Land Processes Distributed Active Archive Center, https://lpdaac.usgs.gov/get_data).

Fig. 2. Single particle mass spectra (MS) and electron microscope images (EM; inset) of ice residual particles analyzed during MACPEX corresponding to the categories presented in Fig. 1. (**A**) MS: The most common residual, mineral dust with minimal surface coating. EM: An aluminosilicate particle, also without apparent surface coating. (**B**) MS: Metallic particle with sodium, potassium, nickel, copper, iron and lead. EM: Metallic particle with tin, carbon and silicon. (**C**) MS: One of six particles of possible biological origin suggested by a composition including carbon, nitrogen, oxygen and phosphorous *(12)*. EM: The only particle of possible biological origin found on the electron microscope grids suggested by a composition including carbon, hydrogen, oxygen and phosphorous. (**D**) MS: An EC particle. EM: One of two EC particles, identified by both composition and fractal spherule aggregate structure. Note that the spectra and images do not correspond to the same particles.

Fig. 3. The distribution of upper tropospheric clear air relative humidity with respect to ice (RH_i)

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Charakterizace emisí a zplodin z letadel využitím metody hmotnostní spektrometrie – Institut technologie v Zurichu 2016

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Atmospheric Environment 134 (2016) 181–197

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Chemical characterization of freshly emitted particulate matter from aircraft exhaust using single particle mass spectrometry

Manuel Abegglen [a, *], B.T. Brem [b, c], M. Ellenrieder [d], L. Durdina [b, c], T. Rindlisbacher [e], J. Wang [b, c], U. Lohmann [a, **], B. Sierau [a]

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[b] Laboratory for Advanced Analytical Technologies, Empa, Dübendorf, Switzerland
[c] Institute of Environmental Engineering, ETH Zurich, Zurich, Switzerland
[d] SR Technics, Zurich, Switzerland
[e] Swiss Federal Office of Civil Aviation, Bern, Switzerland

HIGHLIGHTS

- First PM aircraft exhaust measurements using single particle mass spectrometry.

Molybden, vápník, sodík, železo, měď, baryum, chrom, hliník, křemík, hořčík, kobalt, mangan, vanad, nikl, olovo titan, zirkon

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Table 1
Number fraction in percent of spectra from particles emitted by the Turbofan 1, Mixed-Flow Turbofan and Turbofan 2 engines and from ambient background showing peaks indicating the presence of the corresponding metal compound. For Turbofan 1 the values are pooled into low (3–7%, idle/taxi), medium (20–65%, cruise) and high (85–120%, take-off) thrust range, and the value in parenthesis is the average peak area normalized to the largest value for each metal.

Element	Turbofan 1			Mixed-flow turbofan	Turbofan 2	Background
	Low thrust	Medium thrust	High thrust			
Molybdenum	5.3 (0.52)	5.9 (0.73)	9.6 (1.00)	55.9	36.7	1.9
Calcium	32.4 (0.61)	16.2 (1.00)	1.8 (0.04)	22.3	39.1	23.1
Sodium	29.1 (1.00)	22.6 (0.41)	4.3 (0.06)	50.2	51.1	34.5
Iron	22.5 (1.00)	8.4 (0.49)	0.7 (0.06)	33.0	35.5	11.1
Copper	2.9 (1.00)	0.4 (0.50)	0.0 (–)	2.6	6.7	2.5
Barium	0.5 (0.16)	0.3 (1.00)	0.1 (0.08)	3.7	16.5	2.2
Chromium	2.7 (0.10)	17.2 (1.00)	3.6 (0.18)	72.3	52.0	5.2
Aluminium	3.1 (0.21)	8.4 (1.00)	1.0 (0.03)	8.3	13.5	15.1
Silicon	0.4 (0.36)	2.1 (1.00)	0.1 (0.15)	0.2	0.9	4.3
Magnesium	0.6 (0.46)	1.7 (1.00)	0.3 (0.04)	16.6	20.8	3.1
Cobalt	0.5 (0.83)	1.4 (1.00)	0.4 (0.93)	1.7	2.8	1.5
Manganese	0.3 (0.84)	0.9 (1.00)	0.1 (0.02)	17.5	17.4	8.9
Vanadium	0.4 (0.89)	0.7 (1.00)	0.1 (0.04)	9.4	9.2	3.4
Nickel	0.4 (0.12)	0.6 (1.00)	0.1 (0.04)	10.7	19.3	8.3
Lead	0.1 (0.36)	0.4 (1.00)	0.0 (–)	1.3	0.9	2.5
Titanium	0.0 (–)	0.2 (1.00)	0.0 (–)	0.0	0.9	0.0
Zirconium	0.0 (–)	0.0 (–)	0.0 (–)	0.9	0.6	0.3

calcium- and barium-containing particles are largest. This indicates that the amount of calcium and barium present on each particle is largest at medium thrust despite the smaller number fractions.

The fractions of metal-containing particles were generally higher for Turbofan 2 and the Mixed-Flow Turbofan than for the

The presented fractions of particles that contain metallic compounds are lowest for the ambient background particles except for silicon, lead and aluminium of which the latter shows similar values as Turbofan 1. It is likely that the ambient background measurements were influenced to some extent by the engine test

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by Kieran Tait, The Conversation



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Aircraft Emissions, Their Plume-Scale Effects, and the Spatio-Temporal Sensitivity of the Atmospheric Response: A Review

by Kieran N. Tait [1,*], Mohammad Anwar H. Khan [2], Steve Bullock [1], Mark H. Lowenberg [1] and Dudley E. Shallcross [2]

[1] Department of Aerospace Engineering, Queen's Building, University Walk, University of Bristol, Bristol BS8 1TR, UK

[2] Atmospheric Chemistry Research Group, School of Chemistry, Cantock's Close, University of Bristol, Bristol BS8 1TS, UK

* Author to whom correspondence should be addressed.

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(This article belongs to the Special Issue Aircraft Emissions and Climate Impact)

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Green flights not in easy reach,

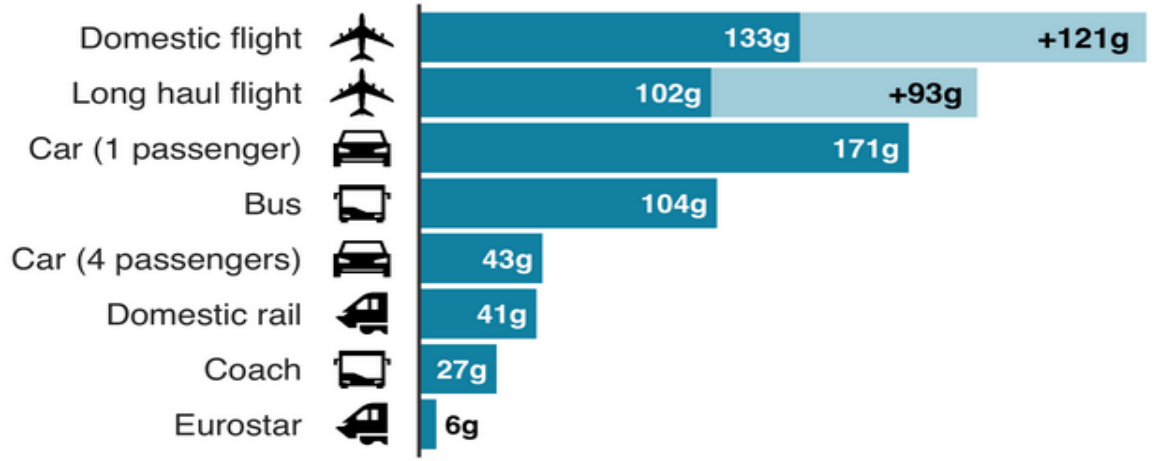
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Emissions from different modes of transport

Emissions per passenger per km travelled

CO2 emissions | Secondary effects from high altitude, non-CO2 emissions





'I don't want a funeral, it's a waste of money'

21 February 2023



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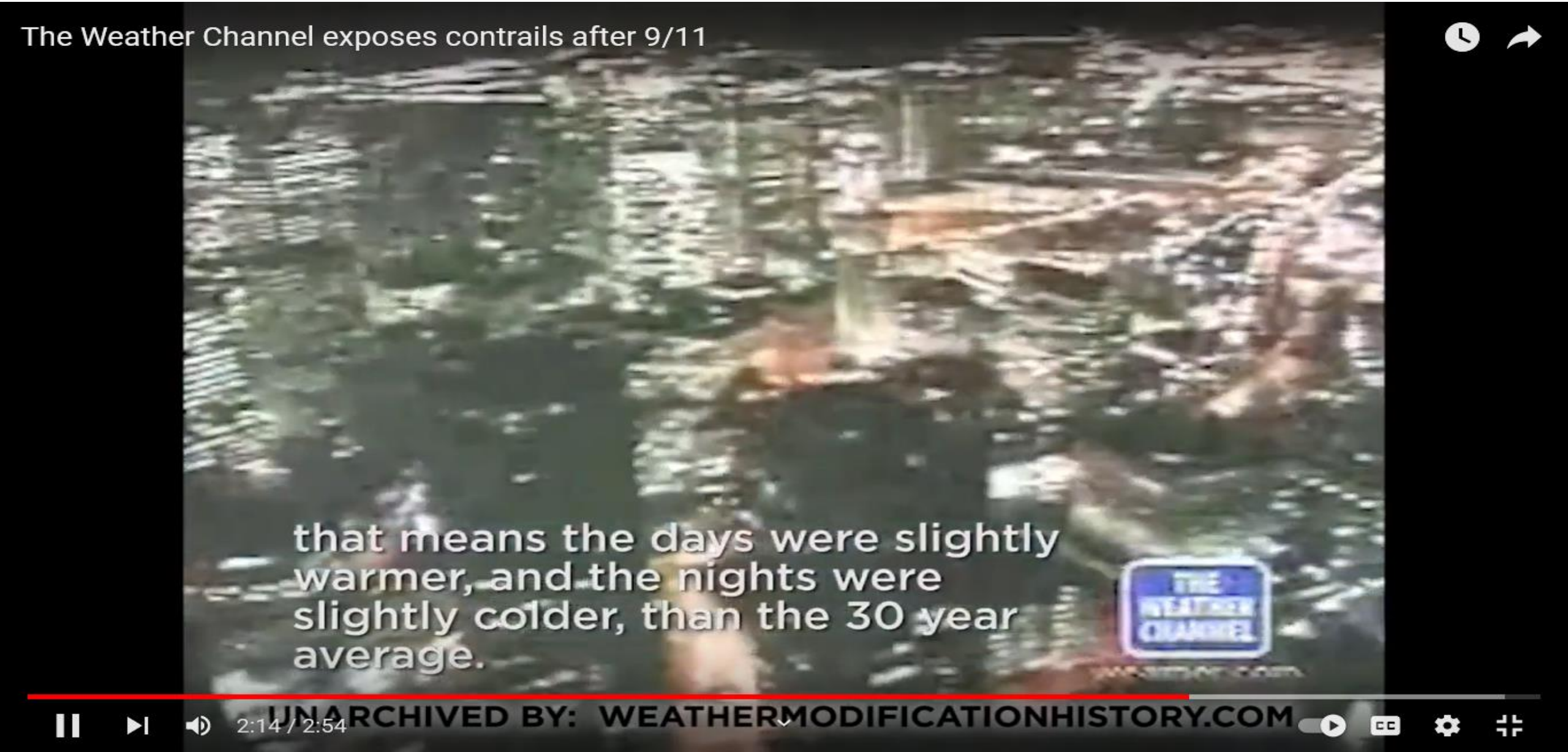
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David J. Travis[1], Andrew M. Carleton[2], and Ryan G. Lauritsen[3]

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The grounding of all commercial aircraft within U.S. airspace for the 3-day period following the 11 September 2001 terrorist attacks provides a unique opportunity to study the potential role of jet aircraft contrails in climate. Contrails are most similar to natural cirrus clouds due to their high altitude and strong ability to efficiently reduce outgoing infrared radiation. However, they typically have a higher albedo than cirrus; thus, they are better at reducing the surface receipt of incoming solar radiation. These contrail characteristics potentially suppress the diurnal temperature range (DTR) when contrail coverage is both widespread and relatively long lasting over a specific region. During the 11–14 September 2001 grounding period natural clouds and contrails were noticeably absent on high-resolution satellite imagery across the regions that typically receive abundant contrail coverage. A previous analysis of temperature data for the grounding period reported an anomalous increase in the U.S.-averaged, 3-day DTR value. Here, the spatial variation of the DTR anomalies as well as the separate contributions from the maximum and minimum temperature departures are analyzed. These analyses are undertaken to better evaluate the role of jet contrail absence and synoptic weather patterns during the grounding period on the DTR anomalies.

It is shown that the largest DTR increases occurred in regions where contrail coverage is typically most prevalent during the fall season (from satellite-based contrail observations for the 1977–79 and 2000–01 periods). These DTR increases occurred even in those areas reporting positive departures of tropospheric humidity, which may reduce DTR, during the grounding period. Also, there was an asymmetric departure from the normal maximum

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NASA 2004 – kondenzační stopy mohly způsobit mezi 70. a 90. lety v USA oteplení

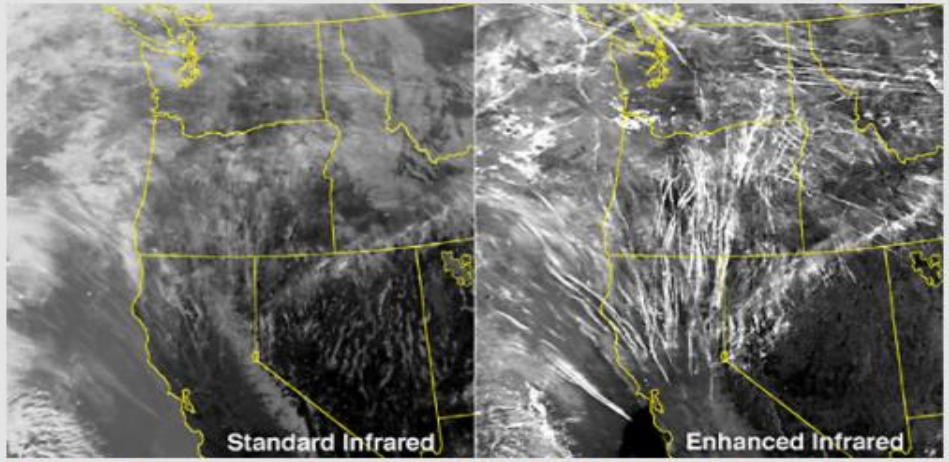
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CLOUDS CAUSED BY AIRCRAFT EXHAUST MAY WARM THE U.S. CLIMATE

NASA scientists have found that cirrus clouds, formed by contrails from aircraft engine exhaust, are capable of increasing average surface temperatures enough to account for a warming trend in the United States that occurred between 1975 and 1994.

"This result shows the increased cirrus coverage, attributable to air traffic, could account for nearly all of the warming observed over the United States for nearly 20 years starting in 1975, but it is important to acknowledge contrails would add to and not replace any greenhouse gas effect," said Patrick Minnis, senior research scientist at NASA's Langley Research Center in Hampton, Va. The study was published April 15 in the Journal of Climate. "During the same period, warming occurred in many other areas where cirrus coverage decreased or remained steady," he added.

"This study demonstrates that human activity has a visible and significant impact on cloud cover and, therefore, on climate. It indicates that contrails should be included in climate change scenarios," Minnis said.

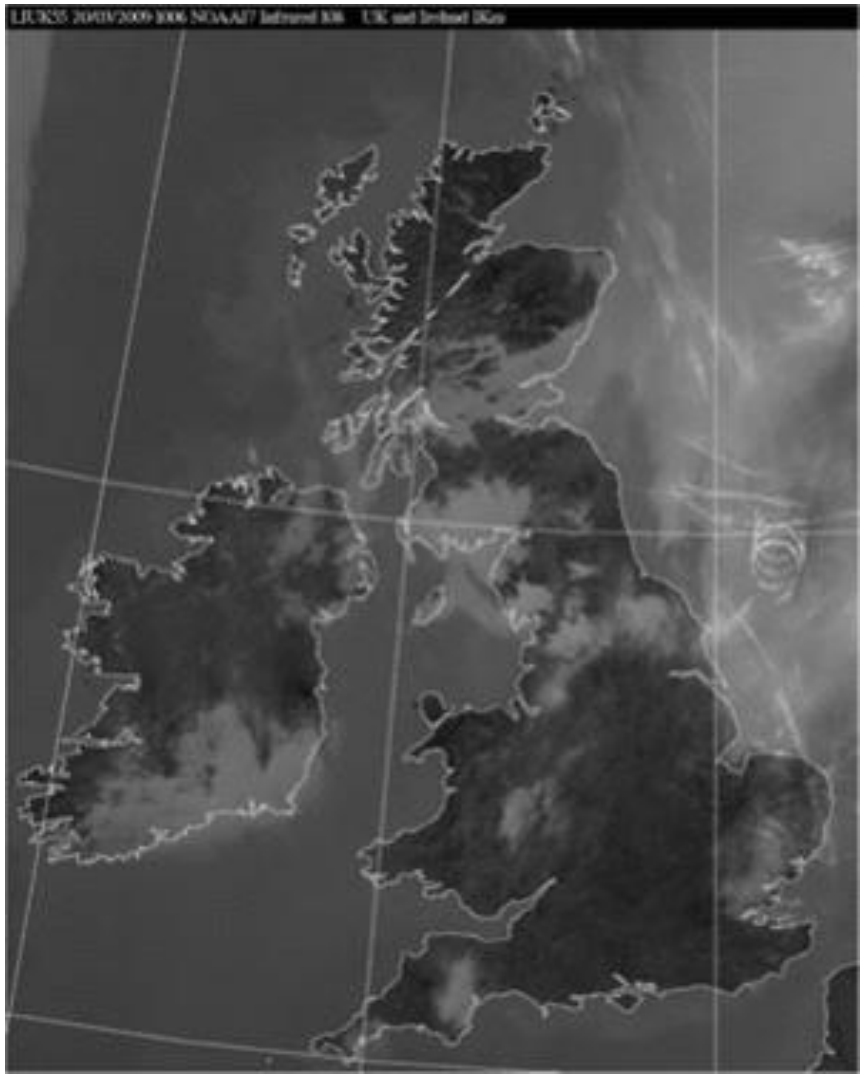


Above Image: These images from the NOAA-17 satellite taken during the morning of March 20, 2004, show how a contrail outbreak can appear to be regular cloud cover. The image on the left is a standard infrared satellite image, while that on the right uses two infrared wavelengths to reveal contrails. Many of the contrails appear to be from planes either coming from or going to central and southern California. Other contrails are due to aircraft on southeast-northwest tracks into Seattle and Portland. The contrails and resulting cirrus clouds are blown eastward by winds during the day.
CREDIT: NASA

Minnis determined the observed one percent per decade increase in cirrus cloud cover over the United States is likely due to air traffic-induced contrails. Using published results from NASA's Goddard Institute for Space Studies (New York) general circulation model, Minnis and his colleagues estimated contrails and their resulting cirrus clouds would increase surface and lower atmospheric temperatures by 0.36 to 0.54 degrees Fahrenheit per decade. Weather service data reveal surface and

Cirrus Mraky z jednoho letadla

VÝBUCH SOPKY NA ISLANDU 2009



„*Kondenzační stopy* za letadly se mění ve vysoké cirrus mraky, které je těžko rozeznat od přírodních mraků. Tyto rozšiřující se *kondenzační stopy* mohou dnes zapříčinit více globálního oteplování než veškerý oxid uhličitý emitován do ovzduší od začátku letectví.“

Boucher, Olivier (Sorbonna). "Atmospheric science: Seeing through contrails." *Nature Climate Change* 1.1 (2011): 24. – PDF

Haywood, J. M., R. P. Allan, J. Bornemann, P. Forster, P. N. Francis, S. Milton, G. Rädel, A. Rap, K. P. Shine, and R. Thorpe (2009), A case study of the radiative forcing of persistent contrails evolving into contrail-induced cirrus, J. Geophys. Res., 114, D24201, doi:10.1029/2008JD012650

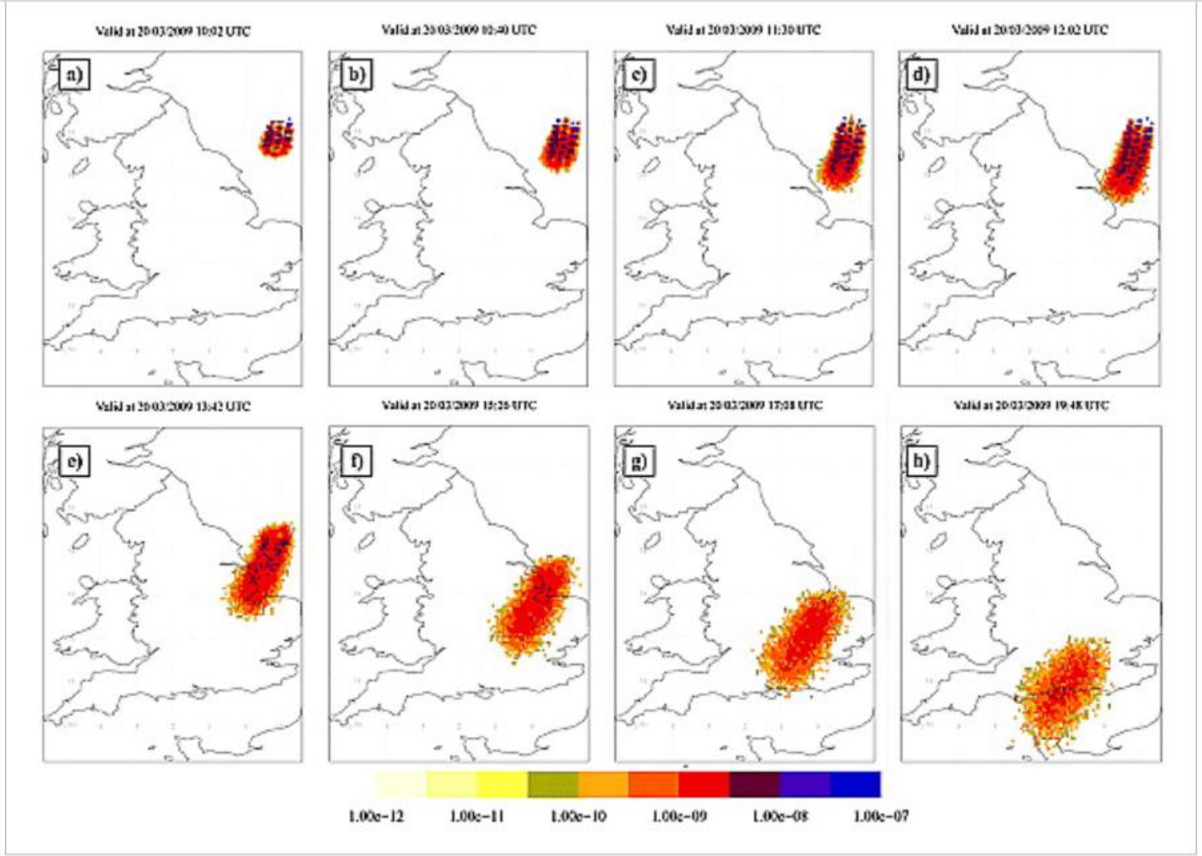


Figure 6

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Results from the NAME model initiating a contrail circle at 30,000 ft during the period 0830 to 1150 UTC on 20 March 2009. The units are nominally g m^{-3} from an initial emission of 1 g s^{-1}.

Metrics

Citations: 45

Am score 12

Details

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Keywords

contrails cirrus climate

Publication History

Issue Online:
19 December 2009

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19 December 2009

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24 September 2009

Mraky zůstávají na obloze až 18h a při jejich maximu dosahují rozlohy přes 50,000 km²

Čínské vyvolávání deště. Peking | Regional Variations in U.S. Diur | A case study of the radiative fo

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Abstract

[1] The radiative forcing due to a distinct pattern of persistent contrails that form into contrail-induced cirrus near and over the UK is investigated in detail for a single case study during March 2009. The development of the contrail-induced cirrus is tracked using a number of high-resolution polar orbiting and lower-resolution geostationary satellite instruments and is found to persist for a period of around 18 h, and at its peak, it covers over 50,000 km^2. The shortwave (SW) and longwave (LW) radiative forcing of the contrail-induced cirrus is estimated using a combination of geostationary satellite instruments, numerical weather prediction models, and surface observation sites. As expected, the net radiative effect is a relatively small residual of the much stronger but opposing SW and LW effects, locally totaling around 10 W m^{-2} during daylight hours and 30 W m^{-2} during nighttime. A simple estimate indicates that this single localized event may have generated a global-mean radiative forcing of around 7% of recent estimates of the persistent contrail radiative forcing due to the entire global aircraft fleet on a diurnally averaged basis. A single aircraft operating in conditions favorable for persistent contrail formation appears to exert a contrail-induced radiative forcing some 5000 times greater (in W m^{-2} km^{-1}) than recent estimates of the average persistent contrail radiative forcing from the entire civil aviation fleet. This study emphasizes the need to establish whether similar events are common or highly unusual for a confident assessment of the total climate effect of aviation to be made.



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Contrails warm the world more than aviation emissions

EARTH 29 March 2011

By Michael Marshall





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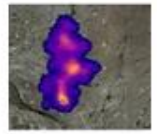


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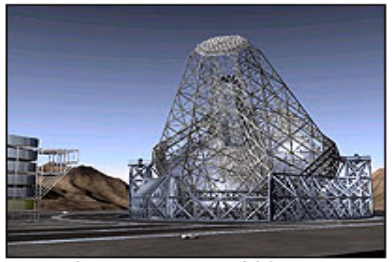
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Telescopes 'worthless' by 2050

By Paul Rincon
BBC News science reporter

Ground-based astronomy could be impossible in 40 years because of pollution from aircraft exhaust trails and climate change, an expert says.



Ground astronomy could be compromised if trends continue, experts say

Aircraft condensation trails - known as contrails - can dissipate, becoming indistinguishable from other clouds.

If trends in cheap air travel continue, says Professor Gerry Gilmore, the era of ground astronomy may come to an end much earlier than most had predicted.

Aircraft along with climate change will contribute to increased cloud cover.

The timescale is based on extrapolating air traffic growth figures. The BBC has learned that the calculations were made as part of preparations

> **"You either give up your cheap trips to Majorca, or you give up astronomy. You can't do both"**
> Gerry Gilmore, University of Cambridge

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Sensing Our Planet books (PDF)



by Laura Naranjo
October 11, 2013

Most people have, at some point in their lives, lain on their backs and gazed up at the sky, scouting for clouds that look like puppies or leaping dolphins. Scientists Sarah Bedka and Douglas Spangenberg scan the skies for thin white lines that could be contrails. Contrails are the linear clouds etched across the skies by high-altitude airplanes as more than 90,000 flights per day crisscross the globe.

Clouds from aircraft exhaust can blanket the sky.

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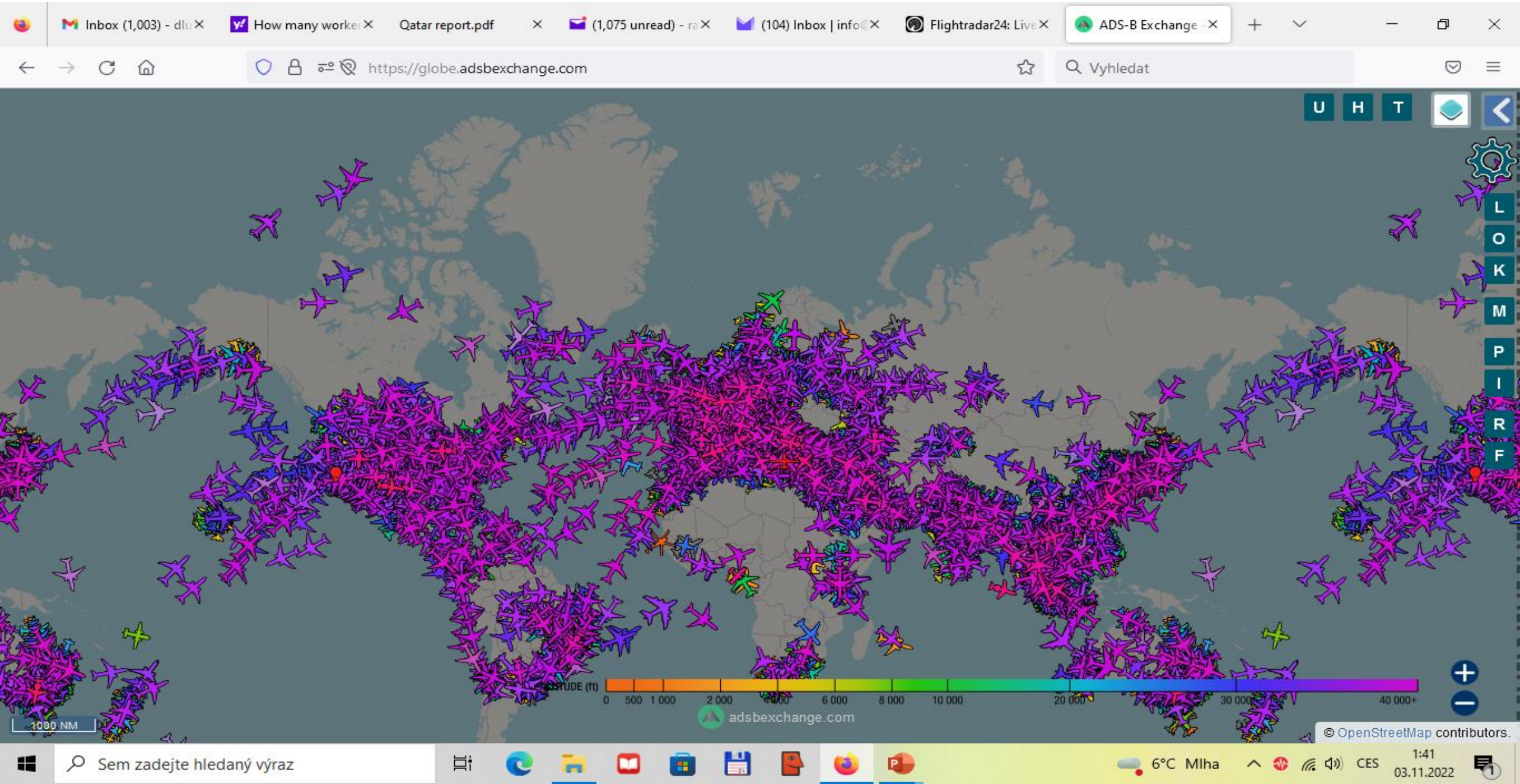
Whether natural or man-made, clouds can help warm or cool Earth: they reflect incoming sunlight and trap heat in the atmosphere. But until recently, scientists were uncertain how contrails contributed to each of these effects. Bedka and Spangenberg are trying to find out how much contrails warm the atmosphere, and possibly to mitigate their effects. They helped develop a method that harnessed satellite data to spot contrails and calculate how much warming they might cause. Contrails likely have a small effect now, but increasing air traffic may change that.

A trail of cloud

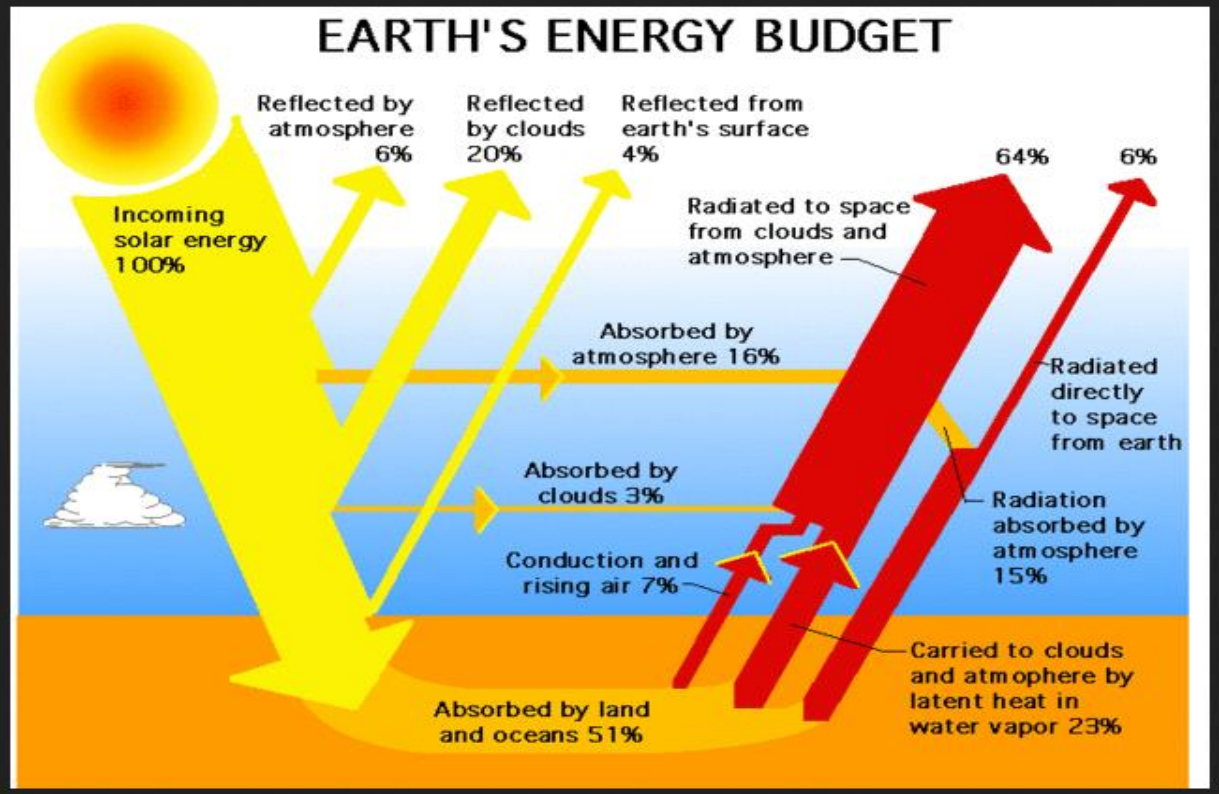
While it is easy to imagine that contrails are just dirty streams of pollutants billowing out of airplanes as they

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One of climate change's great mysteries is finally being solved

Story by Shannon Osaka • Dec 12, 2022 4 147 Comments

For over a decade, the largest scientific uncertainty about how the planet will respond to warming temperatures hasn't come from how much carbon dioxide will be soaked up by the ocean or absorbed by the trees. It's come, instead, from clouds.



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"We've found evidence of the amplifying impact of clouds on global warming," said Paulo Ceppi, a climate scientist at Imperial College London.

Scientists have long known that clouds have two primary influences on the global climate. First, clouds are reflective — their white surfaces reflect the sun's rays away from Earth, creating a cooling effect. (If the planet were suddenly devoid of these fluffy parasols, the planet would be roughly five times hotter than even the most disastrous global warming projections.) But clouds also create a warming effect — certain types of clouds insulate the Earth's radiation, keeping the planet warm much like carbon dioxide released from the burning of fossil fuels.

Which effect is stronger depends on the type of cloud. Cirrus clouds — high, wispy clouds visible in the distant atmosphere on relatively clear days — absorb and trap more radiation, warming the Earth. Stratus or stratocumulus clouds — plump, fluffy clouds that often hover over the ocean on overcast days — reflect more sunlight, cooling the Earth.



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atmosphere. "When they rise, their greenhouse effect, or warming effect, on the Earth tends to increase," Myers said.

That result has been known for about a decade, and indicates that clouds are likely to *amplify* global warming. But just in the past few years, researchers have also discovered that the number of low-level stratus or stratocumulus clouds are expected to decrease as the planet continues to warm. One study, in the journal Nature Climate Change, used satellite observations to discover how cloud formation is affected by ocean temperatures, wind speed, humidity and other factors — and then analyzed how those factors will change as the world warms.

"We concluded that as the ocean warms, the low-level clouds over the oceans tend to dissipate," said Myers, one of the authors of the study. That means that there are fewer clouds to reflect sunlight and cool the earth — and the change in low-level clouds will also amplify global warming.



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NAOPAK ROZŠIŘUJÍ SE CIRRUS MRAKY, KTERÉ VEDOU K DALŠÍMU OTEPLOVÁNÍ PLANETY

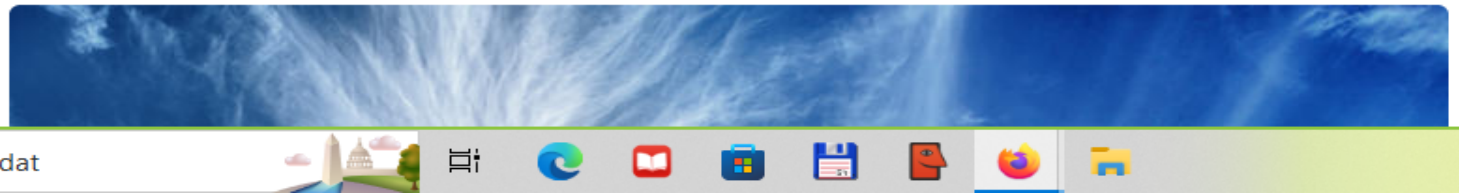
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But in recent years, scientists have gained increasing clarity on what will happen — and what is already happening — to clouds as the planet warms.

First, the high, wispy cirrus clouds that trap the Earth's radiation are expected to shift upward in the atmosphere, to lower temperature zones. Thanks to a complicated relationship between clouds and the radiation of the Earth, that will increase the amount of radiation that the cirrus clouds trap in the atmosphere. "When they rise, their greenhouse effect, or warming effect, on the Earth tends to increase," Myers said.

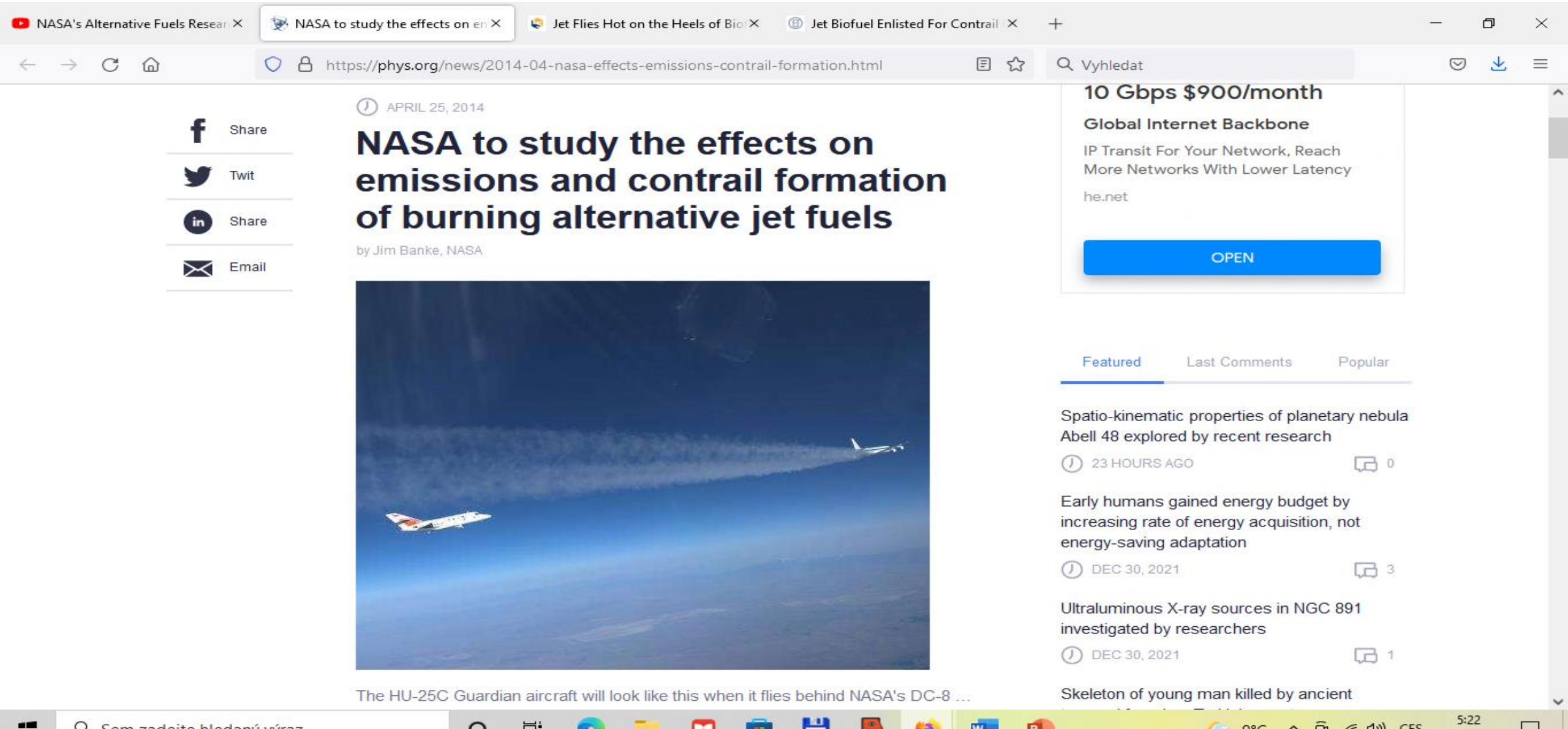
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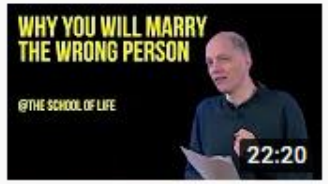
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Co-Authored Publications:

- Brasseur, G. P., *et al.* (2017), Impact of Aviation: FAA's Aviation Climate Change Research Initiative (ACCRI) Phase II, *Bull. Am. Meteorol. Soc., 98*, 561-583, doi:10.1175/BAMS-D-13-00089.1.
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„Rádi bychom měli více mraků způsobené letadly během dne a žádné v noci.“

Citizen Inquiry of Contrails - Jim
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11. What do you think Ulrich Schumann meant when he said “less warming, more cooling contrails; predictable for operational control?”

Not sure where he says this and in what context. Contrails during day cause cooling because of reflecting of sunlight back into space. During night, they trap infrared heat causing heating. So it is a balance between the two time intervals. We would like to have more CICs during day and none during night.

12. What are your thoughts on solar radiation management and the (potential) use of fuel sulfur content geoengineering?

We are in an era of increasing carbon dioxide whose concentration has gone up from 300 ppm to 400 ppm in a relatively short time of ~50 years. This is due to anthropogenic activities. We know CO2 is a greenhouse gas and the temperature will therefore increase unless we reduce CO2 in the atmosphere. Another way to control this effect of global warming is to decrease solar energy

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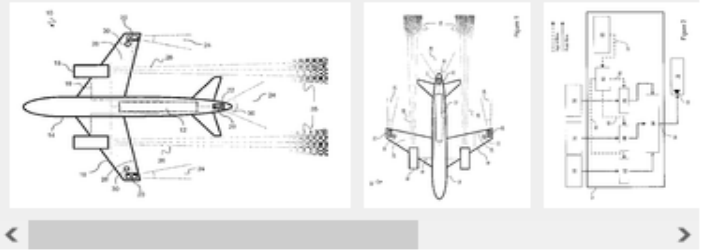
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Fuel system

Abstract

A fuel system (**12**) comprising a vapor trail detection sensor (**20**) configured to generate a first signal (**28**) which indicates the optical depth of a vapor trail (**35**). A control unit (**40**) is provided responsive to the first signal (**28**) and configured to generate a second signal (**80**) in dependence upon the first signal (**28**). The second signal (**80**) defines a percentage of at least one of a first fuel composition and second fuel composition required to produce a resultant fuel composition. At least one regulator (**42**) is provided configured to receive and be responsive to the second signal (**80**) and regulate the percentage of first and second fuel composition required to produce the resultant fuel composition.

Images (5)



Classifications

US9518965B2
United States

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Inventor: Peter SWANN

Current Assignee : Rolls Royce PLC

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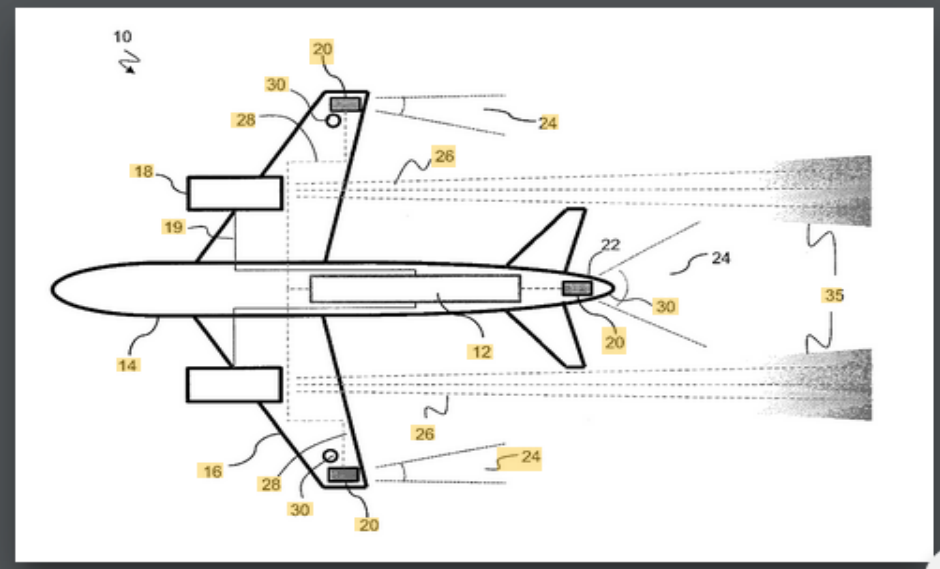
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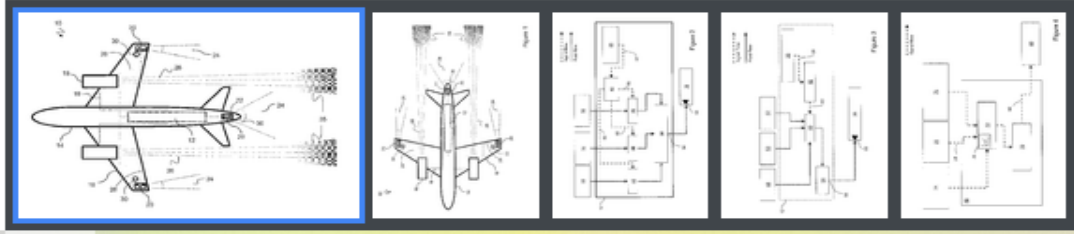
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Systém, který komunikuje a míchá požadovanou hodnotu zplodin sazí

US9518965B2 - Fuel system - Go

https://patents.google.com/patent/US9518965B2/en

Vyhledat

Vapour trails are artificial clouds that are visible trails of condensed water vapour exhausted by vehicles' engines. They may be formed as warm, moist exhaust gas mixes with ambient air, and arise from the precipitation of microscopic water droplets or, if the air is cold enough, tiny ice crystals. The term "vapour trails" is intended to refer both to condensation trails (that is to say "contrails") from aircraft and to water and/or ice precipitation in or attributable to the exhaust plumes from engines of other machines and vehicles, such as ships.

It may be undesirable for some ships to produce vapour trails in certain situations. For example, a military ship producing a vapour trail from its exhaust funnels is highly visible from the air and hence much easier to target.

It is known that, depending on the timescale considered, the climate-warming impact of aircraft exhaust vapour trails and resulting vapour trail-cirrus is of a magnitude similar to, or perhaps even greater than, that of the CO_2 emitted by aircraft, and therefore represents a significant element of aviation's total climate impact. It is also known that an aircraft vapour trail, once formed, will persist in ambient air which is supersaturated with respect to ice, leading to greater climate-warming impact as a result of the increase in longevity of the vapour trail.

US2010/0122519 describes the use of ultra-low

a vapor trail detection sensor configured to generate a first signal which indicates an optical depth of a vapor trail;

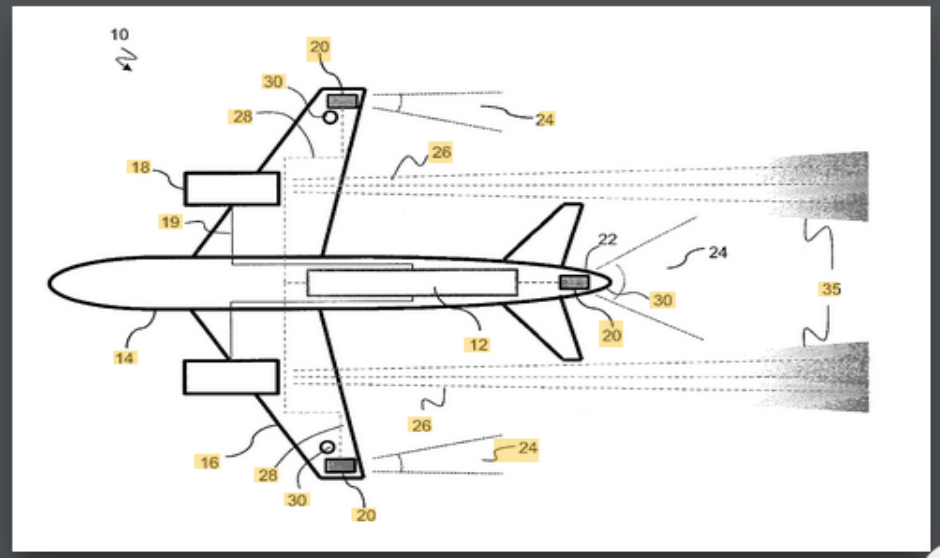
a control unit responsive to the first signal and configured to generate a second signal in dependence upon the first signal which defines a percentage of at least one of a first fuel composition and a second fuel composition required to produce a resultant fuel composition; and

at least one regulator configured to receive and be responsive to the second signal and regulate the percentage of the at least one of the first fuel composition and the second fuel composition required to produce the resultant fuel composition that controls the optical depth of the vapor trail,

wherein the control unit comprises a blending ratio calculator configured to calculate the required resultant fuel composition as a function of desired soot emission index determined by a soot requirement generator which communicates a value of soot emission index to the blending ratio calculator.

2. A fuel system as claimed in claim 1 wherein the control unit is operable to determine a likelihood of persistence of

Image 1 of 5



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07.09.2022

US9518965B2 - Fuel system - Go
https://patents.google.com/patent/US9518965B2/en
Vyhledat

introducing black carbon into the aircraft engine effluent (U.S. Pat. No. 3,289,409A) results in additional emissions of a species (black carbon) which is known to have an environmental warming impact.

The strategy of avoiding regions prone to vapour trail formation and/or persistence through the routing of aircraft around, above and/or below such regions has the disadvantage that it increases workload for air traffic control and/or pilots, reduces airspace capacity and, in the case of routing around regions prone to vapour trail formation or persistence (which can be tens or hundreds of kilometres in horizontal extent), the length of the route followed by the aircraft is increased, resulting in a fuel-burn penalty. Additionally in the case of climbing so as to fly above regions prone to vapour trail formation or persistence, additional fuel is burned to provide the increased thrust necessary to perform the climb. If aircraft are scheduled to fly below regions prone to vapour trail formation or persistence, additional fuel may be burned subsequently if the aircraft is to return to its optimal cruising altitude once the aircraft has passed the avoided region.

In the case either of climbing so as to fly above or of descending so as to fly below regions of air susceptible to vapour trail formation and/or persistence, the aircraft will be required to fly at an altitude that may differ from the optimal cruise altitude given the aircraft's current weight. In other

or more of vapor trail optical depth and/or measured values of ambient temperature, ambient pressure and/or ambient humidity.

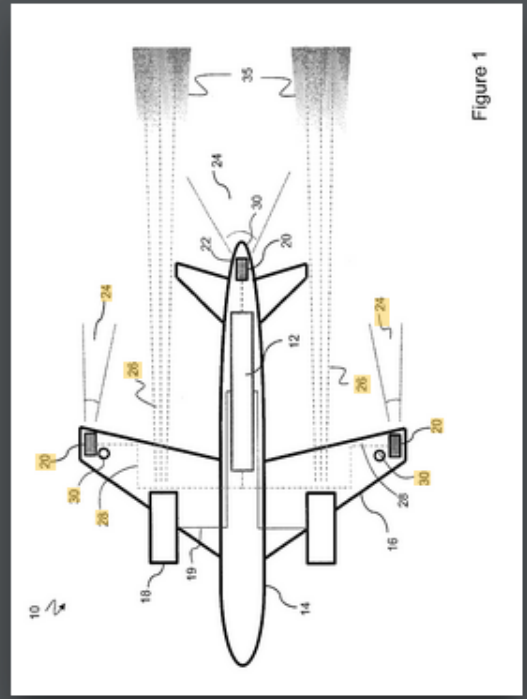
9. A fuel system as claimed in claim 8 wherein the soot requirement generator is in communication with the vapor trail detection sensor to receive vapor trail optical depth data and/or a sensor to receive the one or more measured values.

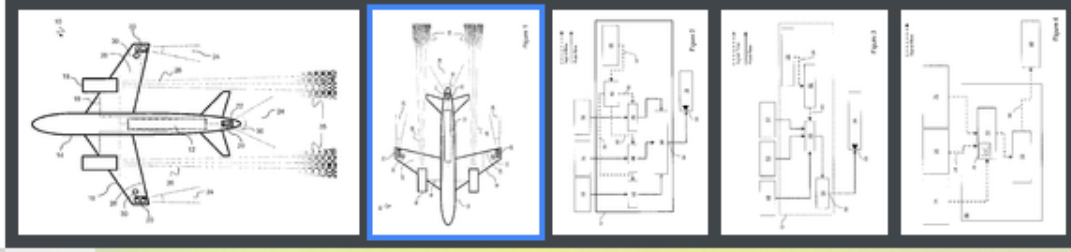
10. A fuel system as claimed in claim 1 wherein the soot requirement generator is in communication with a second sensor to receive a value for instantaneous measured actual values of soot emission index generated by an engine.

11. A fuel system as claimed in claim 1 wherein the soot emission index is derived from a look up table or database in dependence upon one or more of the first fuel composition and the second fuel composition, combustion characteristics of an engine and/or engine operating point.

12. A fuel system as claimed in claim 1 wherein the soot requirement generator determines a value of desired soot emission index which would generate

Image 2 of 5





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US20110101166A1 - Control unit

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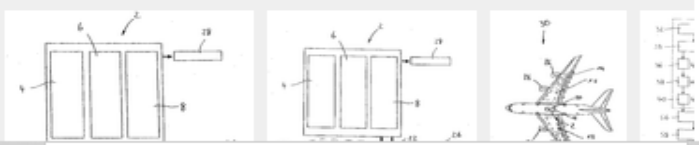
Google Patents

Control unit and method for controlling the supply of a vehicle with multiple fuels

Abstract

A control unit for controlling the supply of a vehicle having at least one internal combustion engine with multiple fuels has at least one input means for supplying optimization parameters, fuel parameters, and operational data, at least one storage unit for storing the optimization parameters, the fuel parameters, and the operational data, and at least one computing unit. The control unit is adapted for being connected to at least one first supply apparatus for supplying a first fuel to the internal combustion engine and to at least one second supply apparatus for supplying a second fuel to the internal combustion engine, and of controlling a first mass flow of supplied first fuel and a second mass flow of supplied second fuel. The computing unit optimizes the ratio of first mass flow and second mass flow for all operational phases of the vehicle to fulfill the specified optimization parameters.

Images (5)



US20110101166A1
United States

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Inventor: Malte SCHWARZE, Andreas Westenberger

Current Assignee : Airbus Operations GmbH

Worldwide applications

2009 • DE 2010 • US

Application US12/940,091 events

2009-11-05 • Priority to US25828109P

2010-11-05 • Application filed by Airbus Operations GmbH

Image 3 of 5

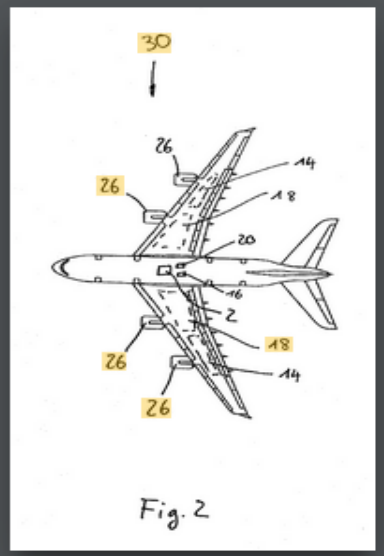
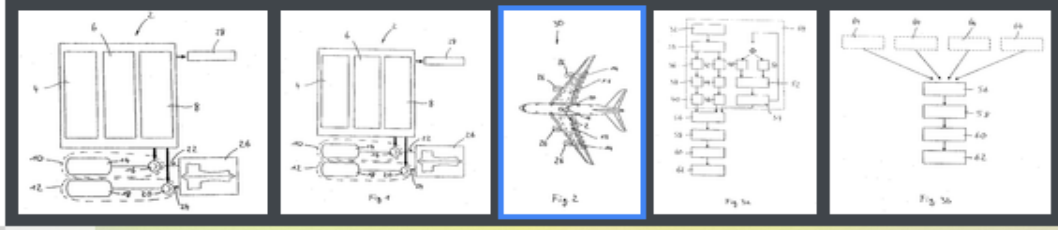


Fig. 2



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US20110101166A1 - Control unit

https://patents.google.com/patent/US20110101166A1/en

Vyhledat

is hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] The invention relates to a control unit for controlling the supply of a vehicle with multiple fuels, a method for controlling the supply of a vehicle with multiple fuels, and an aircraft, which is adapted for being operable with multiple fuels.

[0003] Conventional fuels based on hydrocarbon, such as jet fuel, currently represent the backbone of fuel supply in aviation. However, it is obvious that existing fossil resources are inherently restricted, so that it must be expected that in future fuels such as jet fuel will no longer be able to be obtained and used at acceptable prices or in sufficient quantities. As a result of this development, it is unavoidable that alternative fuels will find their way into aviation. However, until such alternative fuels may be extensively provided, it is to be expected that multiple types of fuel will only be able to be provided in varying quantities at various locations worldwide, namely fuels based on hydrocarbons and alternative, future fuels. Until complete availability of alternative fuels is provided, it could be advantageous, in a transition phase, for aircraft and other vehicles to be designed in general for the purpose of being able to be operated using two different fuel types.

and operational data having data of operational phases of a mission to be performed by the vehicle;

at least one storage unit for storing the optimization parameters, the fuel parameters, and the operational data; and

at least one computing unit;

wherein the at least one control unit is adapted:

for being connected to at least one first supply apparatus for supplying a first fuel to the at least one internal combustion engine and to at least one second supply apparatus for supplying a second fuel to the at least one internal combustion engine;

for controlling a first mass flow of the supplied first fuel and a second mass flow of the supplied second fuel; and

for using the at least one computing unit, establishing a ratio of first mass flow and second mass flow for one or more operational phases of the vehicle to fulfill the optimization parameters in consideration of the fuel parameters, storing the optimization parameters in the storage unit, and implementing the optimization parameters during the performance of the operational phases by controlling the first

Image 3 of 5

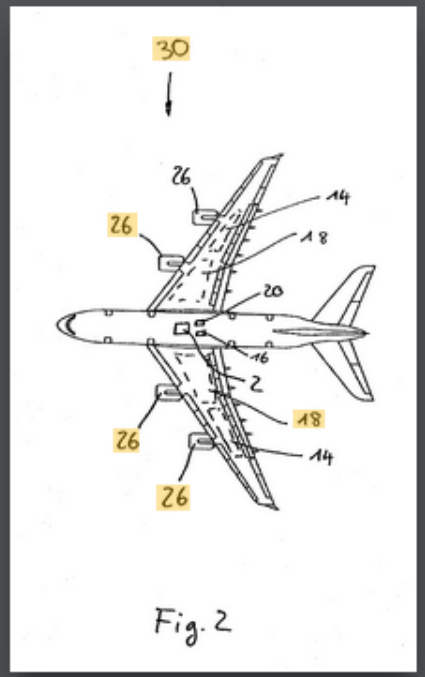
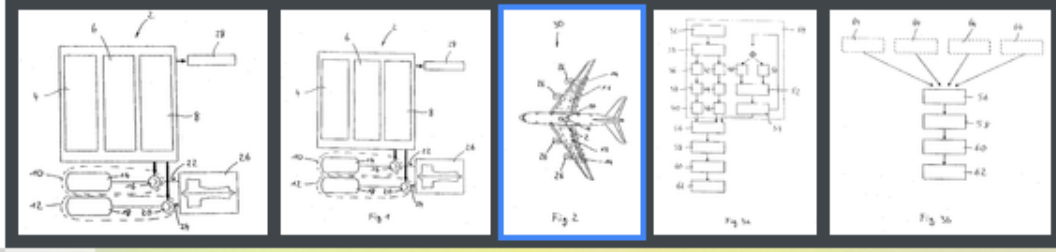


Fig. 2



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KLIMATICKÉ INŽENÝRSTVÍ

Záměrná rozsáhlá manipulace planetárního prostředí s cílem čelit antropogenní změně klimatu
SRM (řízení solární radiace)
SAI (injektáž aerosolů do stratosféry)

Teraformování
NASA (Hazard s nebesy str. 335) – klima jako malá loďka

1874

Few in the civil sector fully understand that geoengineering is primarily a military science and has nothing to do with either cooling the planet or lowering carbon emissions (Report, 6 February). While seemingly fantastical, weather has been weaponised. At least four countries - the US, Russia, China and Israel - possess the technology and organisation to regularly alter weather and geologic events for various military and black operations, which are tied to secondary objectives, including demographic, energy and agricultural resource management.

Indeed, warfare now includes the technological ability to induce, enhance or direct cyclonic events, earthquakes, draught and flooding, including the use of polymerised aerosol viral agents and radioactive particulates carried through global weather systems. Various themes in public debate, including global warming, have unfortunately been subsumed into much larger military and commercial objectives that have nothing to do with broad public environmental concerns. These include the gradual warming of polar regions to facilitate naval navigation and resource extraction.

Matt Andersson

Former executive adviser, aerospace & defence, Booz Allen Hamilton, Chicago

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„Málo lidí si uvědomuje, že geoinženýrství je primárně záležitostí armády a nemá nic co dočinění s ochlazováním planety nebo snížením uhlíkových emisí. Alespoň čtyři země, USA, Rusko, Čína a Izrael – mají technologie a schopnost pravidelně měnit počasí a geologické události s cílem umožnit různé armádní a tajné operace…“ *Bývalý hlavní poradce věhlasné armádní firmy*

VYPOUŠTĚNÍ CHEMICKÝCH ČÁSTIC (OXIDY SÍRY A HLINÍKU) DO STRATOSFÉRY – zdroj UNEP

The UN Discusses Darkening Th

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20 billion USD per year per 1°C of cooling[25].

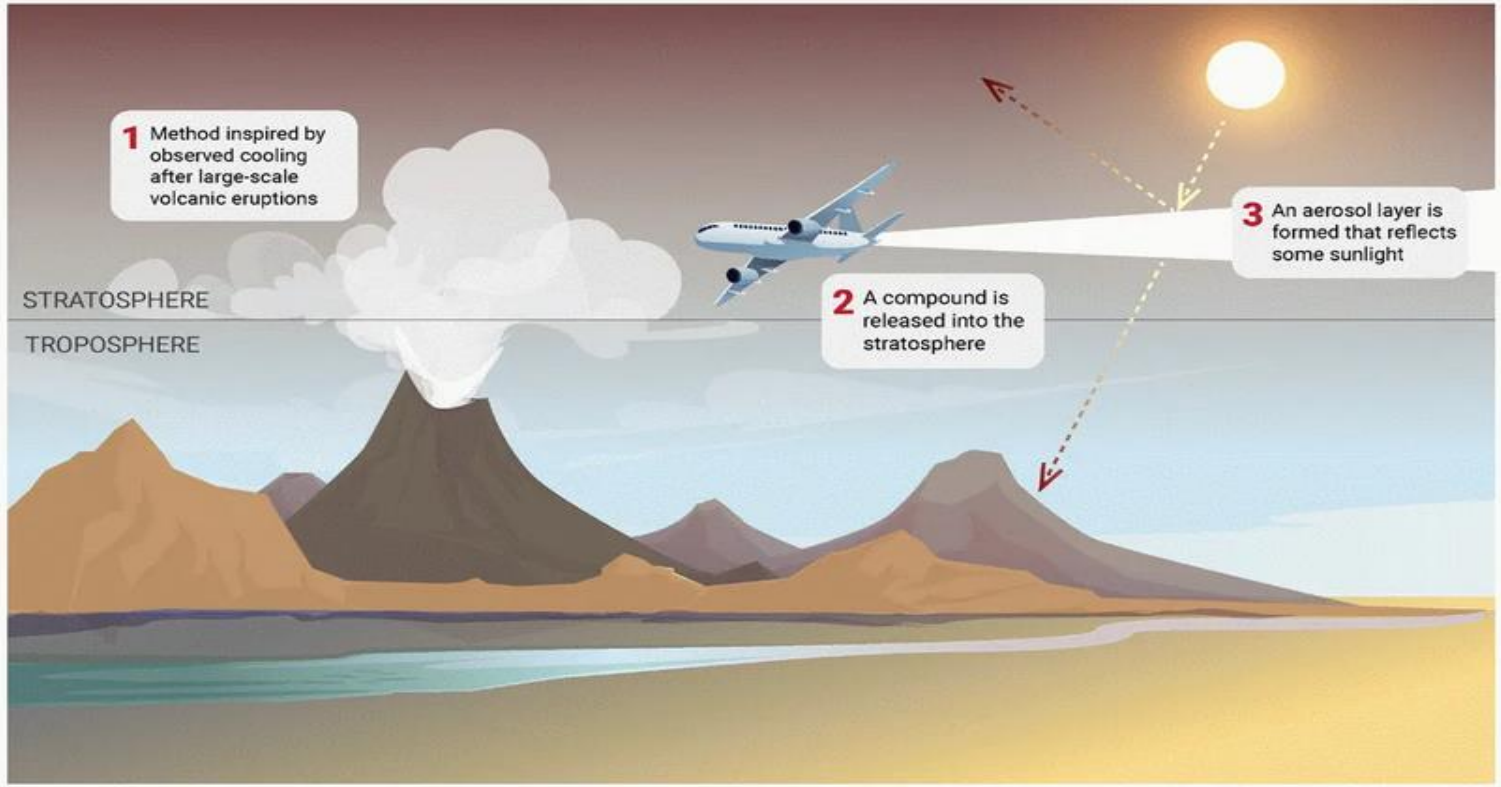
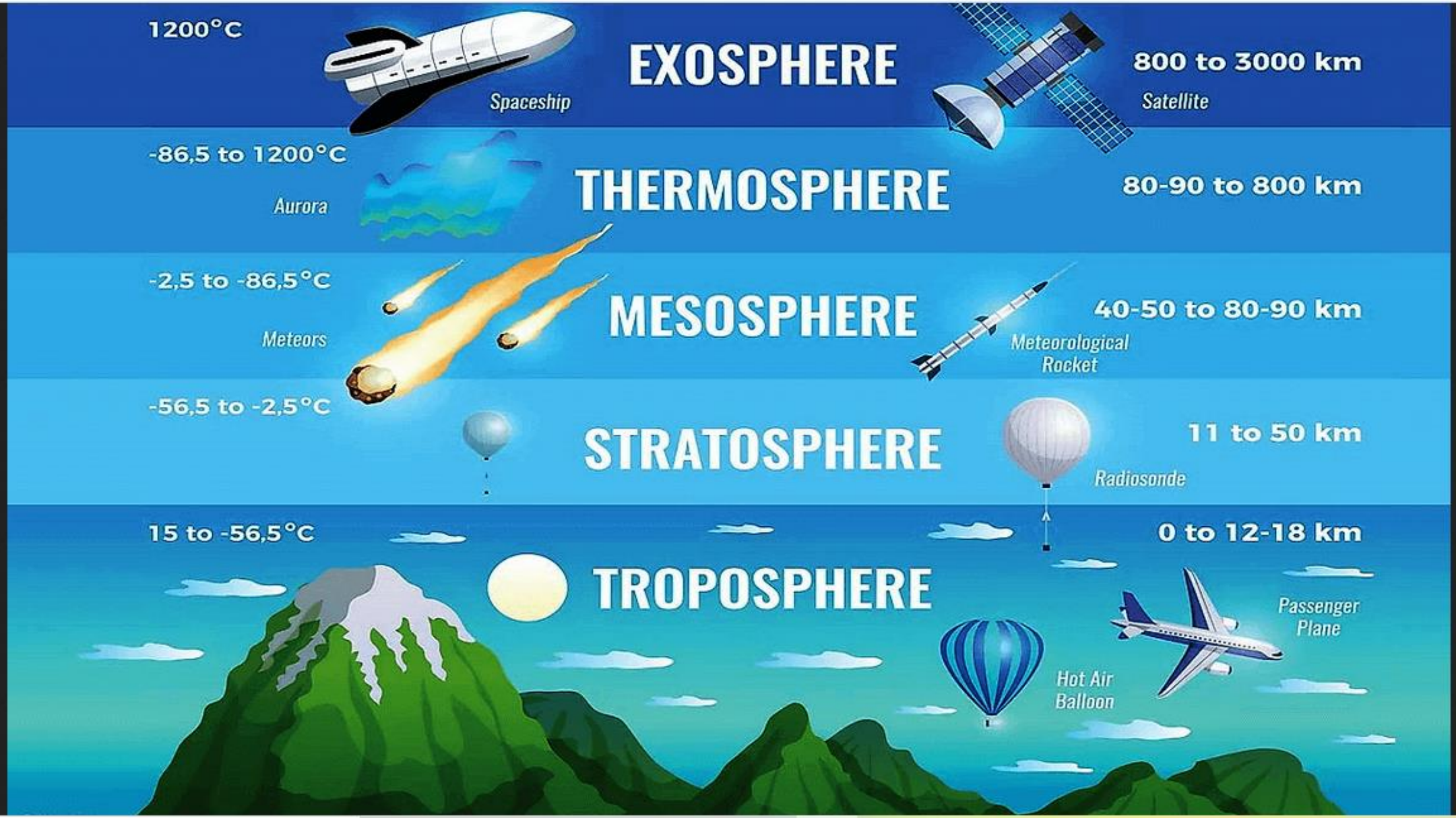


FIGURE 3: Illustration of the most studied SRM approach, and perhaps the most feasible, stratospheric aerosol injection.
Source: Adapted from Edwards 2019[26]; Lawrence et al 2018[27]; Caldeira, Bala and Cao 2013[28].

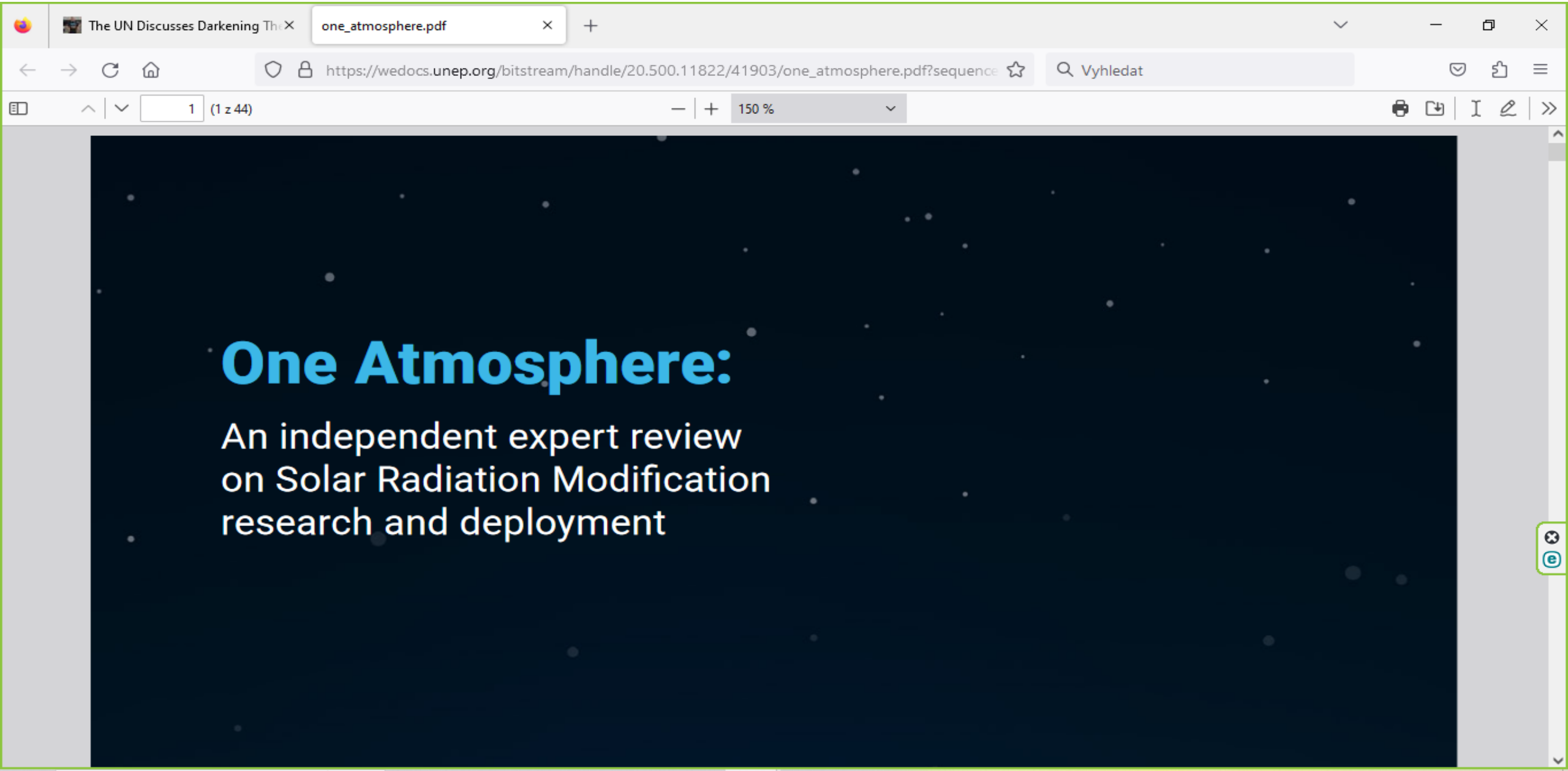
Source: UNEP Document

Geoengineering: Injecting Aeros
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VZRŮSTAJÍCÍ PODPORA SRM V ORGANIZACI OSN



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One Atmosphere:

An independent expert review on Solar Radiation Modification research and deployment



UN environment programme

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09.05.2023



Make no mistake: there are no quick fixes to the climate crisis. Increased and urgent action to slash greenhouse gas emissions and invest in adapting to the impacts of climate change is immutable. Yet current efforts remain insufficient. As a result, increasing voices are calling for and preparing alternative "emergency" options to keep global temperature rise in check.

Among actions under examination is Solar Radiation Modification (SRM), and in particular Stratospheric Aerosol Injection (SAI) – which aims to cool the planet by reflecting sunlight back into space. SRM is a complex, controversial and under-studied group of technologies. Yet some scientists and companies are accelerating towards deployment: empirical research and experimentation are being pursued, and technologies and schemes are being discussed at the highest levels, without a full understanding of the implications. This is contrary to the precautionary principle, which must be applied in the case of a technology that would modify the atmosphere.

To gain a better understanding of the potential risks of SRM, the United Nations Environment Programme (UNEP) convened a multidisciplinary expert panel to undertake a rapid review of the state of scientific research on SRM – keeping in mind climate, stratospheric ozone, environmental, human health and social aspects. The review outlines a range of informed views, and includes issues of governance of small-scale outdoor experiments, technology development, financing and governance of operational deployment.

The review finds that there is little information on the risks of SRM and limited literature on the environmental and social impacts of these technologies. Even as a temporary response option, large-scale SRM deployment is fraught with scientific uncertainties and ethical issues. The evidence base is simply not there to make informed decisions.

Critical unresolved issues around equity, ethics and consent are evident. There needs to be significantly more scientific research into the potential impacts of SRM technologies on low- and middle-income countries, which are on the frontlines

NYNÍ JE ČAS NA ZAHÁJENÍ GEO-INŽENÝRSTVÍ

The Time for Geoengineering Is

https://www.foreignaffairs.com/world/time-geoengineering-now-climate-change

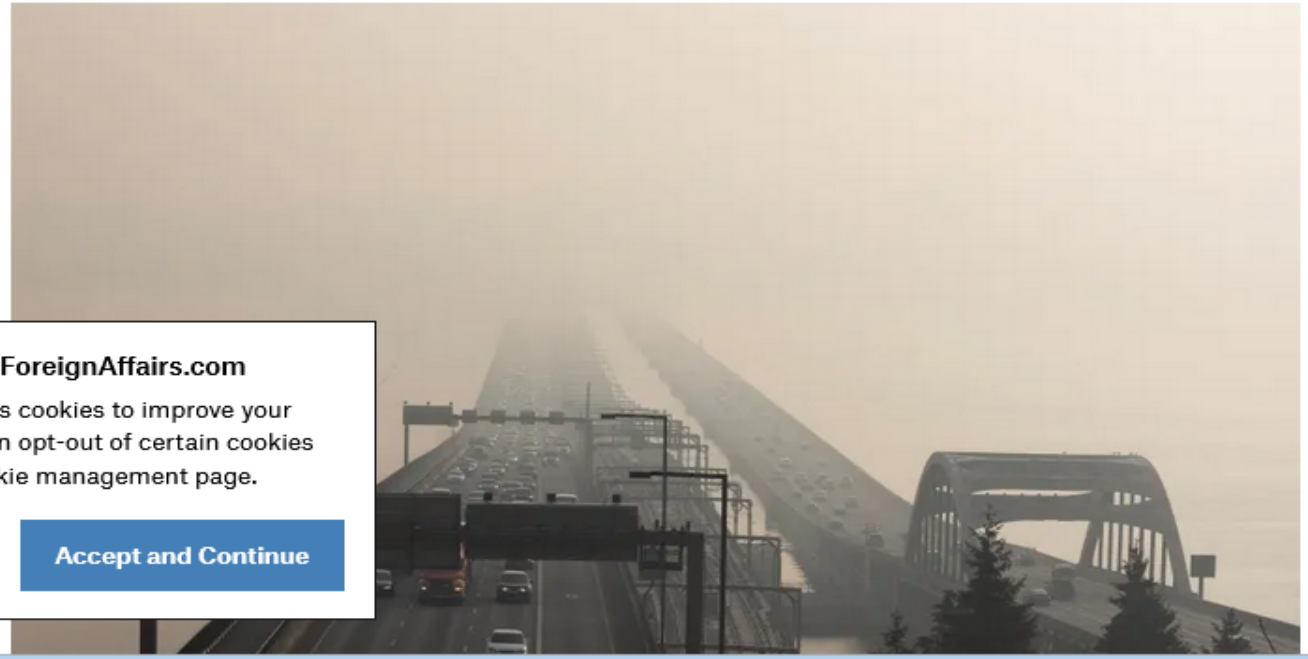
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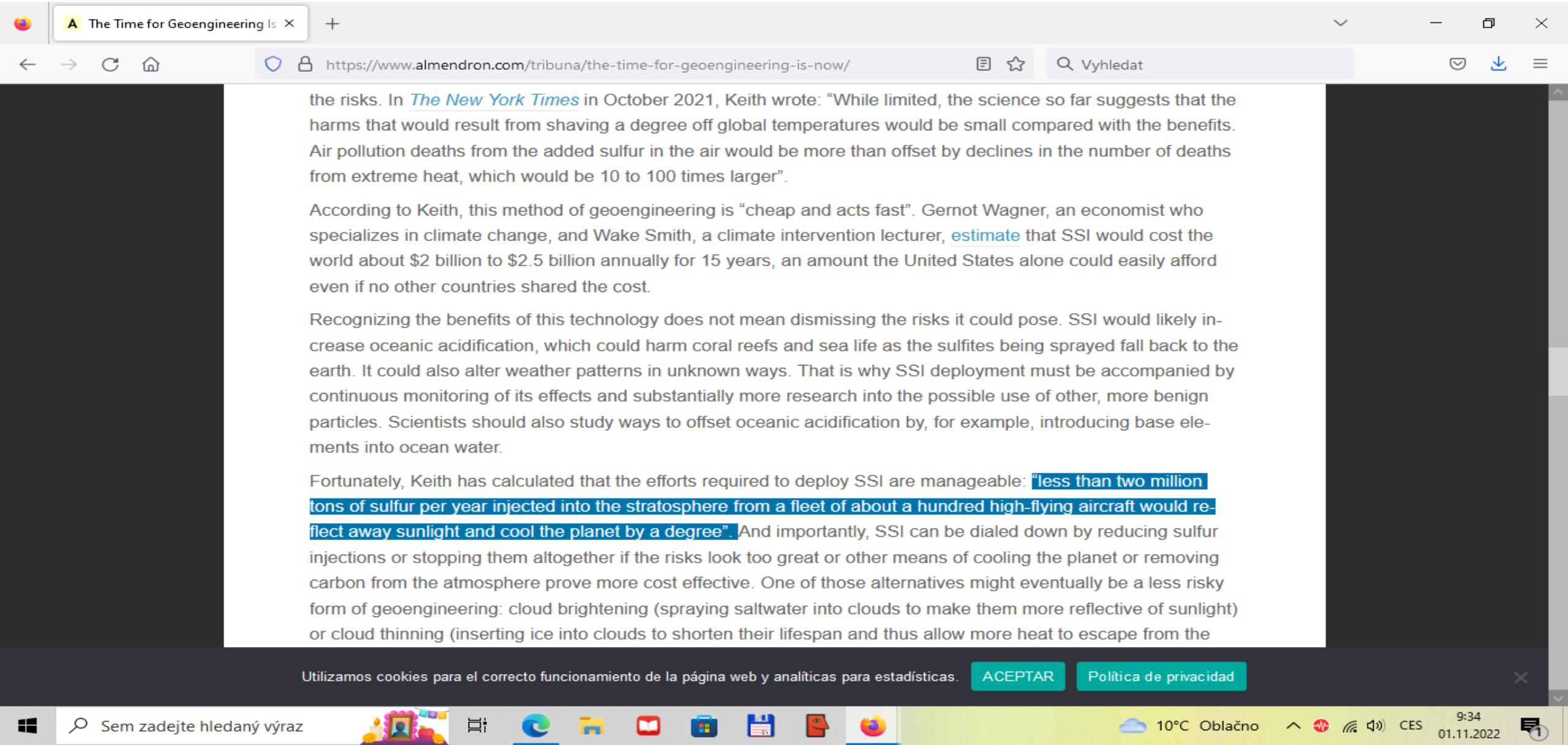
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Geoengineering: Injecting Aero

https://www.forbes.com/sites/arielcohen/2022/05/12/geoengineering-injecting-aerosols-into-the

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suggest geoengineering may reduce, halt, or even reverse the effects of greenhouse gas emissions, these models are admittedly limited and lack external validity.

While some, including Microsoft's MSFT +3.4% billionaire founder Bill Gates, remain exuberantly optimistic, hard science does not currently back up their ideals. Proponents point to costs, indicating that implementing SAI would cost less than $20 billion annually, a small portion of the estimated $275 trillion needed to decarbonize the global economy by 2050.



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PROJEKT SATAN VE VELKÉ BRITÁNII

Researchers launched a solar ge

https://www.technologyreview.com/2023/03/01/1069283/researchers-launched-a-solar-ge

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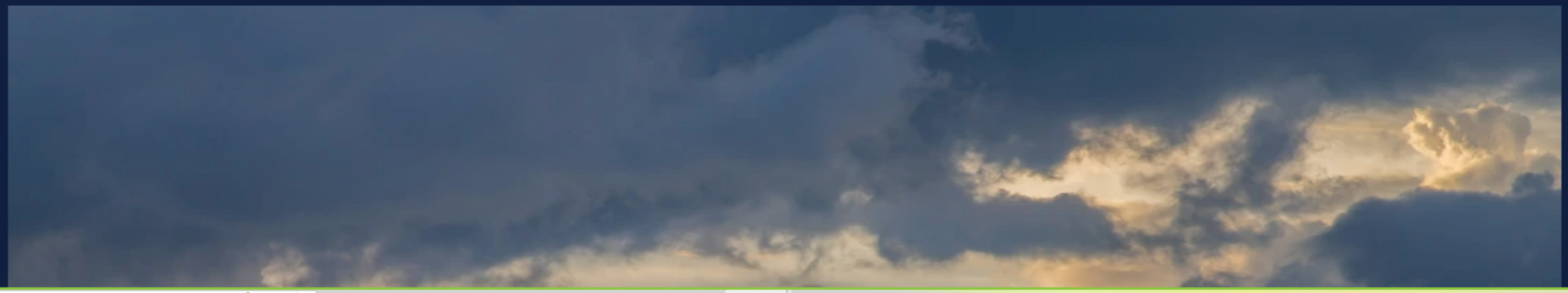
CLIMATE CHANGE

Researchers launched a solar geoengineering test flight in the UK last fall

The experiment, largely designed to test equipment, took place despite deep concerns about the technology.

By James Temple

March 1, 2023



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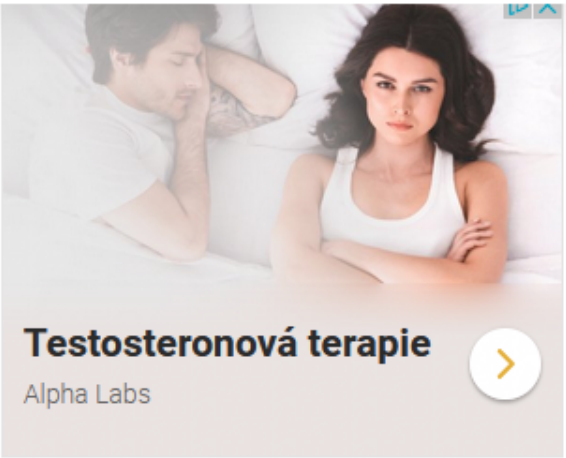
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Rather, the stated goal was to evaluate a low-cost, controllable, recoverable balloon system, according to details obtained by MIT Technology Review. Such a system could be used for small-scale geoengineering research efforts, or perhaps for an eventual distributed geoengineering deployment involving numerous balloons.

The "Stratospheric Aerosol Transport and Nucleation," or SATAN, balloon systems were made from stock and hobbyist components, with hardware costs that ran less than $1,000.

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Andrew Lockley, an independent researcher previously affiliated with University College London, led the effort last fall, working with European Astrotech, a company that does engineering and design work for high-altitude balloons and space propulsion systems.

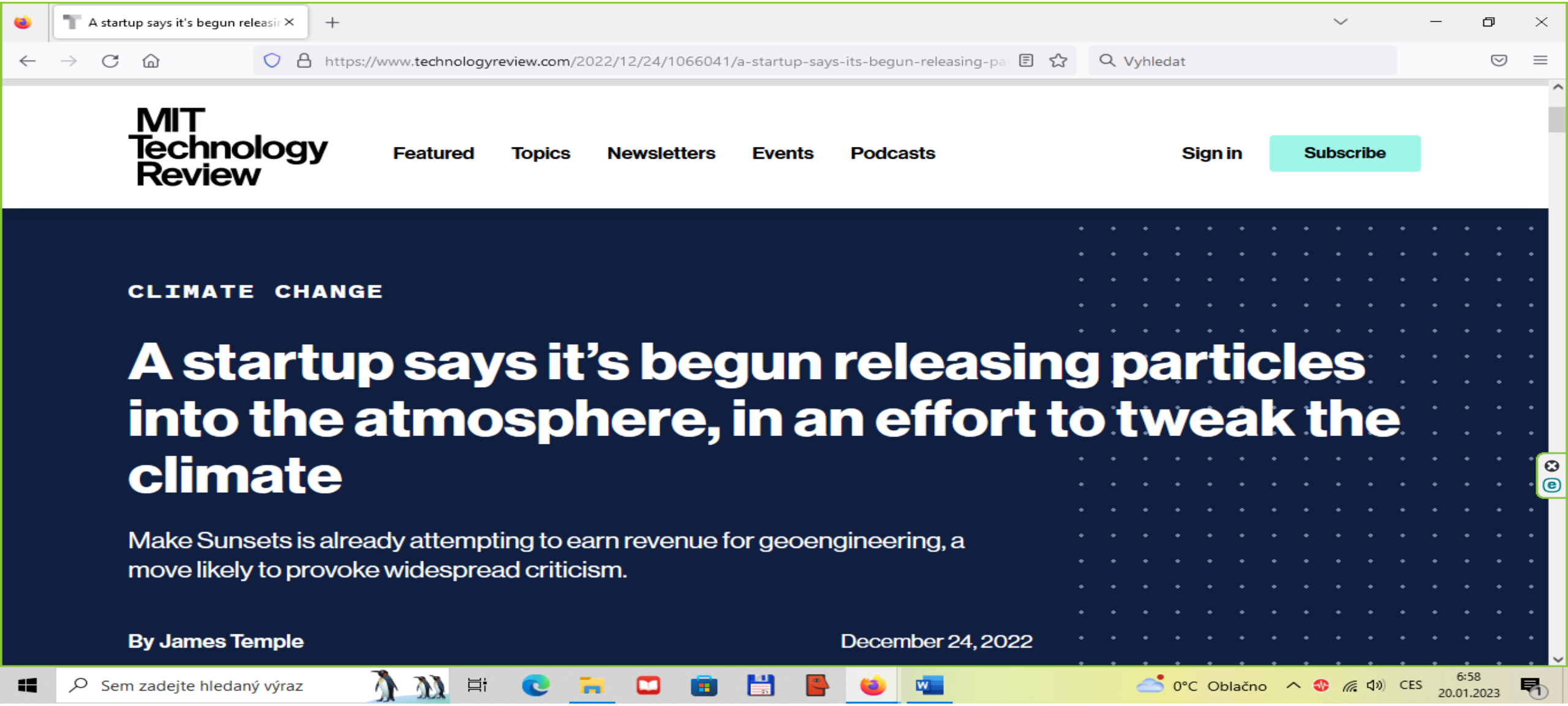


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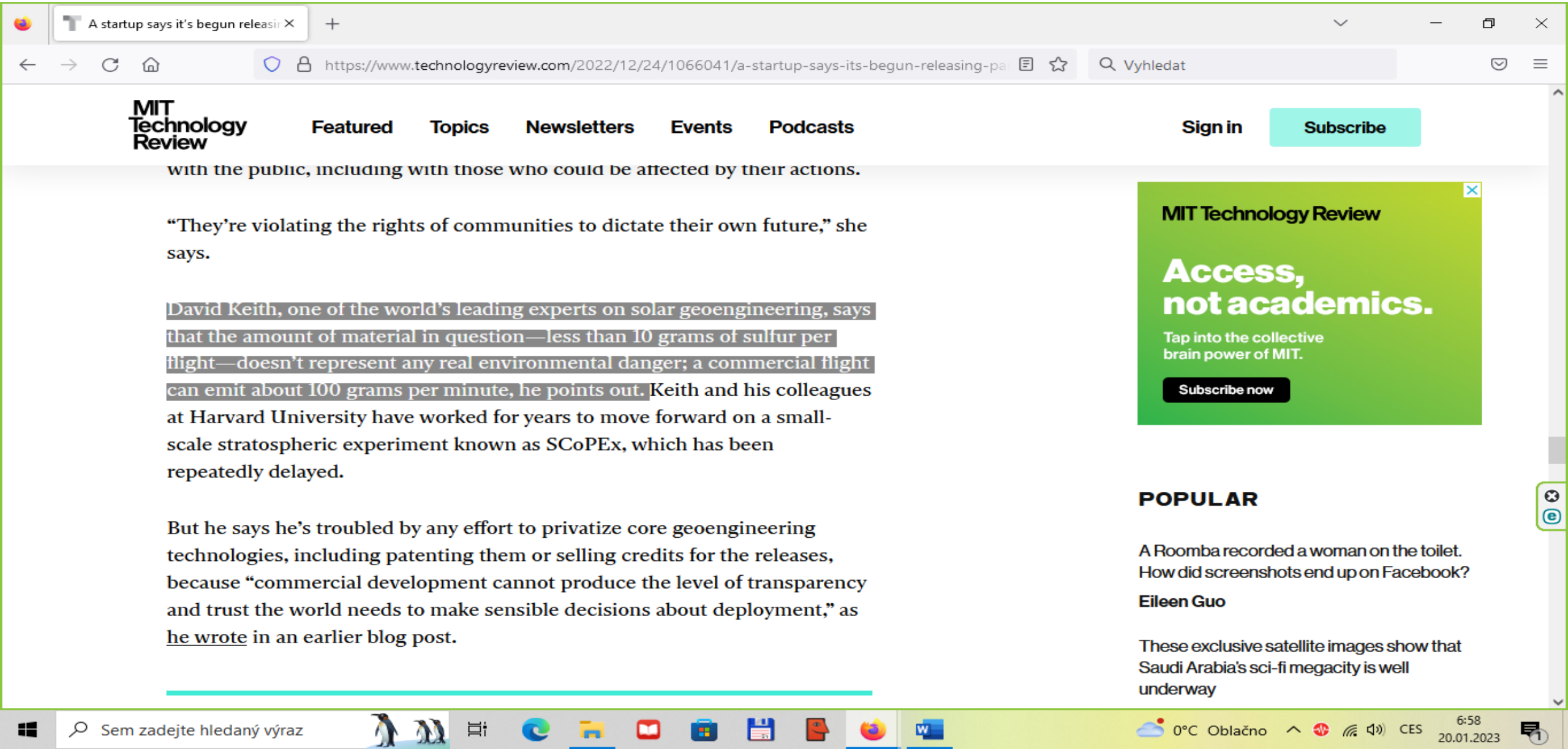
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with the public, including with those who could be affected by their actions.

"They're violating the rights of communities to dictate their own future," she says.

David Keith, one of the world's leading experts on solar geoengineering, says that the amount of material in question—less than 10 grams of sulfur per flight—doesn't represent any real environmental danger; a commercial flight can emit about 100 grams per minute, he points out. Keith and his colleagues at Harvard University have worked for years to move forward on a small-scale stratospheric experiment known as SCoPEx, which has been repeatedly delayed.

But he says he's troubled by any effort to privatize core geoengineering technologies, including patenting them or selling credits for the releases, because "commercial development cannot produce the level of transparency and trust the world needs to make sensible decisions about deployment," as he wrote in an earlier blog post.

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David Keith

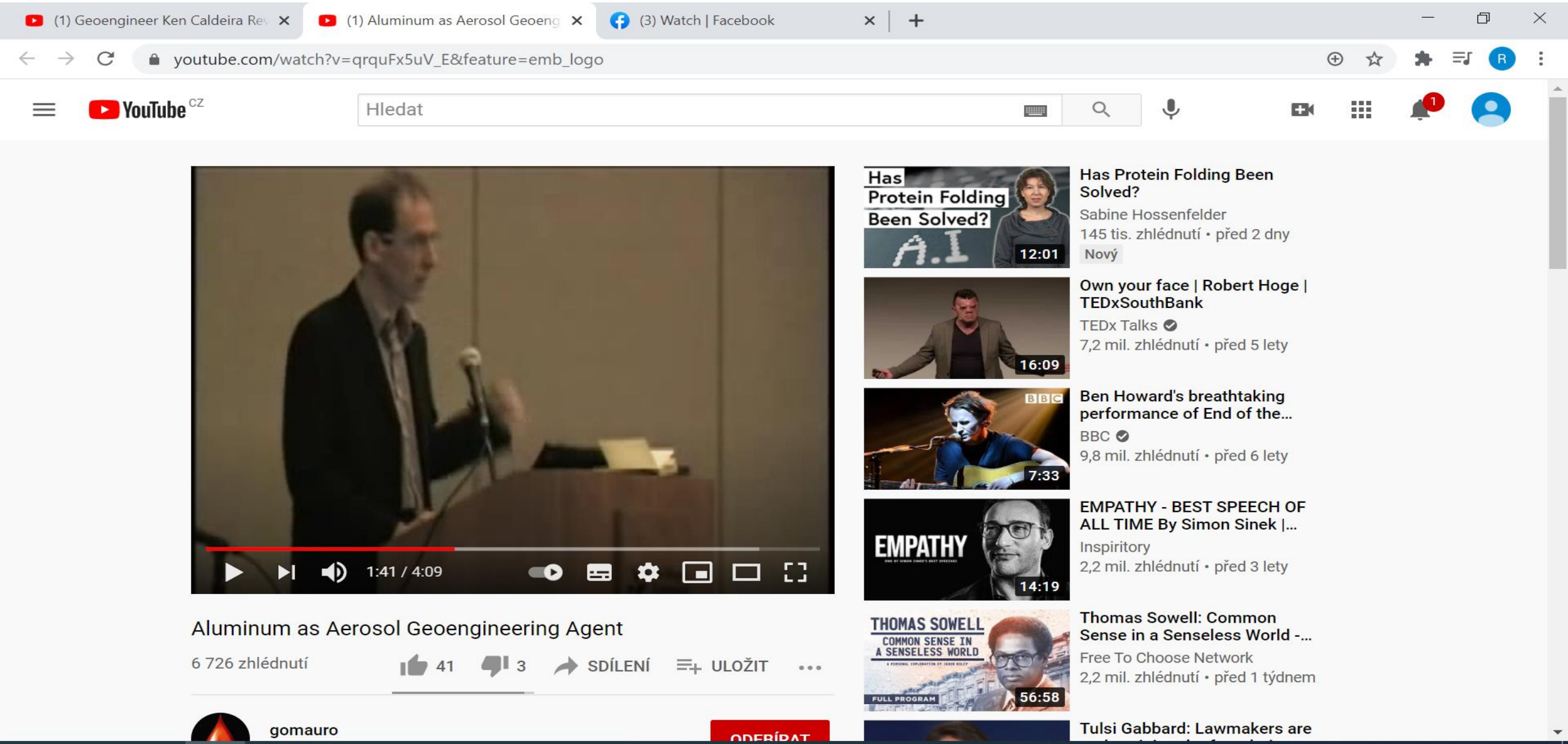
Gordon McKay Professor of Applied Physics, Harvard John A. Paulson School of Engineering and Applied Sciences

Professor of Public Policy, Harvard Kennedy School



David Keith has worked near the interface between climate science, energy technology, and public policy for twenty-five years. He took first prize in Canada's national physics prize exam, won MIT's prize for excellence in experimental physics, and was one of TIME magazine's Heroes of the Environment. David is Professor of Applied Physics at the Harvard School of Engineering and Applied Sciences and Professor of Public Policy at the Harvard Kennedy School, and founder of Carbon Engineering, a company developing technology to capture CO2 from

„Bude nutné do ovzduší vypustit milióny tun sloučenin síry či hliníku“



„Je možné, že geoinženýrství zahubí desetitisíce lidí.“

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Bill Gates Will Have to Wait a While to Block the Sun

Scientists have postponed the billionaire-backed study of the controversial technology called solar geoengineering.

BY CAROLINE DELBERT PUBLISHED: APR 12, 2021





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A subpolar-focused stratospher
https://iopscience.iop.org/article/10.1088/2515-7620/ac8cd3
Vyhledat

A subpolar-focused stratospheric aerosol injection deployment scenario

Wake Smith[1,2], Umang Bhattarai[9,3], Douglas G MacMartin[4], Walker Raymond Lee[4], Daniele Visioni[4], Ben Kravitz[5,6] and Christian V Rice[7,8]

Published 15 September 2022 • © 2022 The Author(s). Published by IOP Publishing Ltd
Environmental Research Communications, Volume 4, Number 9
Citation Wake Smith *et al* 2022 *Environ. Res. Commun.* 4 095009

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Abstract

Stratospheric aerosol injection (SAI) is a prospective climate intervention technology that would seek to abate climate change by deflecting back into space a small fraction of the incoming solar radiation. While most consideration given to SAI assumes a global intervention, this paper considers an alternative scenario whereby SAI might be deployed only in the subpolar regions. Subpolar deployment would quickly envelope the poles as well and could arrest or reverse ice and permafrost melt at high latitudes. This would yield global benefit by retarding sea level rise. Given that effective

Abstract
Abbreviation:
1. Introduction
2. SAI subpolar deployment scenario
3. Logistical discussion
4. Expected climate impacts
5. Conclusion
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Boeing KC-46 Pegasus

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The **Boeing KC-46 Pegasus** is an American military aerial refueling and strategic military transport aircraft developed by Boeing from its 767 jet airliner. In February 2011, the tanker was selected by the United States Air Force (USAF) as the winner in the KC-X tanker competition to replace older Boeing KC-135 Stratotankers. The first aircraft was delivered to the Air Force in January 2019.[4] The Air Force intends to procure 179 Pegasus aircraft by 2027.

Contents [hide]

1 Development
1.1 Background
1.2 USAF KC-X program
1.3 Selection and early development

KC-46 Pegasus



A U.S. Air Force KC-46A with refueling boom lowered

Role Aerial refueling and transport aircraft

KC-46 Pegasus prepares to refue
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KC-46 aerial refueling tanker conducts receiver compatibility tests with a U.S. Air Force C-17 Globemaster III from Joint Base Lewis-McChord as part of Test 003-06. The event marks the near ...

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The KC-135 entered service with the United States Air Force (USAF) in 1957; it is one of nine military fixed-wing aircraft with over 60 years of continuous service[1] with its original operator. The KC-135 is

KC-135 Stratotanker



A KC-135R refuels an F-15C Eagle

Role	Aerial refueling and transport aircraft
National origin	United States

F-15C Eagle from the 67th Fight
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F-15C Eagles from the 67th Fighter Squadron at Kadena Air Base, Japan, are refueled by a KC-135R Stratotanker from the 909th Air Refueling Squadron during joint bilateral training with oth ...

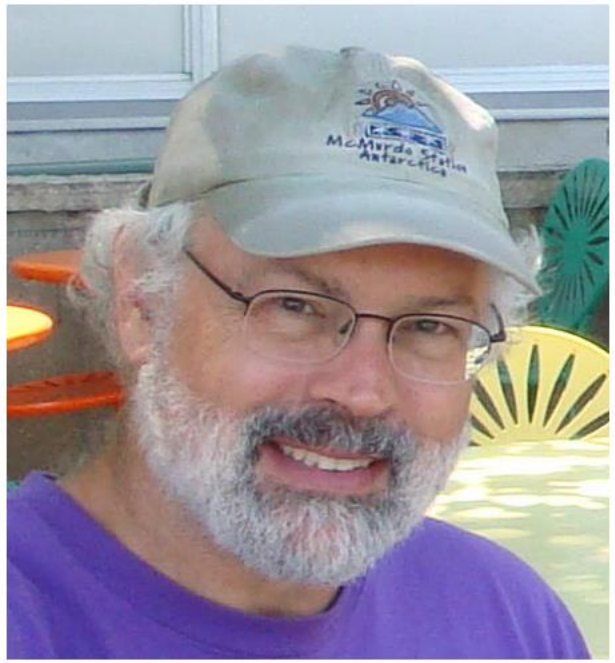
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Alan Robock Home Page
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Aktualizovat



Alan Robock

(click here for Biographical Sketch and other photos)

B.A., University of Wisconsin, 1970
Meteorology, Advisor: Lyle H. Horn

S.M., Massachusetts Institute of Technology, 1974
Meteorology, Advisor: Norman A. Phillips

Ph.D., Massachusetts Institute of Technology, 1977
Meteorology, Advisor: Edward N. Lorenz

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Co-Director, Rutgers Impact Studies of Climate Intervention (RISCI) lab
Member, Undergraduate Meteorology Program
Member, Graduate Program in Atmospheric Science
Member, Institute of Earth, Ocean, and Atmospheric Sciences
Associate Editor, *Reviews of Geophysics*

Research Interests:
- Nuclear Winter
- Climate Intervention (Geoengineering) **GeoMIP**
- Volcanic Eruptions and Climate **VolMIP**

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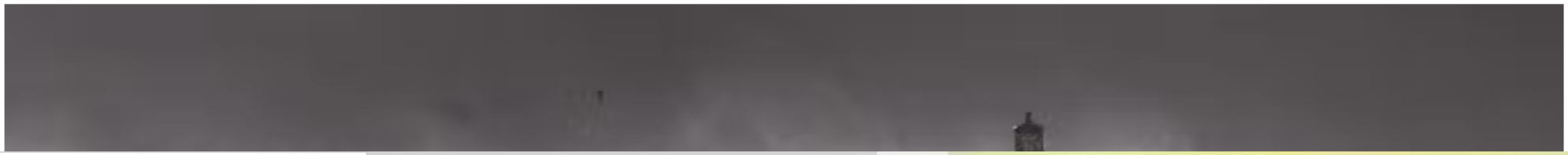
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Climate > News

Spy agencies could be funding geo-engineering research in pursuit of weaponising the weather, scientists claims

A leading climate scientist said calls purportedly from the CIA left him ‘scared’ about the consequences

Loulla-Mae Eleftheriou-Smith • Sunday 15 February 2015 18:38 • Comments



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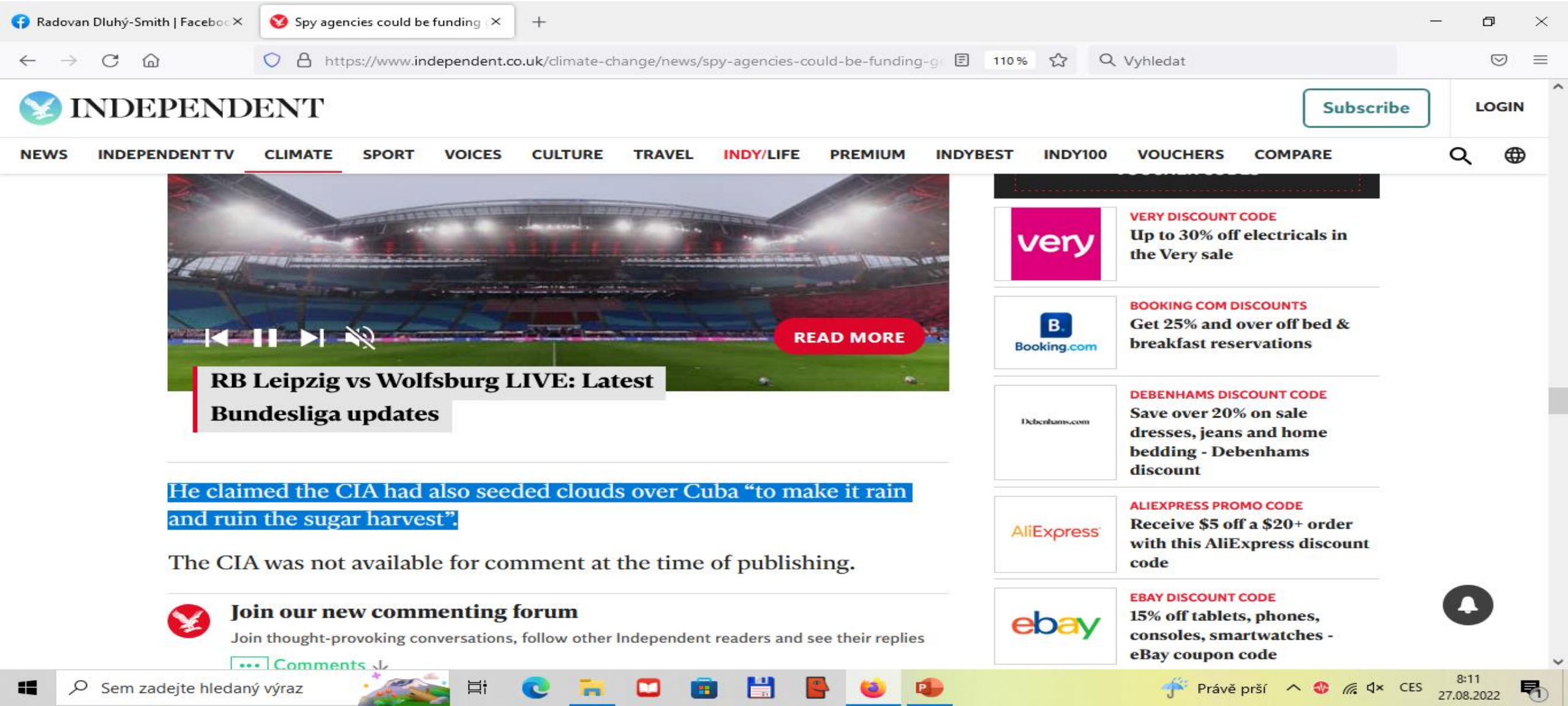
A senior American climate scientist has spoken of the fear he experienced when US intelligence services apparently asked him about the possibility of weaponising the weather as a major report on geo-engineering is to be published this week.

Professor Alan Robock stated that three years ago, two men claiming to be from the CIA had called him to ask whether experts would be able to tell if hostile forces had begun manipulating the US's weather, though he suspected the purpose of the call was to find out if American forces could meddle with other countries' climates instead.

During a debate on the use of geo-engineering to combat climate change, at the annual meeting of the American Association for the Advancement of Science in San Jose, California, Prof Robock said: "I got a phone call from two men who said we work as consultants for the CIA and we'd like to know if some other country was controlling our climate, would we know about it?



„MĚL JSEM POCIT, ŽE SE PTALI SPÍŠE, JESTLI BY SE TO DOZVĚDĚLY JINÉ ZEMĚ……“ A uvedl historii pokusů právě CIA, včetně zničení úrody na Kubě pomocí ovlivňování počasí…..



POZITIVA A NEGATIVA GEOINŽENÝRSTVÍ (Hazard s nebesy str. 332-333)

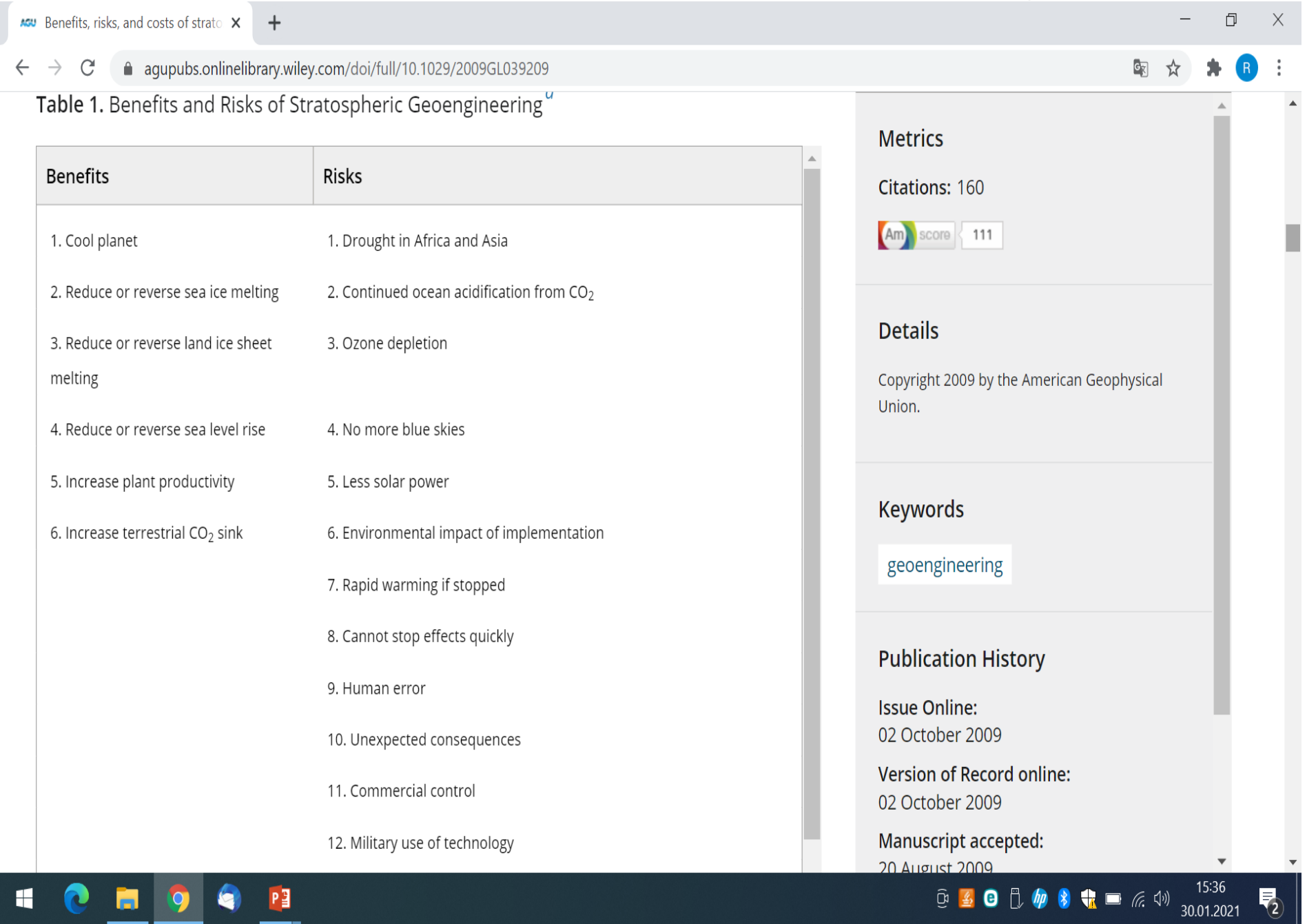


Table 1. Benefits and Risks of Stratospheric Geoengineering[a]

Benefits	Risks
1. Cool planet	1. Drought in Africa and Asia
2. Reduce or reverse sea ice melting	2. Continued ocean acidification from CO_2
3. Reduce or reverse land ice sheet melting	3. Ozone depletion
4. Reduce or reverse sea level rise	4. No more blue skies
5. Increase plant productivity	5. Less solar power
6. Increase terrestrial CO_2 sink	6. Environmental impact of implementation
	7. Rapid warming if stopped
	8. Cannot stop effects quickly
	9. Human error
	10. Unexpected consequences
	11. Commercial control
	12. Military use of technology

Metrics

Citations: 160

Am score 111

Details

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Keywords

geoengineering

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02 October 2009

Version of Record online:
02 October 2009

Manuscript accepted:
20 August 2009

NEGATIVA

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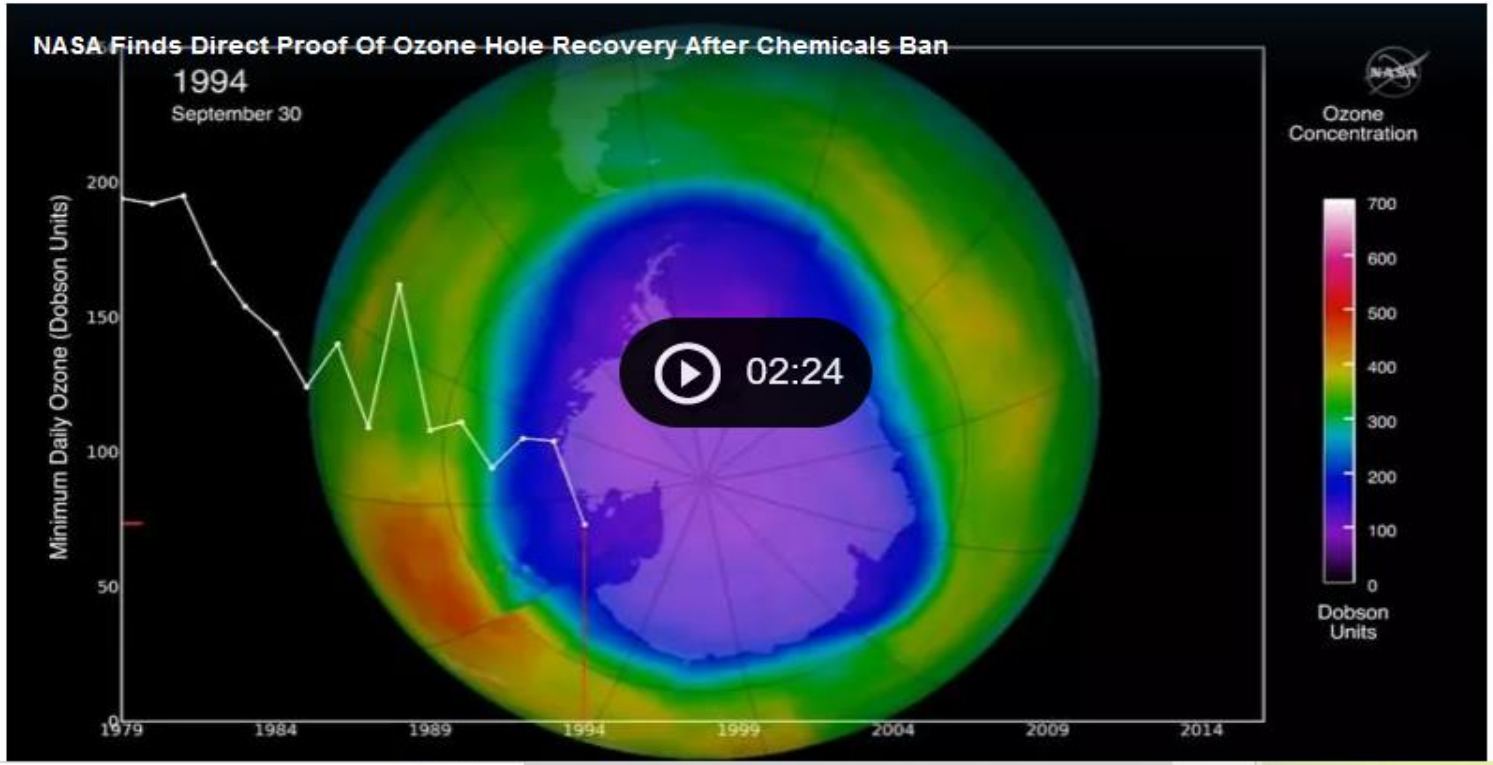
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Scientists Find Ozone Hole in Tropics Much Bigger Than in Antarctica

BY DARKO MANEVSKI, ZENGER NEWS ON 7/5/22 AT 4:26 PM EDT





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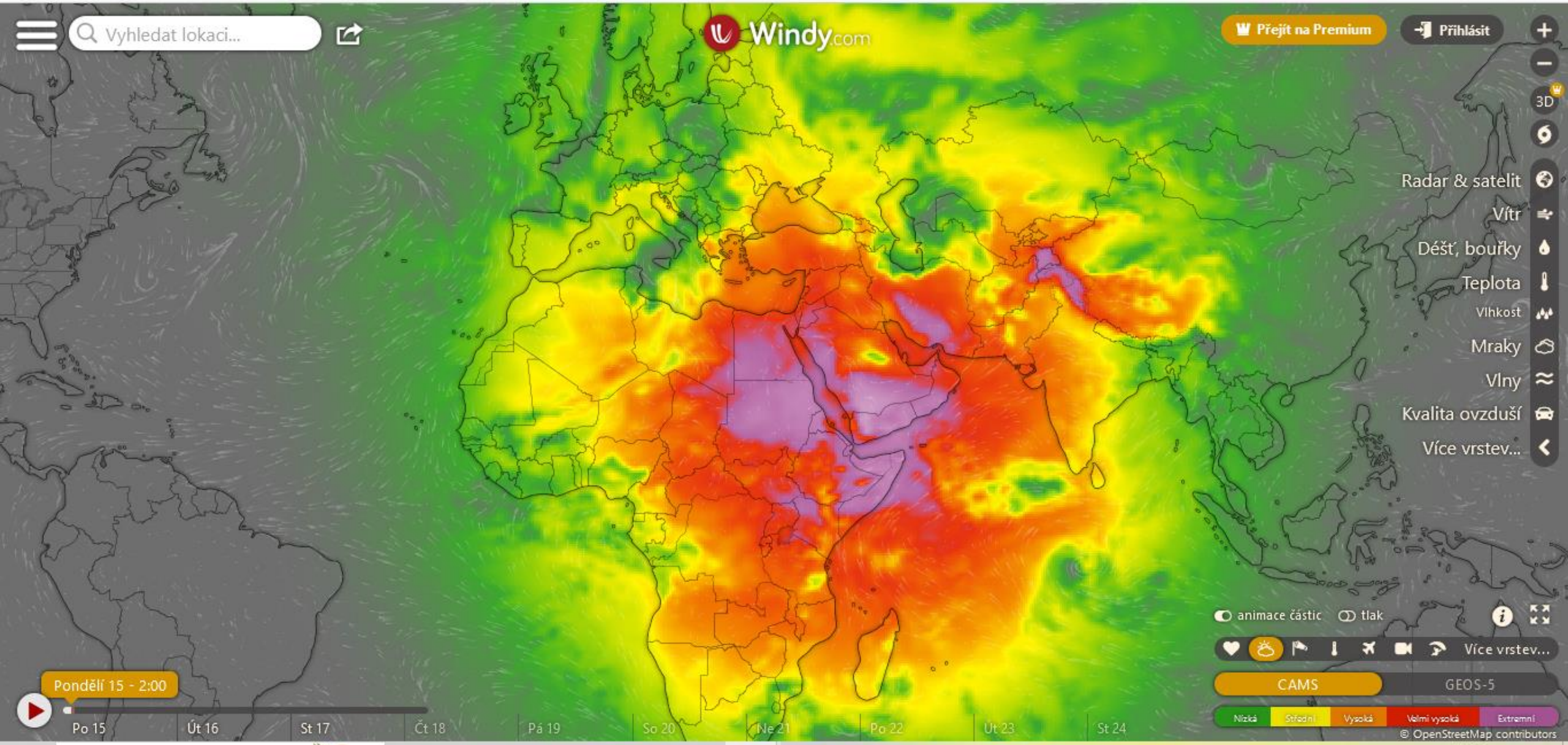
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Research article

10 Aug 2017

Possible climatic implications of high-altitude black carbon emissions

Gaurav Govardhan[1], Sreedharan Krishnakumari Satheesh[1,2], Ravi Nanjundiah[1,2], Krishnaswamy Krishna Moorthy[1], and Surendran Suresh Babu[3]

[1]Centre for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bangalore, India
[2]Divecha Centre for Climate Change, Indian Institute of Science, Bangalore, India
[3]Space Physics Laboratory, Vikram Sarabhai Space Centre, Kerala, India

Received: 01 Feb 2017 – Discussion started: 13 Feb 2017 – Revised: 10 Jul 2017 – Accepted: 11 Jul 2017 – Published: 10 Aug 2017

Abstract. On account of its strong absorption of solar and terrestrial radiation, black carbon (BC) aerosol is known to impact large-scale systems, such as the Asian monsoon and the Himalayan glaciers, in addition to affecting the thermal structure of the lower atmosphere. While most studies focus on the near-surface abundance and impacts of BC, our study examines the implications of sharp and confined layers of high BC concentration (called elevated BC layers) at altitudes more than 4 km over the Indian region using the online regional chemistry transport model (WRF-Chem) simulations. These elevated BC layers were revealed in the recent in situ measurements using high-altitude balloons carried out on 17 March 2010, 8 January 2011 and 25 April 2011. Our study demonstrates that high-flying aircraft (with emissions from the regionally fine-tuned MACCity inventory) are the most likely cause of these elevated BC layers. Furthermore, we show that such aircraft-emitted BC can be transported to upper tropospheric or lower stratospheric heights (~ 17 km) aided by the strong monsoonal convection occurring over the region, which is known to overshoot the tropical tropopause, leading to the injection of air mass (along with its constituent aerosols) into the stratosphere. We show observational evidence for such an intrusion of

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Aeroplanes may be affecting ozone layer



Jacob Koshy

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Black carbon particles exist upto 18 km into the stratosphere

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Science : Aircraft wreak havoc on ozone layer

15 February 1997

By Fred Pearce

CONCORDE, the supersonic airliner, may be destroying the ozone layer far faster than anyone anticipated, by leaving a hitherto unnoticed fog of sulphuric acid in its wake. Worse still, subsonic aircraft are probably doing the same thing, adding an unexpected threat to both stratospheric ozone and climatic stability.

The findings are worrying for both atmospheric chemists and aircraft engineers. "For twenty years, we have asked engineers to design engines that minimise production of nitrogen oxides. We regarded them as the main hazard from aircraft emissions," says David Fahey of the US government's National Oceanic and Atmospheric Administration in Boulder, Colorado. "Now it seems aerosols of sulphur particles may be equally important."

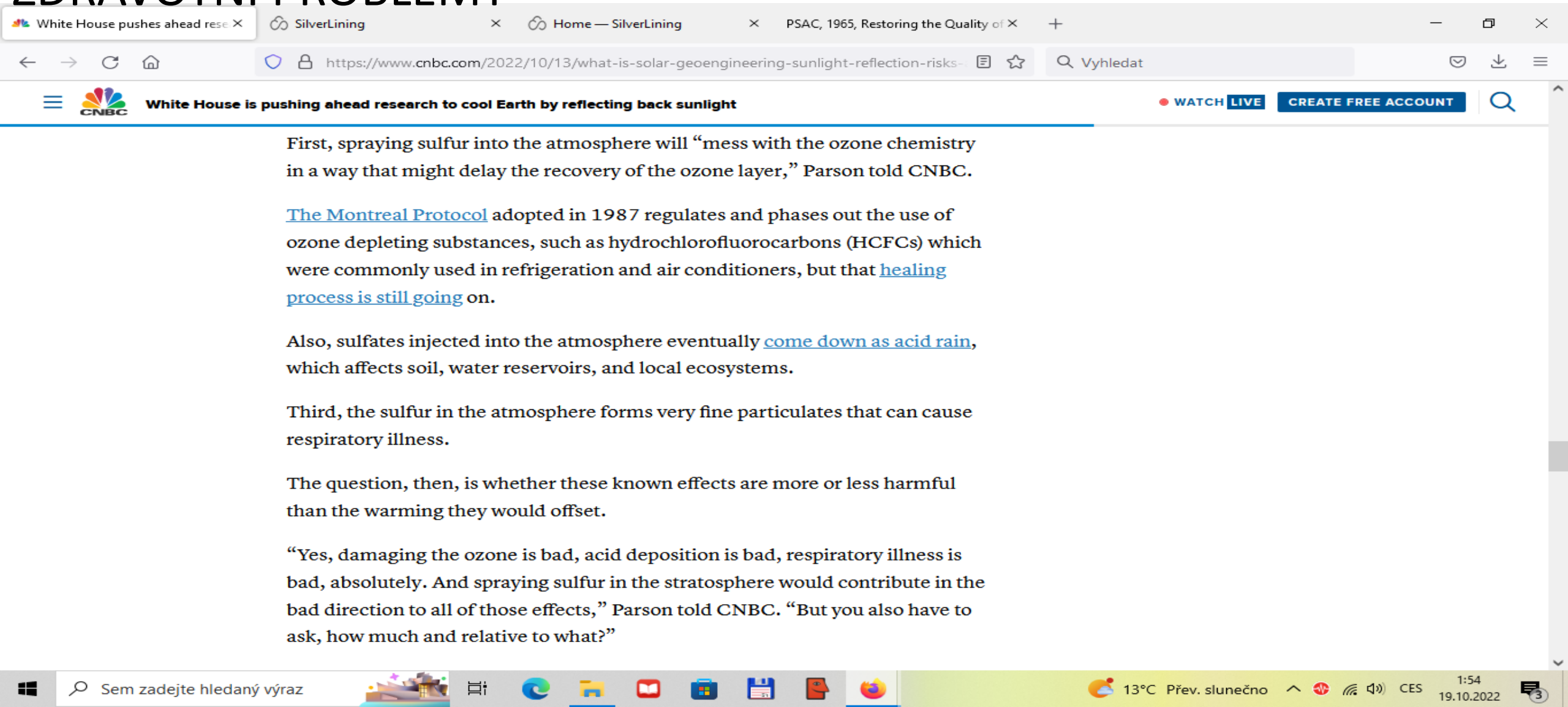
Three years ago Fahey sent a research plane to chase Concorde as it flew high over the ocean near New Zealand, sampling exhaust gases in Concorde's slipstream 10 minutes after the supersonic airliner had passed. He discovered much more



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'Invisible killer': fossil fuels caused 8.7m deaths globally in 2018, research finds

Pollution from power plants, vehicles and other sources accounted for one in five of all deaths that year, more detailed analysis reveals

Oliver Milman
@olliemilman
Tue 9 Feb 2021 19.50 GMT



Two men walk along Rajpath amid smoggy conditions in New Delhi last month. Photograph: Jewel Samad/AFP/Getty Images

Air pollution caused by the burning of fossil fuels such as coal and oil was responsible for 8.7m deaths globally in 2018, a staggering one in five of all

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Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem

Karn Vohra [a], Alina Vodonos [b], Joel Schwartz [b], Eloise A. Marais [c, 1], Melissa P. Sulprizio [d], Loretta J. Mickley [d]

[a] School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, UK

[b] Harvard T.H. Chan School of Public Health, Department of Environmental Health, Harvard University, Boston, MA, USA

[c] Department of Physics and Astronomy, University of Leicester, Leicester, UK

[d] John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA

Received 29 July 2019, Revised 12 January 2021, Accepted 14 January 2021, Available online 9 February 2021.

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Nearly everyone is exposed to unhealthy levels of tiny air pollutants, study says

Only 0.001 percent of the global population is exposed to levels of PM 2.5 pollution that the World Health Organization deems safe



By Kasha Patel

Updated March 7, 2023 at 9:15 a.m. EST | Published March 6, 2023 at 6:38 p.m. EST



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ZNEČIŠTĚNÉ OVZDUŠÍ MŮŽE POŠKODIT NAŠE DNA

Pollution Can Change Your DN | Air pollution can mess with our

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Air pollution can mess with our DNA

New evidence shows breathing diesel fumes inappropriately switches genes on and off



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Pollution Can Change Your DNA in 3 Days, Study Suggests

Breathing in small bits of dust and soot may wreak havoc on our DNA, possibly causing increased rates of lung cancer and other diseases, a new study of steelworkers shows.

BY KER THAN

PUBLISHED MAY 16, 2009 • 3 MIN READ

Breathing in polluted air may wreak havoc on our DNA, reprogramming genes in as few as three days and causing increased rates of cancer and other diseases.

JEDNA SE O PROCES METHYLACE

Pollution Can Change Your DNA

https://www.nationalgeographic.com/science/article/pollution-air-dna-health-science

Vyhledat

Particulate matter includes suspended, tiny bits of dust, metal, or soot in the air, which can lodge deep in the lungs. Exposure to the substance has been linked to respiratory diseases, lung cancer, and heart problems.

Scientists know little about how inhaling particulate matter can cause health problems, according to lead study author Andrea Baccarelli of the University of Milan.

But they did find that exposed workers' DNA was damaged by a slowed rate of "methylation," a biological process in which genes are organized into different chemical groups.

Fewer groups means that fewer genes are expressed—or made into proteins—a crucial process in the body's regular maintenance.

Reduced-size gene groups like the ones observed in the new study have also been found in the blood DNA of lung cancer patients.

Widespread Damage

In the study, the workers' blood was sampled on the morning of the first

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theguardian.com/society/2019/jul/12/billions-of-air-pollution-particles-found-in-hearts-of-city-dwellers

Billions of air pollution particles found in hearts of city dwellers

Exclusive: Study shows associated damage to critical pumping muscles, even in children

Damian Carrington
Environment editor
@dpcarrington

Fri 12 Jul 2019 17.00 BST

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▲ People wear face masks to combat air pollution in Mexico City, where the subjects of the study had lived. Photograph: Pedro Pardo/AFP/Getty Images

The hearts of young city dwellers contain billions of toxic air pollution

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Nanočástice těžkých kovů v lidském mozku

Magnetite pollution nanoparticle
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RESEARCH ARTICLE

Magnetite pollution nanoparticles in the human brain

Barbara A. Maher, Imad A. M. Ahmed, Vassil Karloukovski, Donald A. MacLaren, Penelope G. Foulds, David Allsop, David M. A. Mann, Ricardo Torres-Jardón, and Lilian Calderon-Garciduenas

PNAS September 27, 2016 113 (39) 10797-10801; first published September 6, 2016;
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Edited by Yinon Rudich, Weizmann Institute of Science, Rehovot, Israel, and accepted by Editorial Board Member A. R. Ravishankara July 25, 2016 (received for review April 13, 2016)

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Significance

We identify the abundant presence in the human brain of magnetite nanoparticles that match precisely the high-temperature magnetite nanospheres, formed by combustion and/or friction-derived heating, which are prolific in urban, airborne particulate matter (PM). Because many of the airborne magnetite pollution particles are <200 nm in diameter, they can enter the brain directly through the olfactory nerve and by crossing the damaged

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Thorough characterization of the materials was performed and the reactivity of the nanoparticles in the different media relevant to this investigation was assessed. These experiments confirmed the possibility of aluminum nanoparticles reaching intracellular compartments unreacted. The different scenarios of cell/particle interaction were simulated and the toxicity measured corroborating that the cell death observed was caused by the reaction of the aluminum nanoparticles inside the cells. Lastly a very specific antibiotic meant to block the proton pumps that acidify the endosomal compartments was used and significant reduction of toxicity, especially for the spherical particles, was achieved. The results from these last experiments verified that the acidic environment and enzymatic activity are critical factors on aluminum nanoparticle toxicity. The aluminum flakes

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By

MARIA PALAZUELOS JORGANES

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Air pollution

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Cognitive decline in older people more likely to be accelerated by exposure to emissions, finds review of 70 studies

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About 850,000 people in the UK suffer with dementia, according to the NHS. Photograph: Joe Giddens/PA

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Rapid Response:

Solar geoengineering by injecting aluminum oxide aerosol into the lower stratosphere is a serious threat to global mental health

Dear Editor

A possible geoengineering method to mitigate the global warming aspect of climate change is the injection of aerosols into the lower stratosphere, closely mimicking the way large volcanic eruptions cool the climate. This method is called solar-radiation management (SRM) scheme or simply Solar Geoengineering (1). SRM has been suggested to be affordable and have high effectiveness compared with other geoengineering schemes that have been suggested to mitigate global warming (1). While sulphate aerosols are the most studied, it has been recently shown that aerosols with other compositions, aluminium oxide (alumina) and diamond, could be used to dramatically increase the amount of light scatter achieved on a per mass basis. Alumina particles formed after the alumina aerosol injection are more efficient scatterers and may have less severe technology-specific risks than sulfates. Thus, they are expected to be more efficient per unit mass for geoengineering applications (2).

Nevertheless, it has also been suggested that SRM has a low associated safety compared with other geoengineering schemes because of its possible effects on regional climate, stratospheric ozone, high-altitude tropospheric clouds, biological productivity (3), and global biodiversity (4). We want to add a possible severe effect on Global Mental Health that could be caused by using alumina as light scattering. The average residence time of a particle in the lower stratosphere is approximately 1-2 years (1,3). After eventual transport into the troposphere, alumina particles undergo relatively rapid mixing processes by weather events, turbulence, and cloudscale overturning. They are mostly removed from the atmosphere by dry deposition, sedimentation, or scavenging by clouds, finally polluting the environment (1)

30 May 2022
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Pediatrician
International Society of Doctors for the Environment (ISDE, Italy) - Presented at National Congress of ISDE Italy, San Sepolcro, AR, Italy. 29/31 May, 2022.
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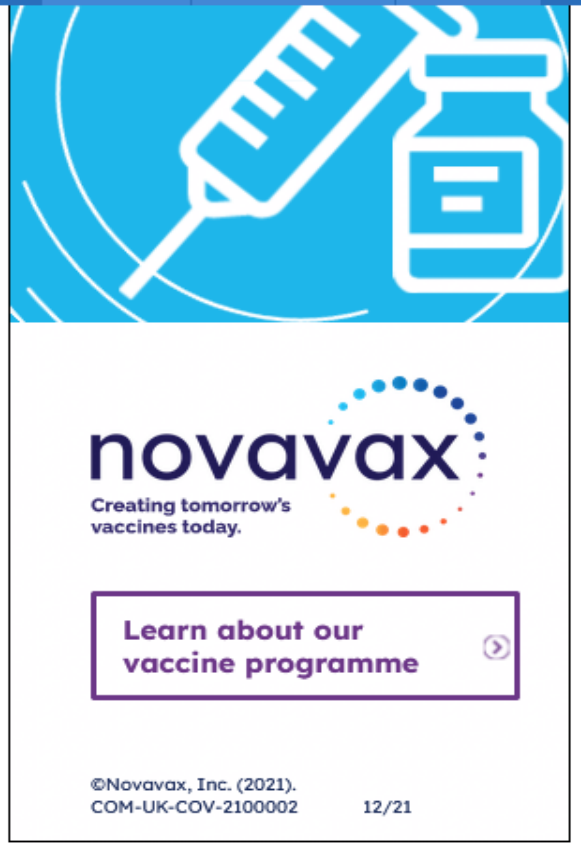
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efficient per unit mass for geoengineering applications (2).

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Aluminium has often been regarded as not posing a significant health hazard if the human body burden of aluminium has increased. Nevertheless, epidemiological studies suggest that aluminium may not be as innocuous as was previously thought and that aluminium may actively promote the onset and progression of Alzheimer's disease. This condition is the most common form of dementia and may contribute to 60–70 % of cases. In 2015, dementia affected 47 million people worldwide (or roughly 5% of the world's elderly population), a figure predicted to increase to 75 million in 2030 and 132 million by 2050. Recent reviews estimate that each year nearly 9.9 million people develop dementia globally; this figure translates into one new case every three seconds (5). Even prolonged exposure to low levels of aluminium leads to changes associated with brain ageing and neurodegeneration (6).

Furthermore, aluminium has been included among 200 neurotoxic chemicals that silently erode intelligence, disrupt behaviours, truncate future achievements, and damage societies, perhaps most seriously in developing countries. The latter is called the "Silent Pandemic of Neurodevelopmental Toxicity in Children" (7,8). Recently, the aluminium content of brain tissue in autism spectrum disorder was found to



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Worldwide land precipitation of aluminium following aerosol spraying into the lower stratosphere would increase human body exposure and seriously threaten Global Mental Health.

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Strategic Intelligence

What's behind the IQ drop?

It's not clear what's causing the drop in IQ.

The study included different generations from the same family, which suggests that the decline is not genetic — children are performing worse than their parents.

The authors of the study suggest that it could be due to environmental factors. These could include anything from what we eat, to the air we breathe, to other daily lifestyle choices.

It could be that as technology does more and more tasks for us we become less intelligent. It's possibly due to changes in how mathematics and languages are taught, or even because we spend so much time on smartphones and computers.

The drop in IQ scores isn't limited to Norwegians: the authors say that this trend is evident in several other countries.

What is intelligence anyway?

Perhaps it could be that our intelligence can't be measured accurately by



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Aluminum and Glyphosate Can Synergistically Induce Pineal Gland Pathology: Connection to Gut Dysbiosis and Neurological Disease

Stephanie Seneff[1*], Nancy Swanson[2], Chen Li[1]

[1]Computer Science and Artificial Intelligence Laboratory, MIT, Cambridge, MA, USA.

[2]Independent Researcher, Abacus Enterprises, Lummi Island, WA, USA.

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Abstract

Many neurological diseases, including autism, depression, dementia, anxiety disorder and Parkinson's disease, are associated with abnormal sleep patterns, which are directly linked to pineal gland dysfunction. The pineal gland is highly susceptible to environmental toxicants. Two pervasive substances in modern industrialized nations are aluminum and glyphosate, the active ingredient in the herbicide, Roundup?. In this paper, we show how these two toxicants work synergistically to induce neurological damage. Glyphosate disrupts gut bacteria, leading to an overgrowth of Clostridium difficile. Its toxic product, p-cresol, is linked to autism in both human and mouse models. p-Cresol enhanc

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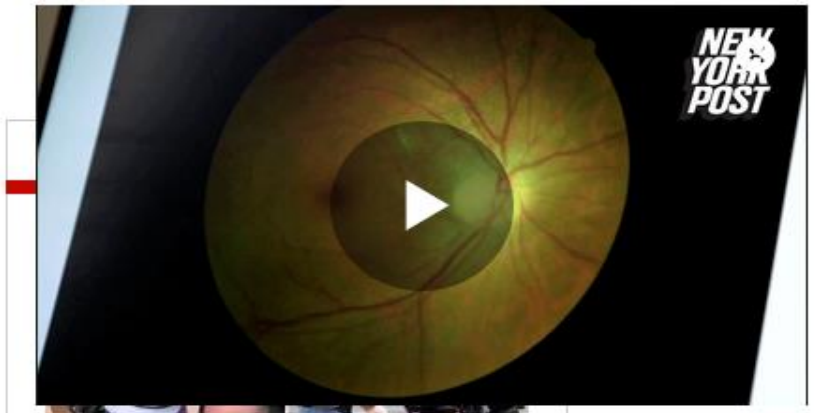


LIVING

One in every 30 kids in US has autism — a 50% jump from 2017

By Hannah Sparks

July 6, 2022 | 1:49pm | Updated



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Research Letter

July 5, 2022

Prevalence of Autism Spectrum Disorder Among Children and Adolescents in the United States From 2019 to 2020

Qian Li, MM[1]; Yanmei Li, MM[1]; Buyun Liu, MD[2]; et al

» Author Affiliations

JAMA Pediatr. 2022;176(9):943-945. doi:10.1001/jamapediatrics.2022.1846

Full Text

Autism spectrum disorder (ASD) is a complicated neurodevelopmental disability with an increasing prevalence worldwide and considerable implications for individuals and their families.[1-3] According to the Autism and Developmental Disabilities Monitoring Network, the prevalence of ASD in children aged 8 years was 2.30% in 2018, which was similar to the p
was to estimate the ASD prevale

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Insects

Plummeting insect numbers 'threaten collapse of nature'

Damian Carrington
Environment editor
@dpcarrington

Sun 10 Feb 2019
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https://www.buglife.org.uk/news/bugs-matter-survey-finds-that-uk-flying-insects-have-declined- Vyhledat

Bugs Matter survey finds that UK flying insects have declined by nearly 60% in less than 20 years

Thursday 5th May 2022



A citizen-science survey, led by Kent Wildlife Trust and Buglife, has found that the abundance of flying insects in the UK has plummeted by nearly 60% over the last 17 years; highlighting a worrying trend and the crucial need for insect-focussed conservation research, nationwide.

The 2021 Bugs Matter findings, which are published in a report released by Kent Wildlife Trust and Buglife (Bugs Matter 2021 Full Technical Report), show that the number of insects sampled on vehicle number plates by citizen scientists across the UK reduced by a staggering 59% between 2004 and 2021. These findings are

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