# *Icebergs – reproducing nature*

Artwork and / or lecture: *Icebergs – reproducing nature* 

By: Alessa Brossmer (scientific and artistic researcher) & Prof. Jochen Orso

(engineer, Reutlingen University)

#### Intro

*Icebergs – reproducing nature* advanced in teamwork of Alessa Brossmer and Prof. Jochen Orso of Reutlingen University. We started our passionated project in Iceland while standing in front of its stunning glaciers. We can either give a lecture on the technique we have worked with called photogrammetry and / or present the artwork (four 3-D prints and selected images / videos).

## Zoom in to Sólheimajökull, Iceland

Iceland is a small island surrounded by the North Atlantic Ocean. It's appearance is characterized by massive rivers, impressive waterfalls and shining glaciers. Heat and cold coexist. Active and inactive volcanoes are located all over the country, some are covered by ice, for example by the ice shield of Vatnajökull. The biggest glacier in Europe covers 8% of Iceland. Iceland also has smaller glaciers like Mýrdalsjökull. It's dozens of glacier tongues reach down to the valley and sometimes form lagoons. One of them is located in the South and called Sólheimajökull (translated: the glacier where the sun is at home). By calving the glacier releases – sometimes volcanic ash black, millennial – icebergs onto the lagoon.

We chose four icebergs of Sólheimajökull's lagoon and circled them with a filming drone. We fed the data to a program that rebuilt the surface of the iceberg and constructed a 3-D model. This technique is called photogrammetry - a technique originally coming from Geodesy but also used in architecture or for the conservation of cultural heritage as sculptures. After we extracted our 3-D model, we used a 3-D printer to print a mini iceberg of our scanned original.

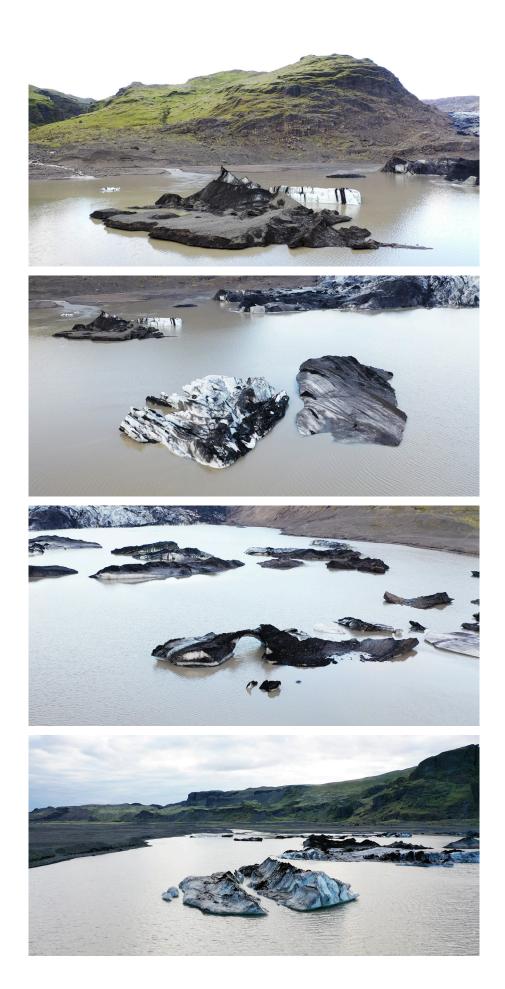
#### Zoom out

Our team's research is guided by the fascination for glaciers, by their age, beauty and strength. It is also guided by fear, as glaciers can be hazardous and even deadly – and by sadness, because they are melting way too fast. The idea was to scan the icy monuments in order to conservate them as 3-D-prints in the form they were found. By now, the uniques are already Ocean. Jewel-like sculptures and documentary shots remain.





lmg. 1: *Sólheimajökull Overview*, 2019. lmg. 2: *Sólheimajökull Overview with chosen icebergs*, 2019.



Img. 3 - 6: screenshots drone video, 2019.

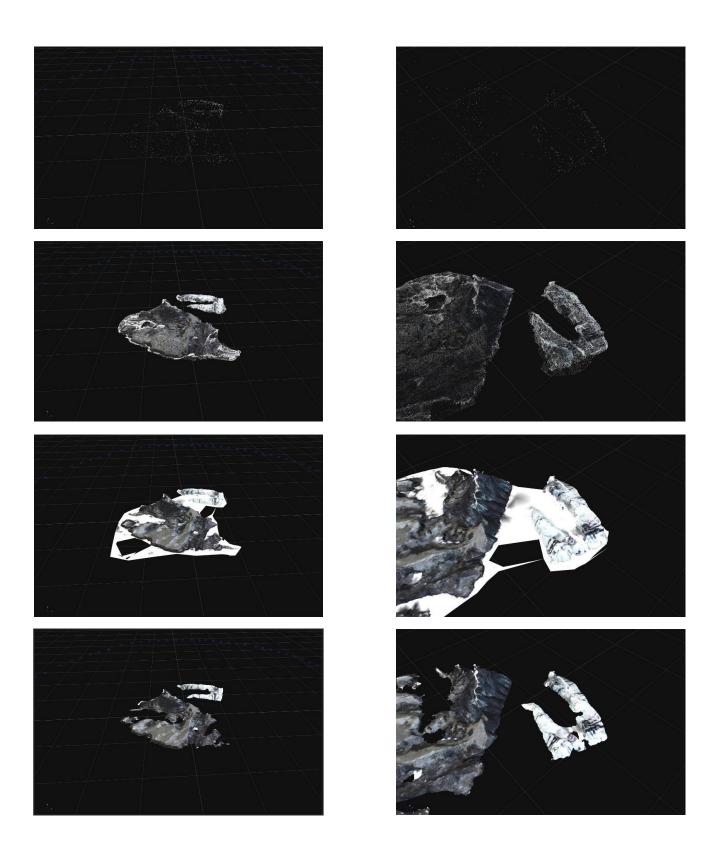






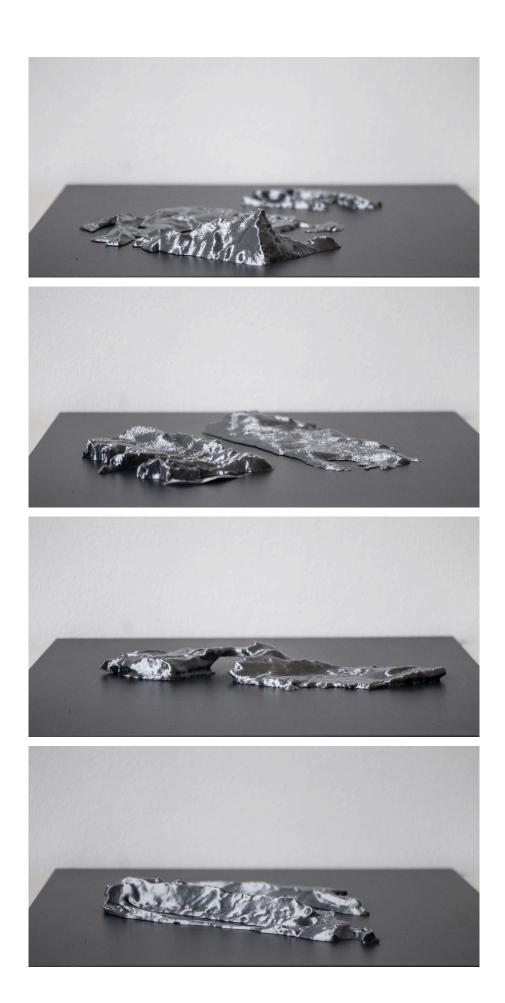


Img. 7 - 10: screenshots drone video, cropped, 2019.



Img. 11 - 14: work step iceberg 1, 2019.

Img. 15 - 18: work step iceberg 1, detail, 2019.



Img. 19 - 22: 3-D printed icebergs, site view, 2019.









Img. 23 - 26: *3-D printed icebergs, overview,* 2019.

#### **Images**

- Img. 1: Sólheimajökull Overview. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 2: Sólheimajökull Overview with chosen icebergs. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 3 6: screenshots drone video. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 7 10: *screenshots drone video, cropped.* Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 11 14: work step iceberg 1. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 15 18: work step iceberg 1, detail. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 19 22: 3-D printed icebergs, site view. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.
- Img. 23 26: *3-D printed icebergs, overview*. Image Credit: Alessa Brossmer & Jochen Orso (2019). Copyright: Alessa Brossmer & Jochen Orso.

### Vitae

Alessa Brossmer | Lives and works at Lake Constance | Scientific and artistic researcher

Mail: mail@alessabrossmer.mobi | Phone: 0049 151 228 582 71

Web: www.alessabrossmer.mobi

**Prof. Dr.-Ing. Jochen Orso** | Lives and works in Reutlingen (DEU) | Reutlingen University, Faculty ESB, CAD for Construction und Fabric Layout

Mail: jochen.orso@reutlingen-university.de | Phone: 0049 7121 3015