



# E-JADE

(A RISE program for  
accelerator physics  
started in 2015)

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# E-JADE

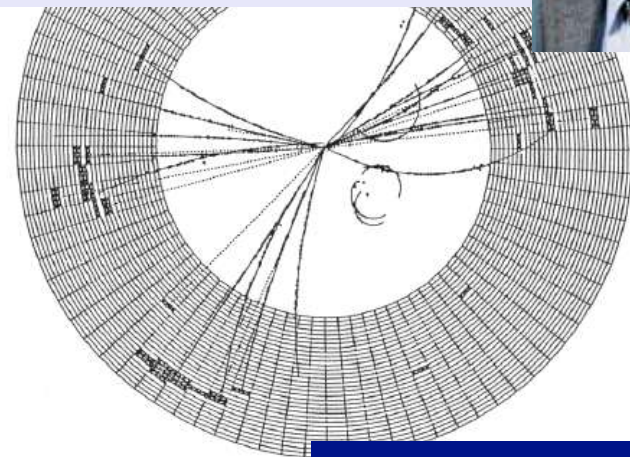
- EU-Japan Accelerator Development Exchange Programme

- **MAGNETDETEKTOR JADE**  
MAGNET DETECTOR
- |    |                           |                              |
|----|---------------------------|------------------------------|
| 1  | Strahlrohrzähler          | BEAM PIPE COUNTERS           |
| 2  | Endseitige Bleiglaszähler | END PLUG LEAD GLASS COUNTERS |
| 3  | Drucktank                 | PRESSURE TANK                |
| 4  | Myon-Kammern              | MUON CHAMBERS                |
| 5  | Jet-Kammer                |                              |
| 6  | Flugzeit-Zähler           |                              |
| 7  | Spule                     | CONE                         |
| 8  | Zentrale Blei             |                              |
| 9  | Magnetjoch                |                              |
| 10 | Myon-Filter               |                              |
| 11 | Beweglicher               |                              |
| 12 | Strahlrohr                |                              |
| 13 | Vorwärts-Detektor         |                              |
| 14 | Mini-Beta                 |                              |
| 15 | Fahrwerk                  |                              |



Europe-Japan Collaboration in High Energy Physics was initiated by professor Masatoshi Koshiba (Nobel laureate) in 1973.

Since then, international collaboration in particle physics has grown tremendously. I myself is working since 1988 in Germany, Switzerland....



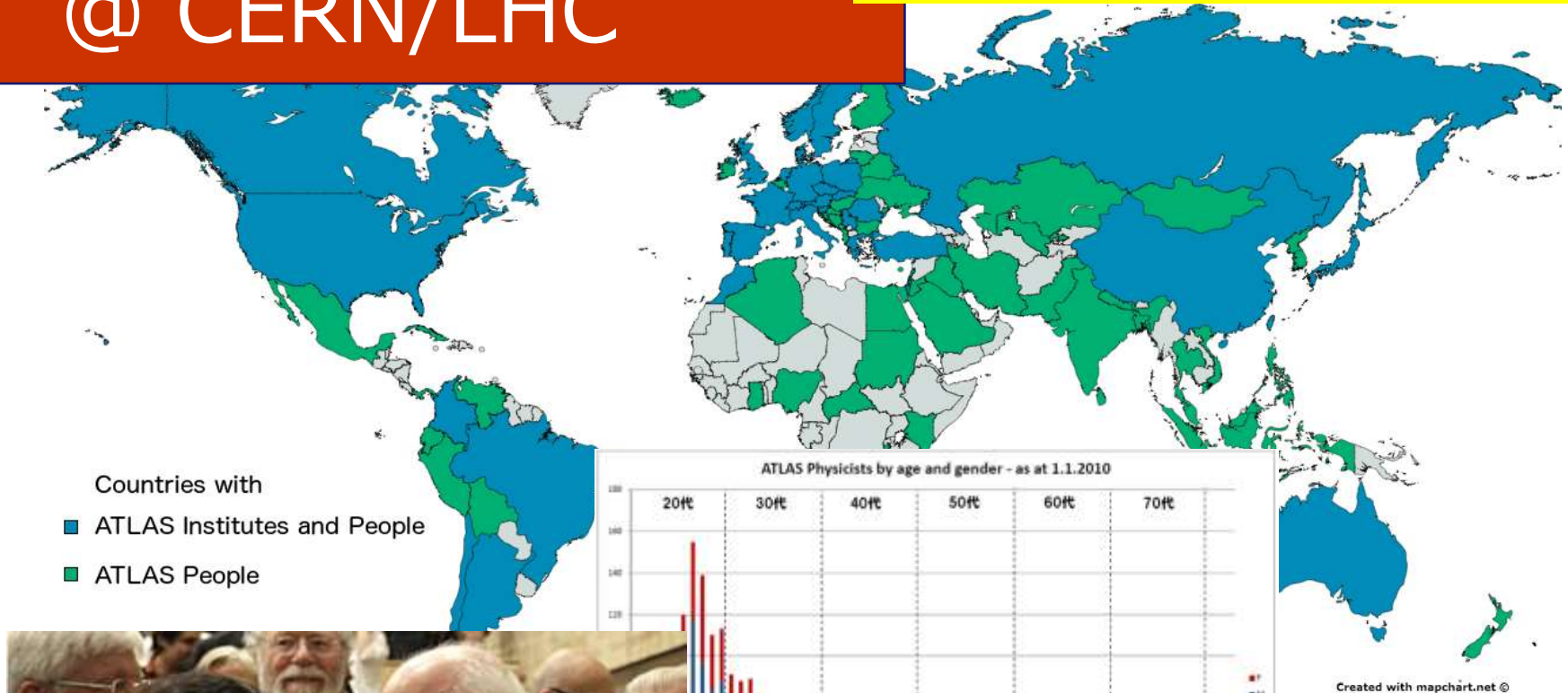
Three-jet event in JADE at DESY's PETRA  $e^+e^-$  collider

Gesamtge  
Magnetfel  
Beteiligte  
DESY, Hamburg, Heidelberg,  
Lancaster, Manchester,  
Rutherford Lab., Tokio



# ATLAS Collaboration @ CERN/LHC

ATLAS institutes from 38 countries  
~3000 physicists from 98 nations



- Long tradition of international collaboration in experiments (cf. another RISE program : Jennifer)
- We need more collaborations in accelerator developments -> E-JADE

# Large accelerator facilities in the world

Proton



Japan J-PARC/KEK

LHC (Large Hadron Collider)  
CERN

Proton-Proton Collisions

Circumference  
27km



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Electron- positron

Japan  
superKEK

3 km





# Large accelerator facilities in the world

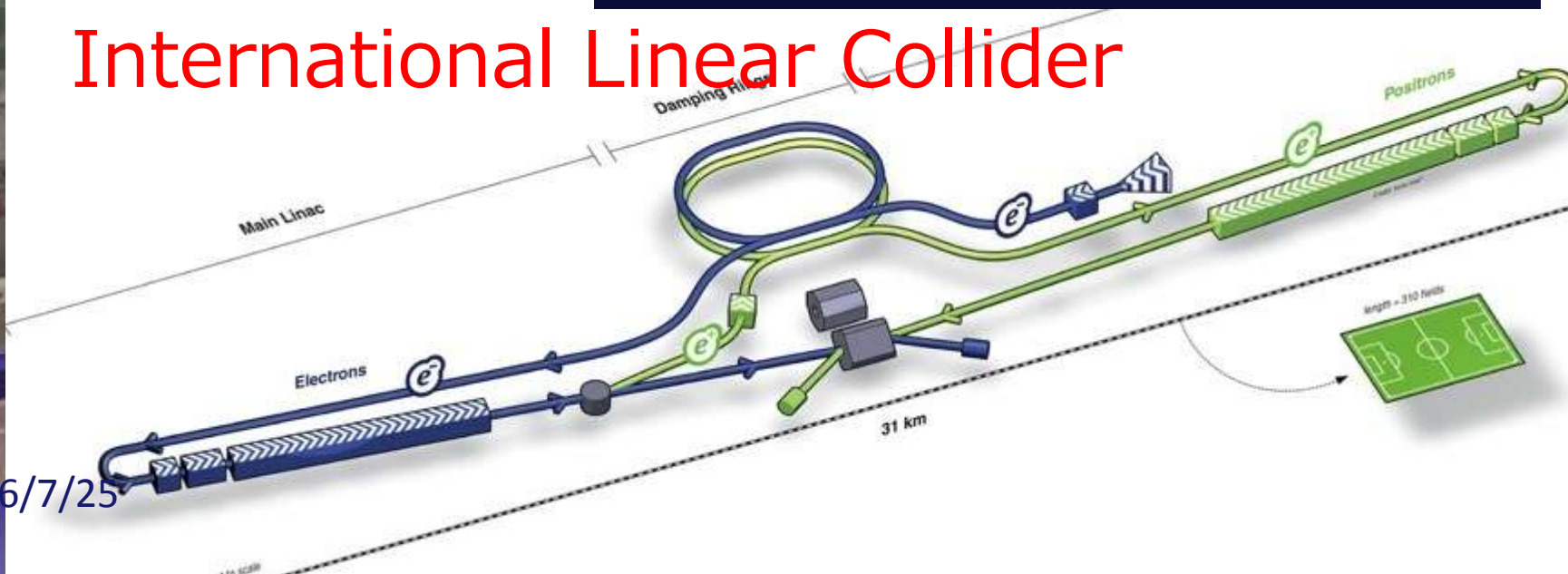


# Large accelerator facilities in the Future

LHC upgrade

We need close collaborations from R&D stage for the future big accelerators -> E-JADE

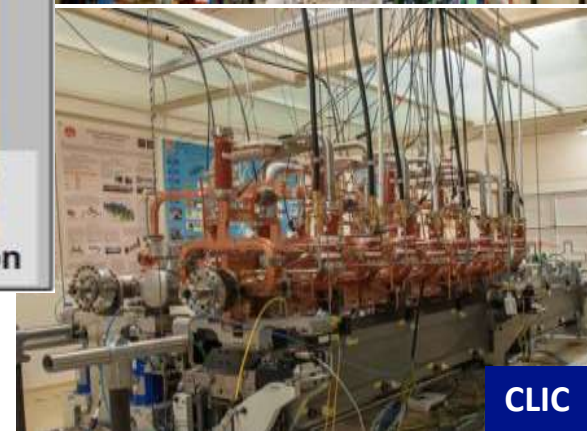
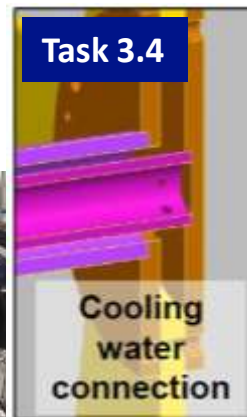
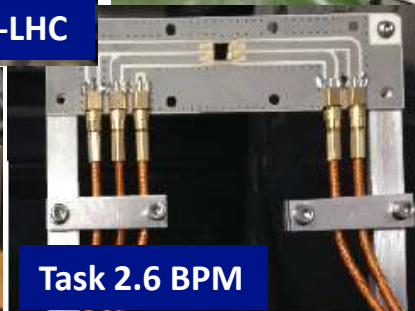
## International Linear Collider



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# E-JADE – Our Facilities





# R&D facilities at KEK for future accelerators -> E-JADE

E-JADE  
WP2



E-JADE  
WP3



E-JADE  
WP1

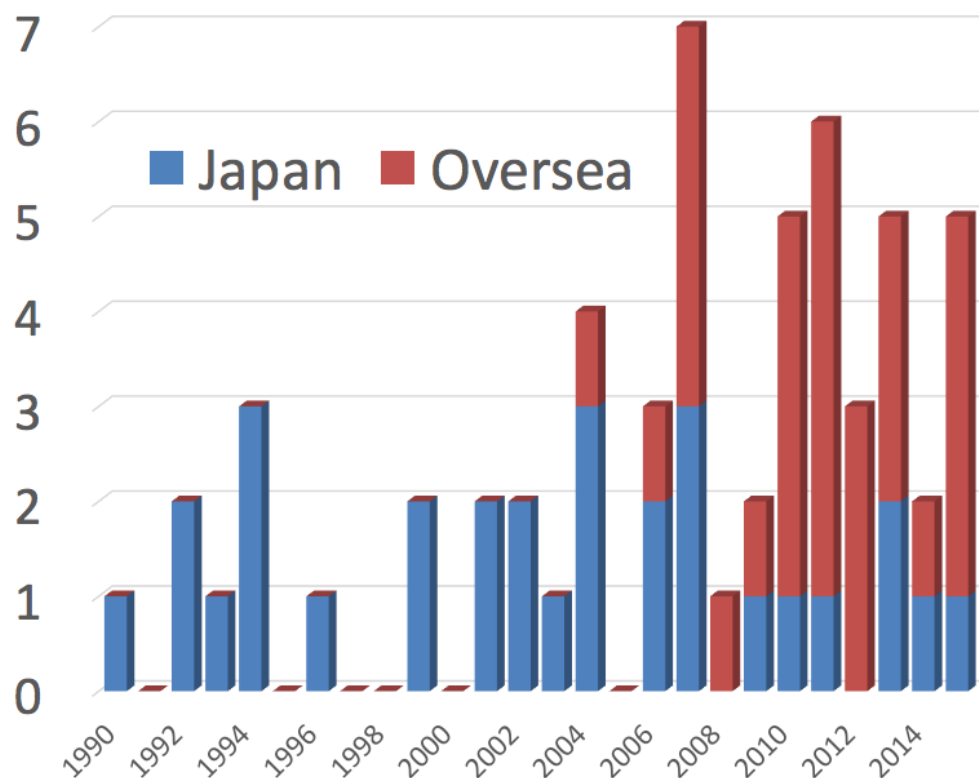


RISE is a great help for European researcher to use/stay these facilities.

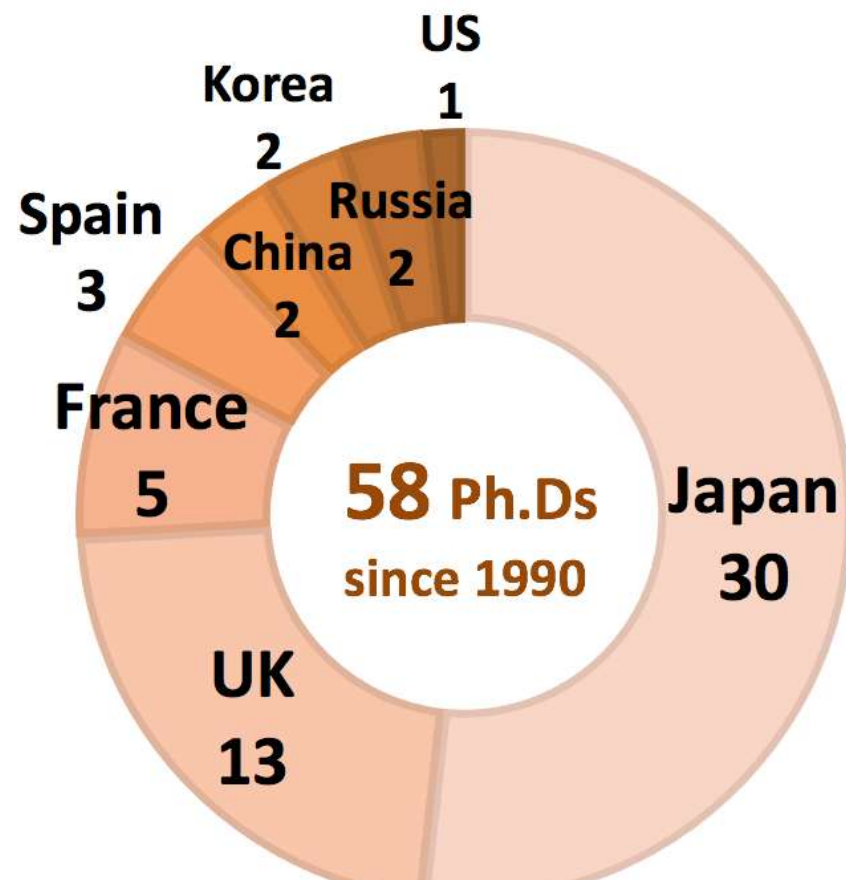
Collaboration institutes are CERN(CH), CEA(F), CNRS(F), CSIC(E), DESY(D), Royal Holloway(UK), Oxford(UK). (+ KEK, U.Tokyo)



## 58 Ph.Ds related to ATF R&D



ATF International Collaboration  
established in 2005



We have been accepted many European  
PhD students for accelerator research.



## ■ How to find a host in Europe ...

- ▶ We already have had a global network on the accelerator and high energy physics.

## ■ How to draft a successful proposal

- ▶ The documents were all prepared by the European side. I think it is important to provide **good supporting letters** from Japanese side with a concrete plan to show how essential for us to have the collaboration between Japan and Europe.

## ■ Cross-affiliation issues

- ▶ Not (yet) discussed.

## ■ Financial issues

- ▶ Clearly we need funds for Japanese researchers to visit Europe. We use “Kakenhi”, JSPS bi-lateral, JSPS “Program for Advancing Strategic International Networks to Accelerate the Circulation of Talented Researchers(’s predecessors)”, in addition to **Lab’s own resources**. But there is no direct matching fund. (And it is not clear if mentioning an existing RISE program will help or not.)