CELLEAR Community Meeting 2022

November 28 – 30

Closing Remarks

Konrad Schmidt

Institute of Radiation Physics · Division of Nuclear Physics · konrad.schmidt@hzdr.de · www.hzdr.de

CELLAR Community Meeting 2022 – a trip through Europe

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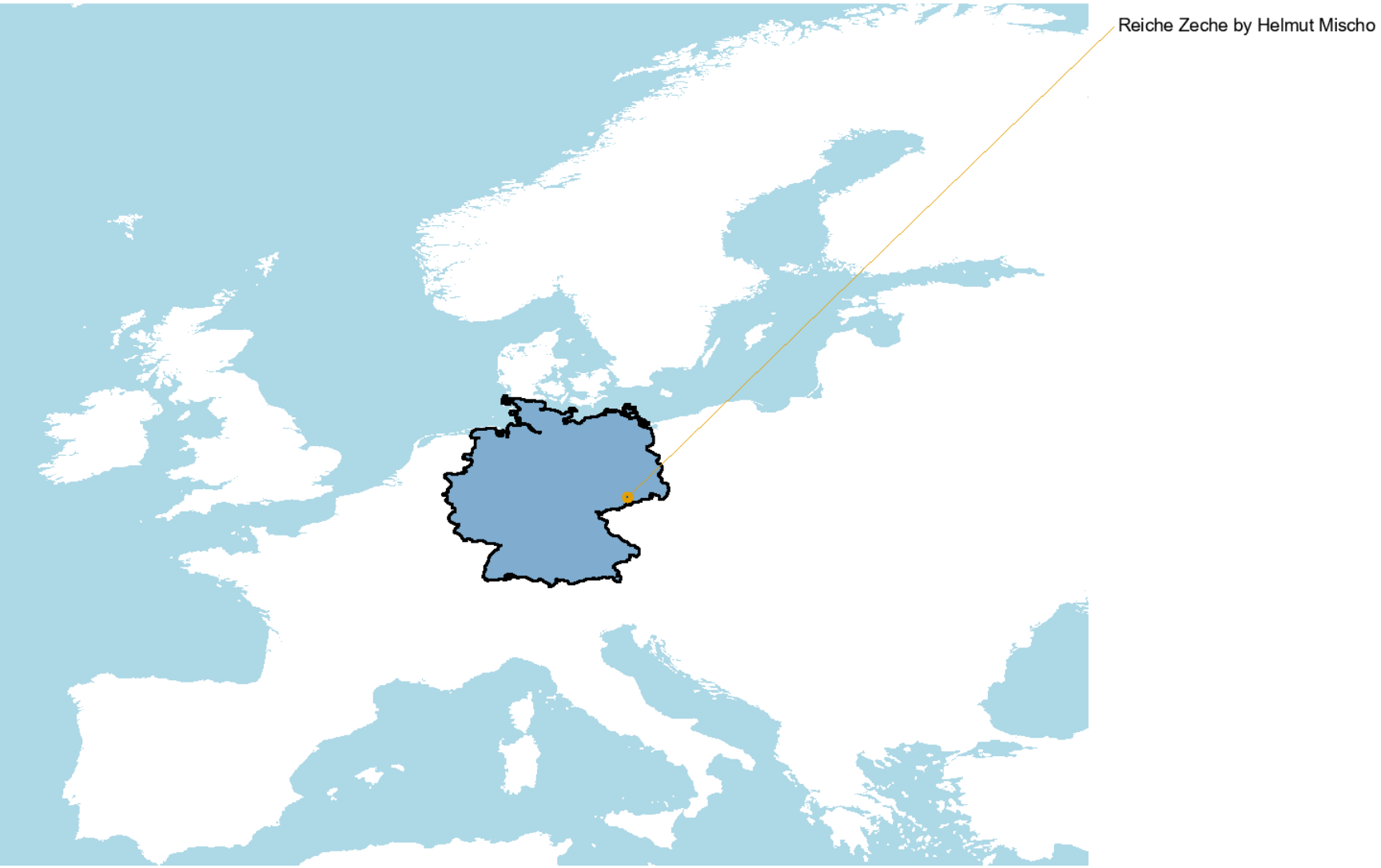

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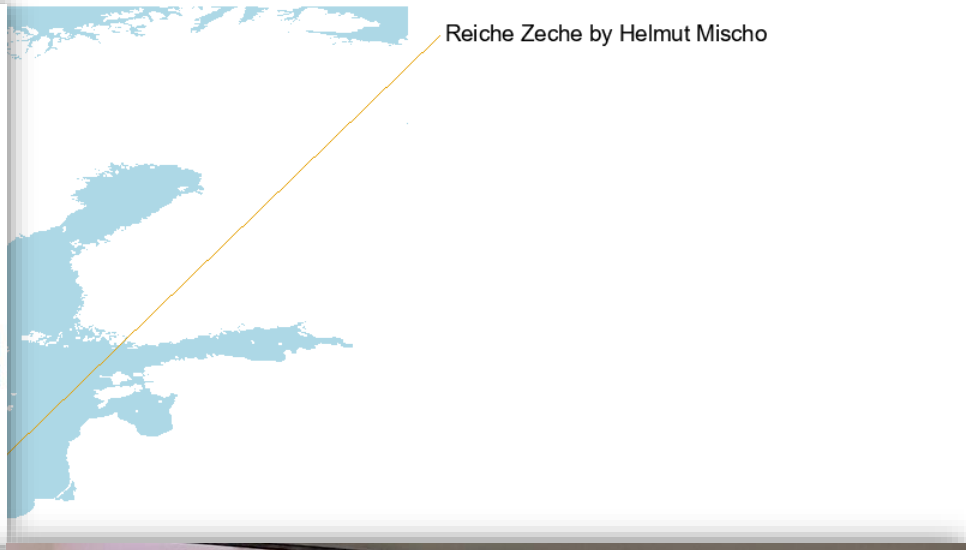

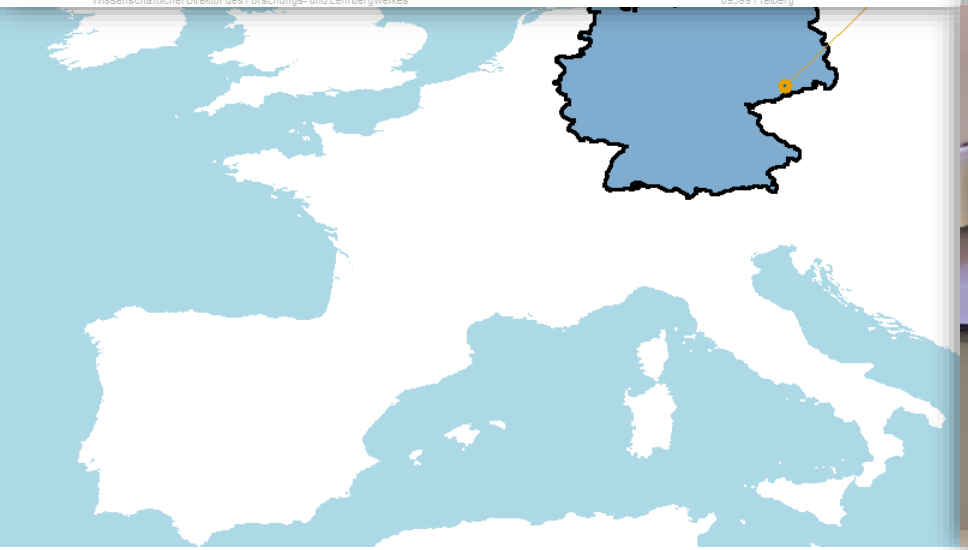

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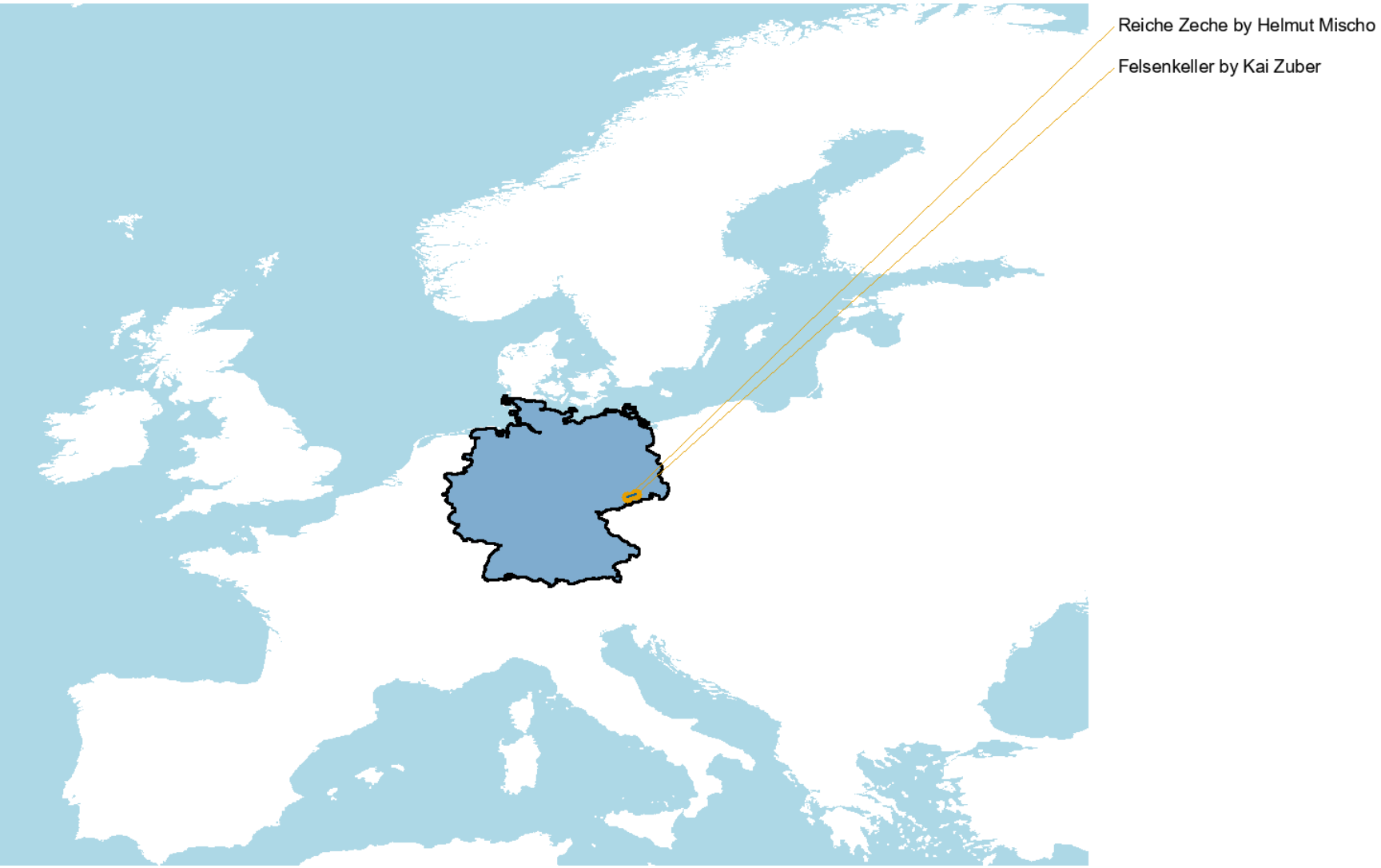

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Summary

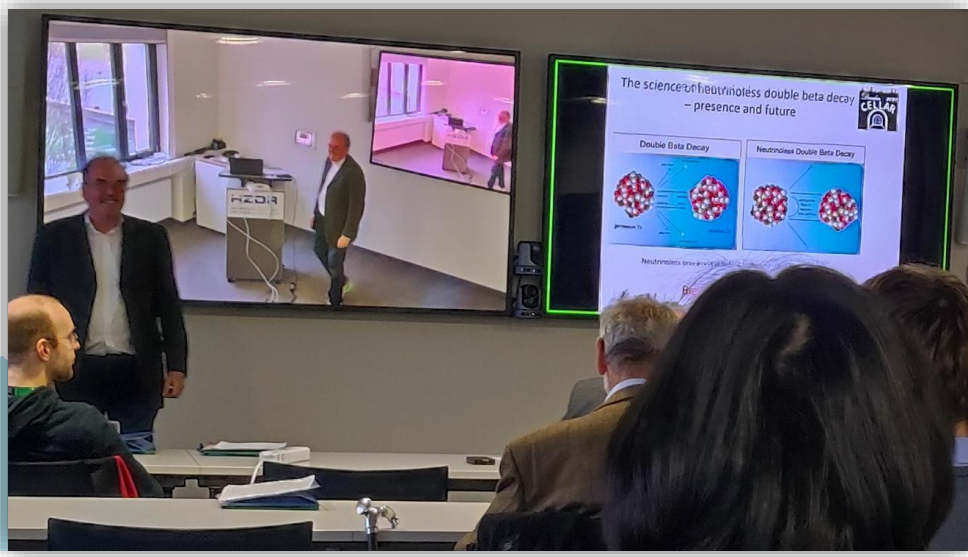
- Neutrino-less double beta decay is a very hot topic in science
- There is no super-isotope, so different groups focus on this topic
- The observation would prove that lepton number would be violated by 2 units and thus Physics beyond the Standard Modelof Particle Physics

Kai Zuber, Cellar Meeting 28.11.2022

TECHNISCHE UNIVERSITÄT DRESDEN

Reiche Zeche by Helmut Mischo

Felsenkeller by Kai Zuber



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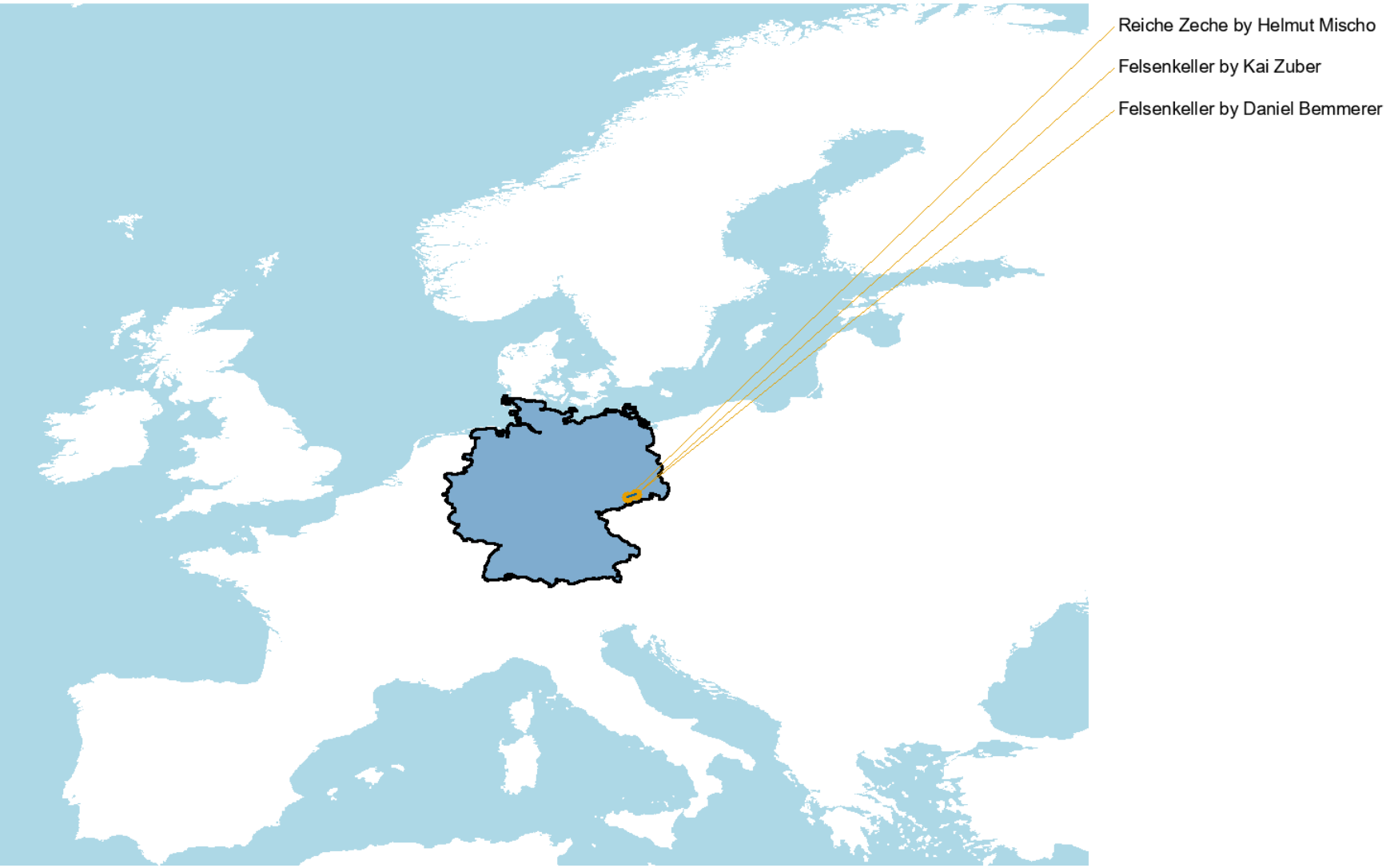

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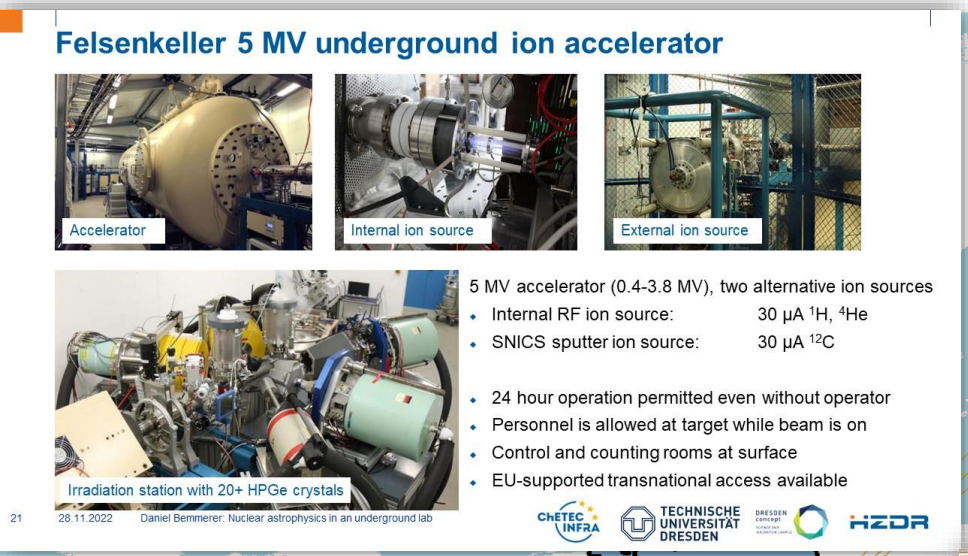

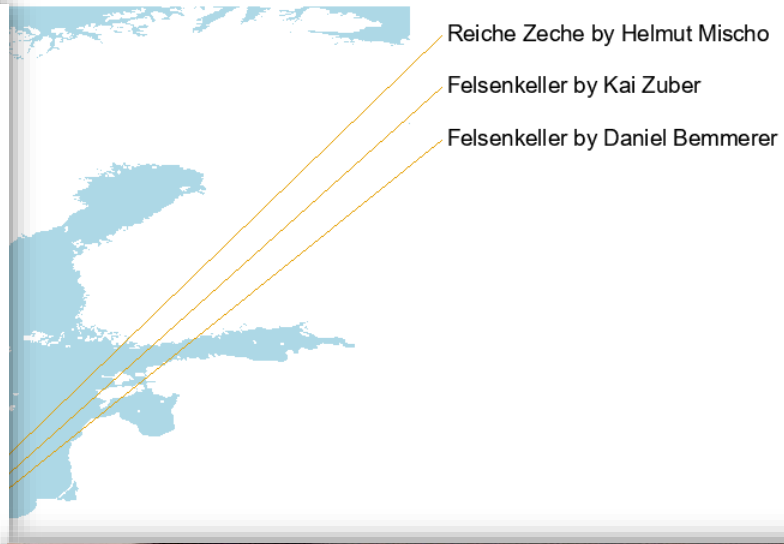

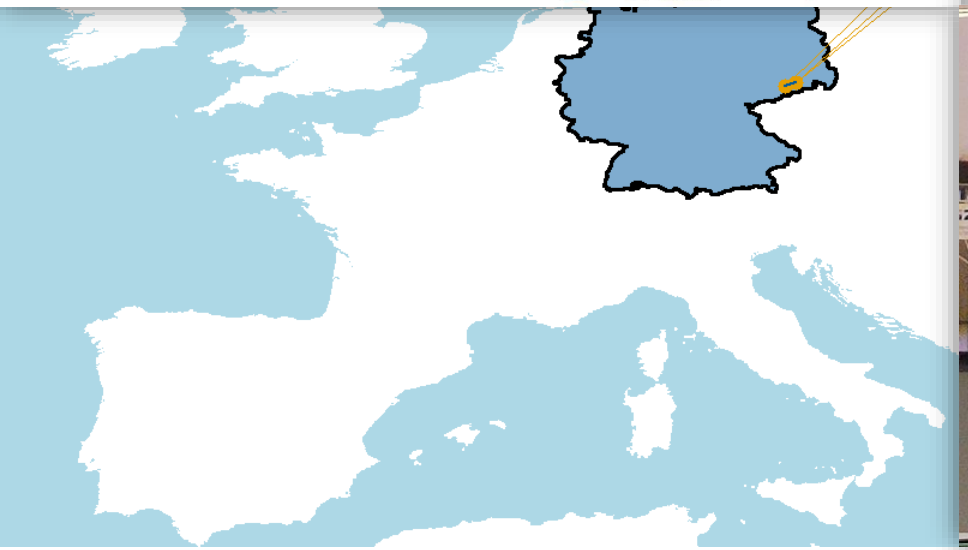

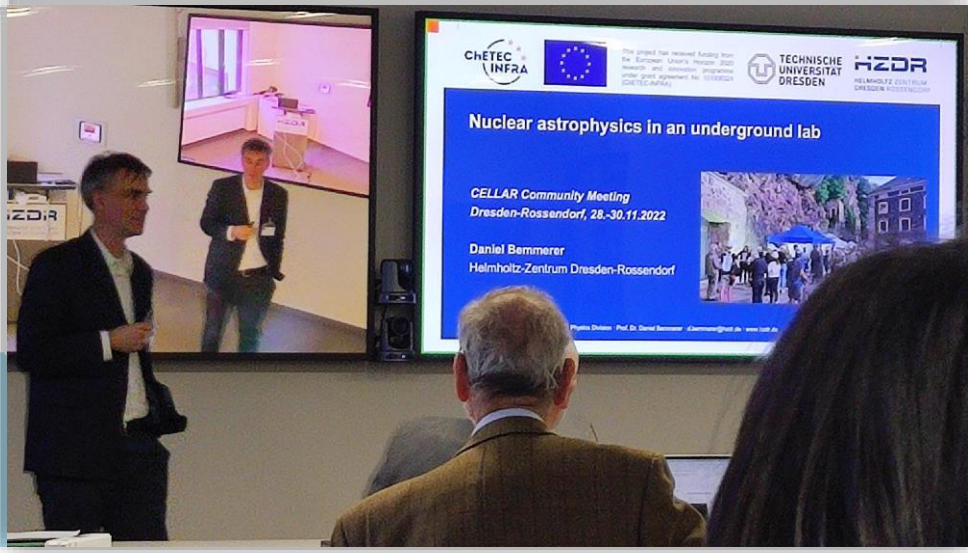

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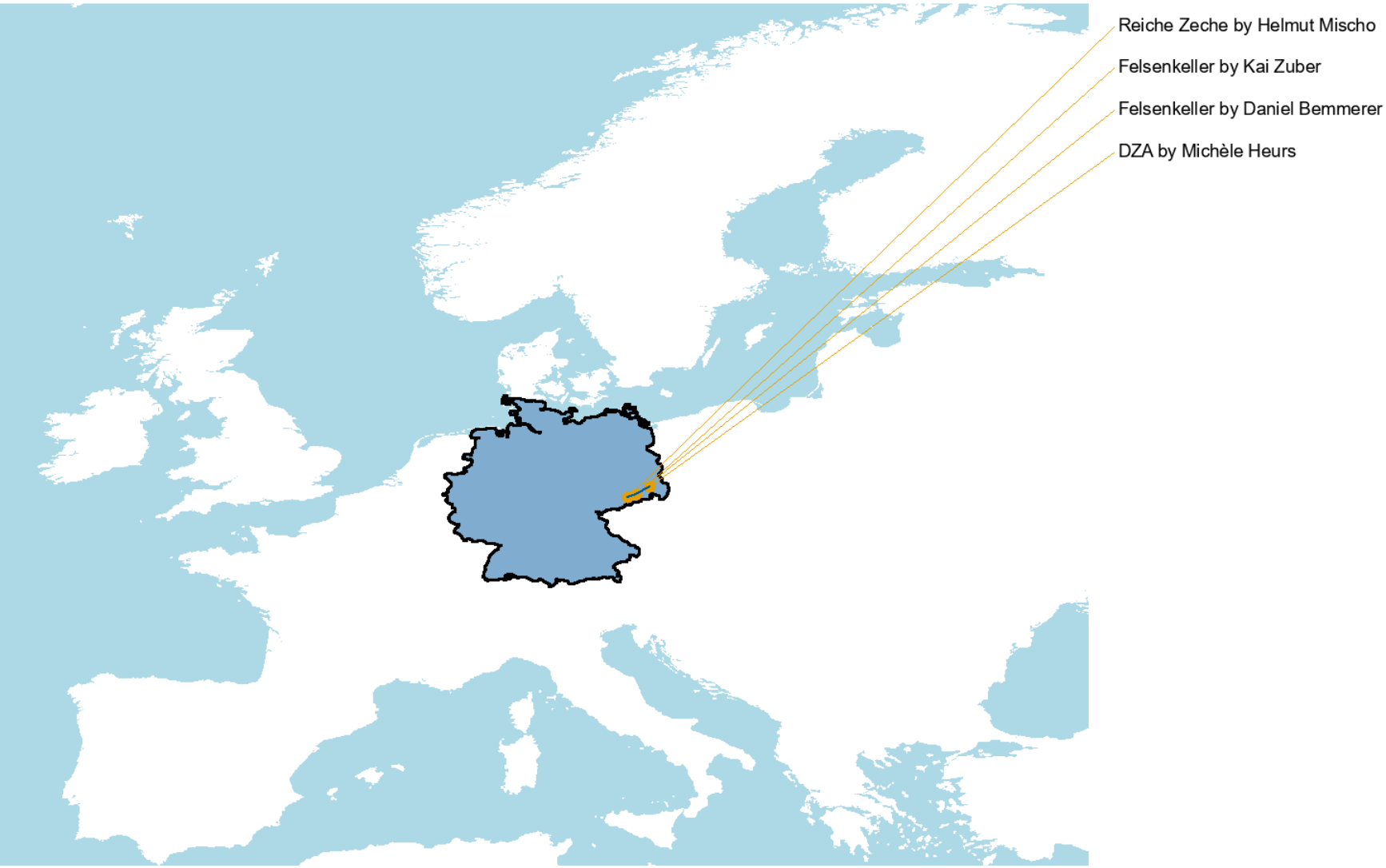

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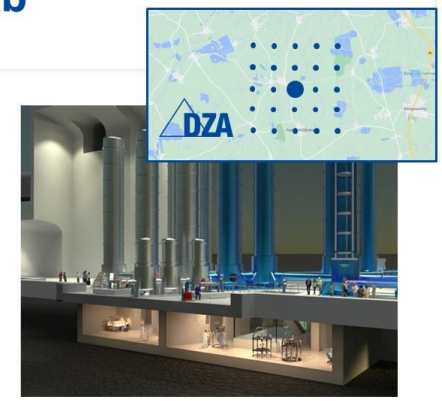
Das Low-Seismic-Lab

- Technology development for gravitational wave astronomy
- Adaptive seismic noise reduction
- Sub-nanometer microscopy and photolithography
- Astrophysics with accelerators



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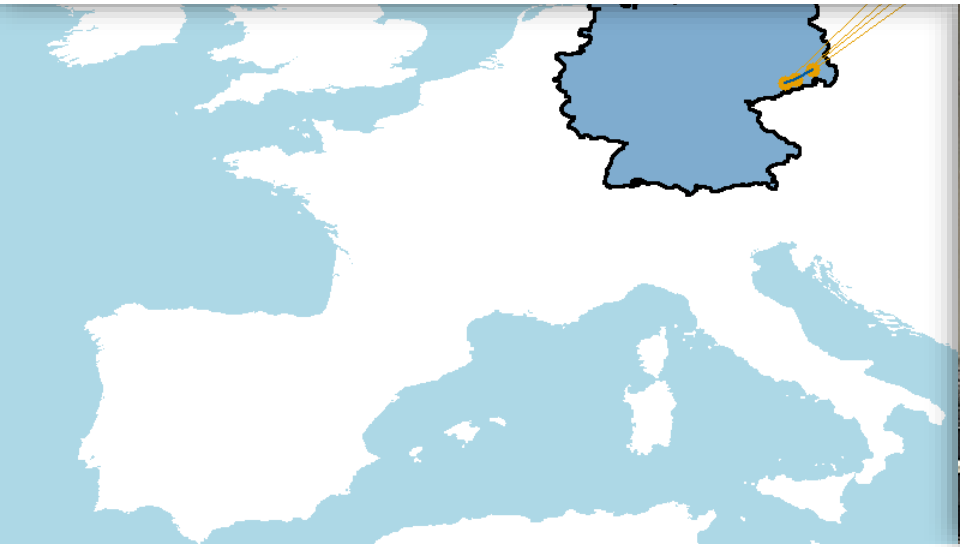

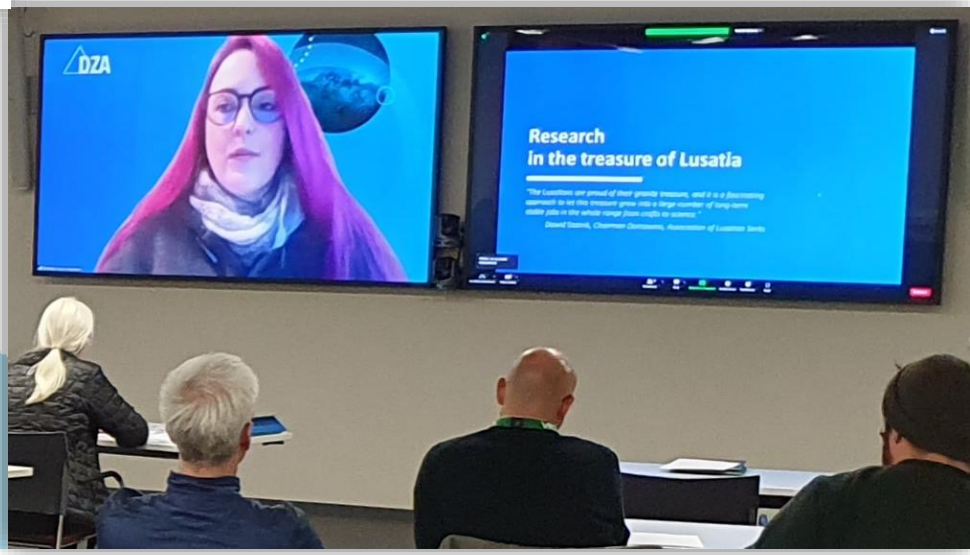

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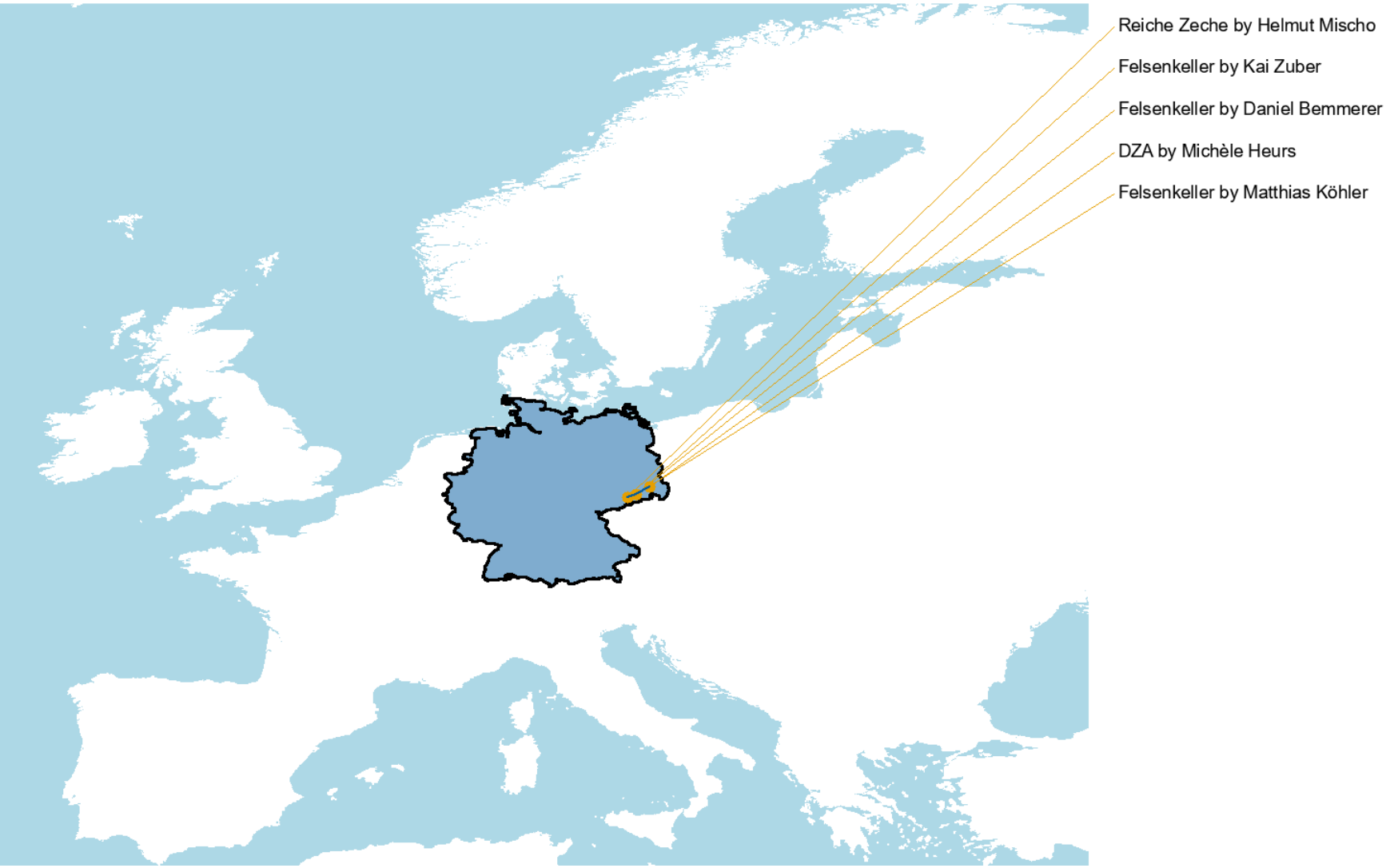

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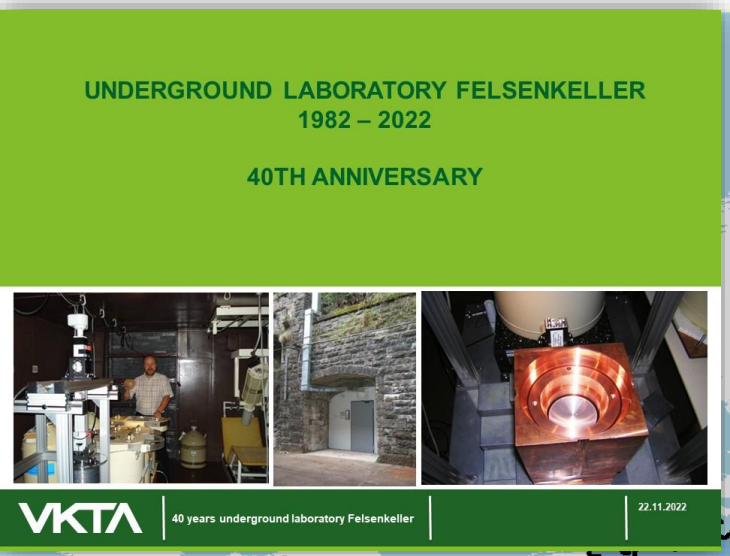

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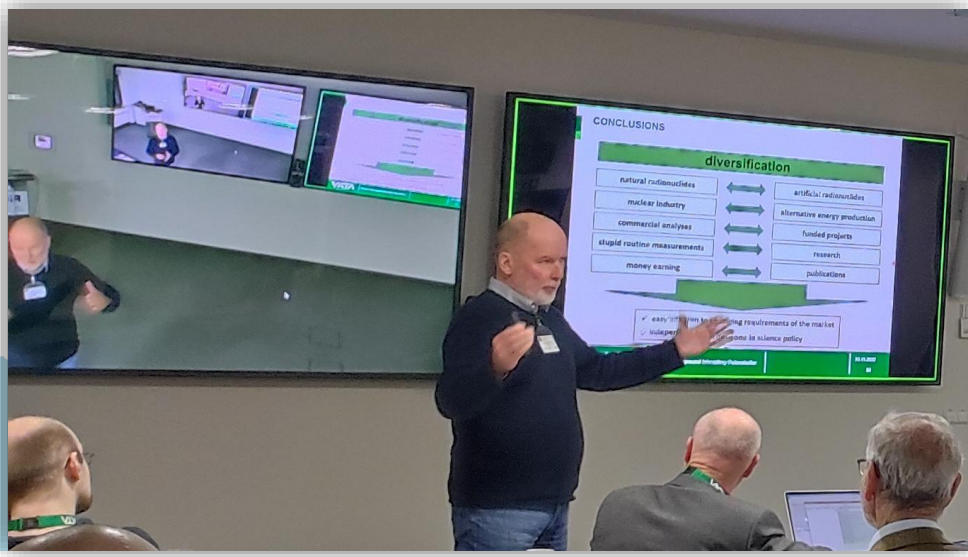

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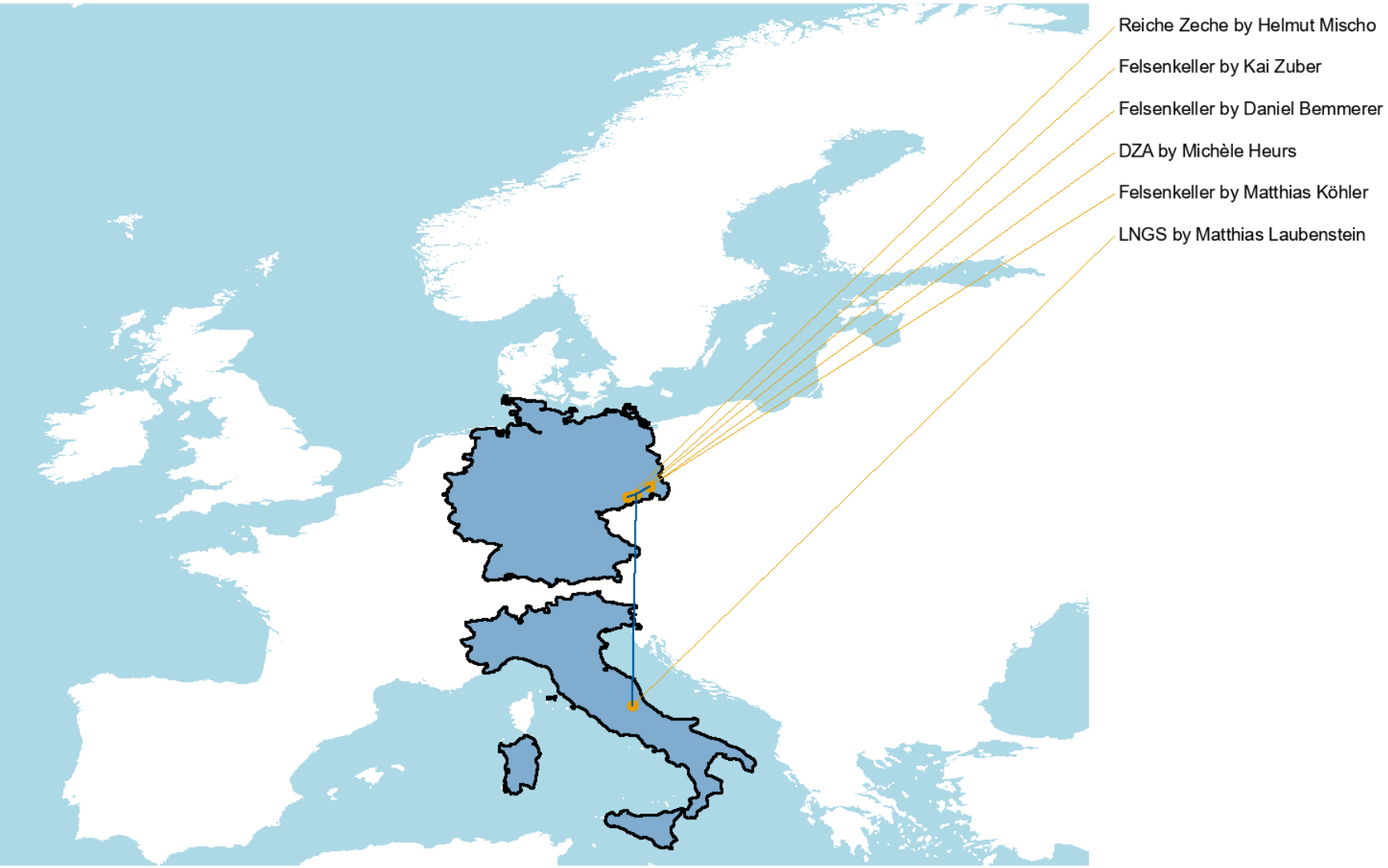

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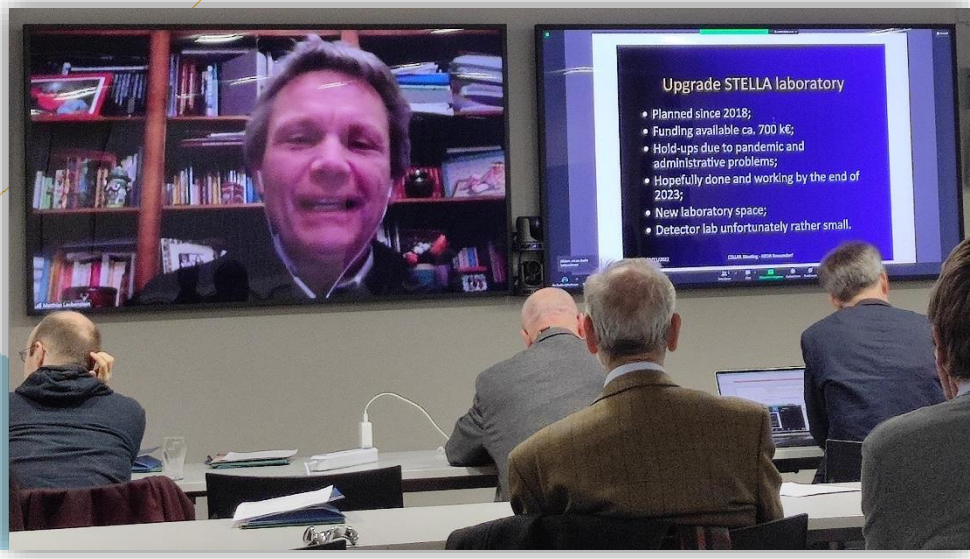

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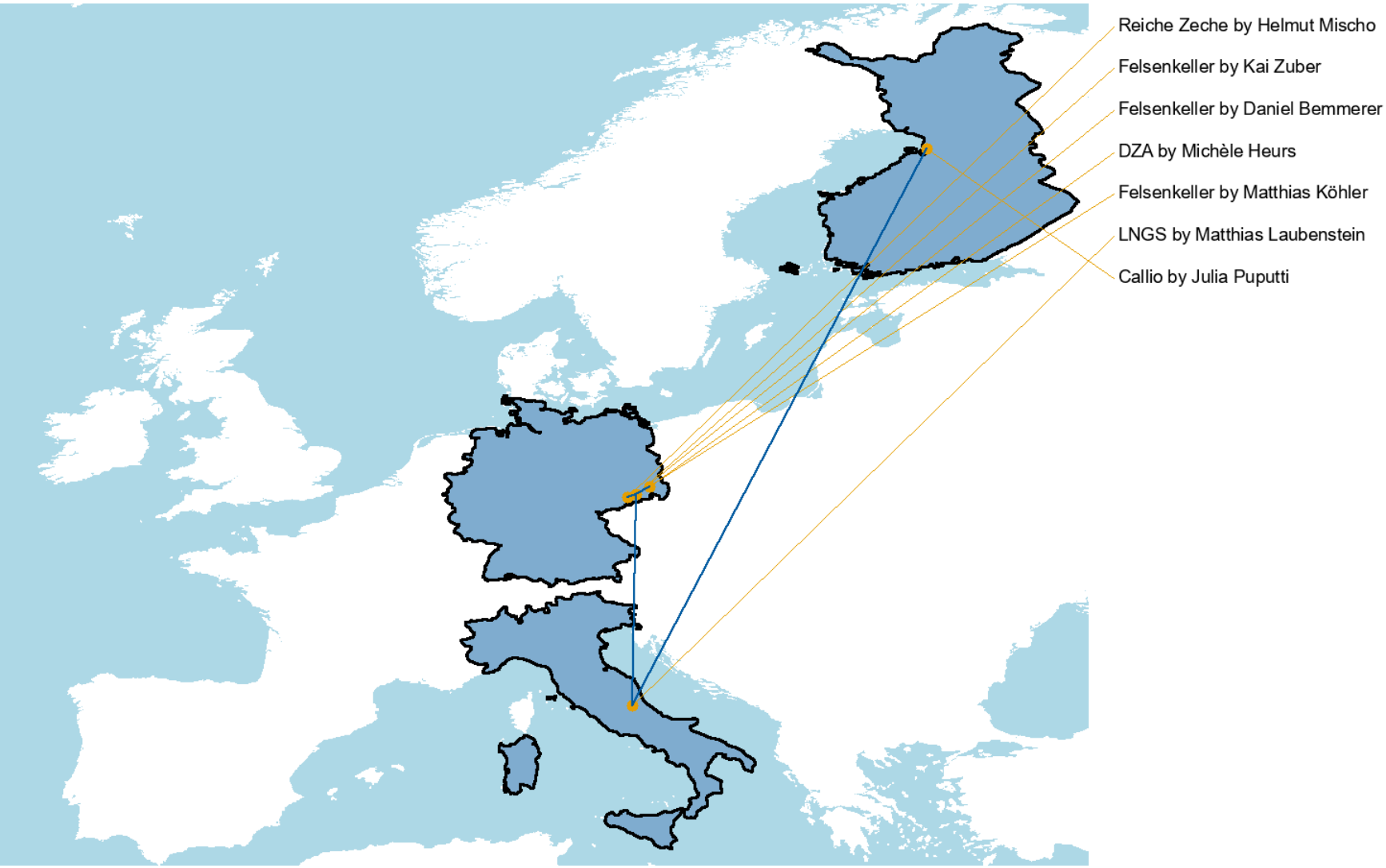

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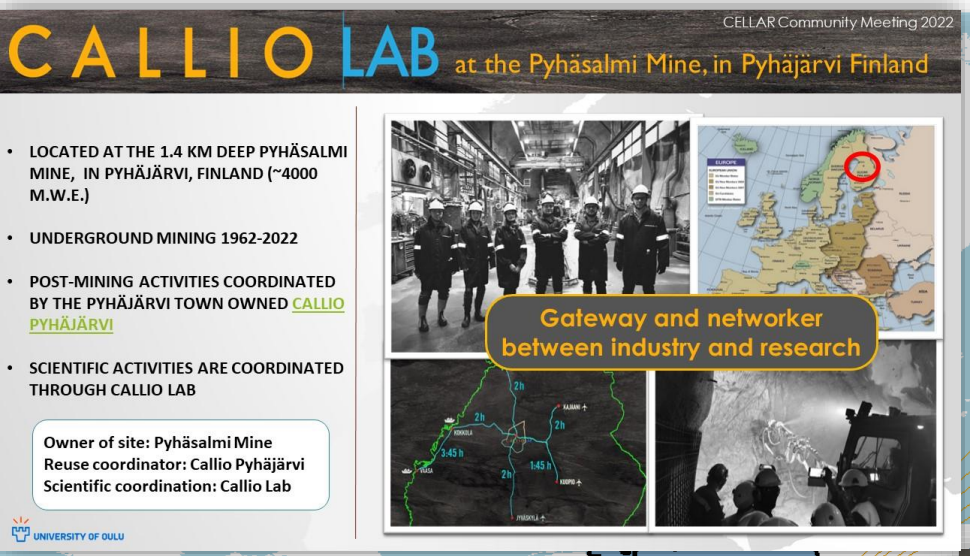

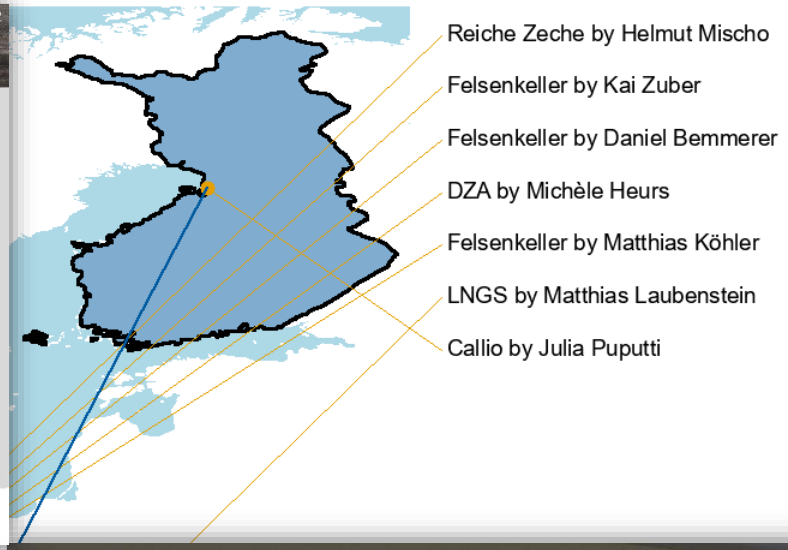

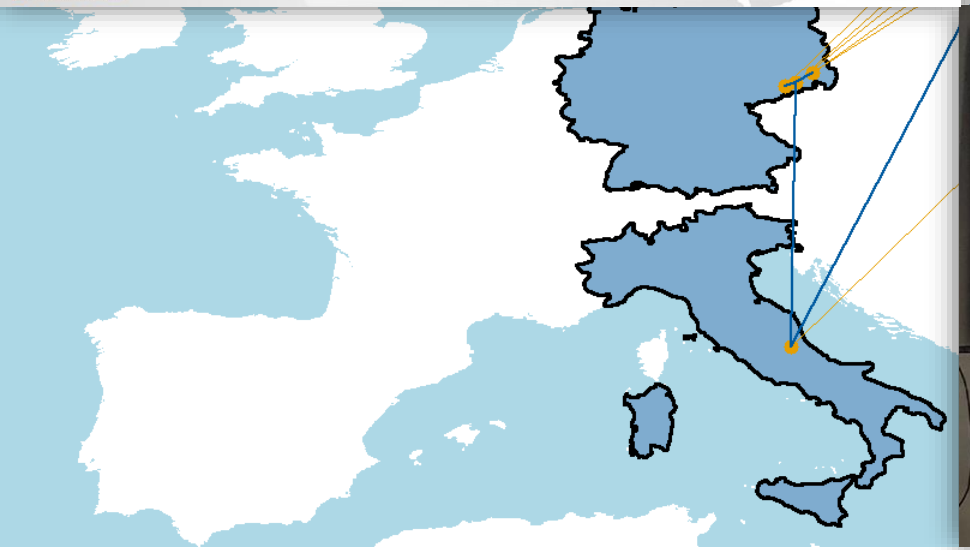

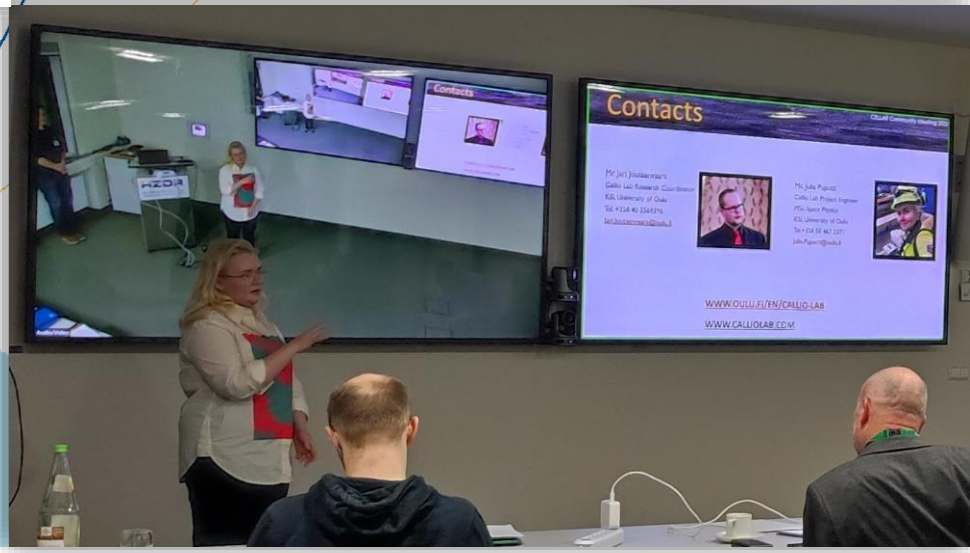

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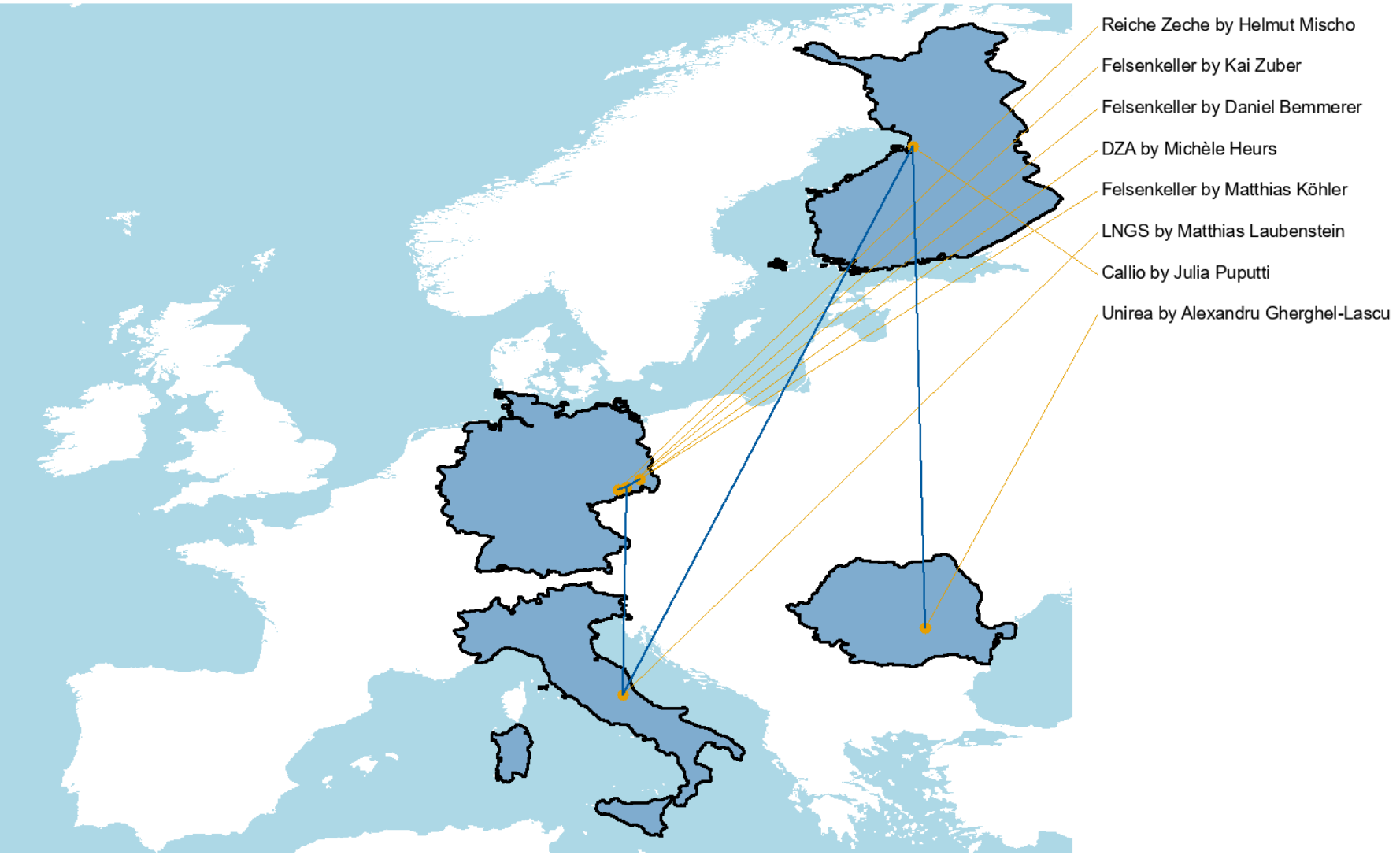

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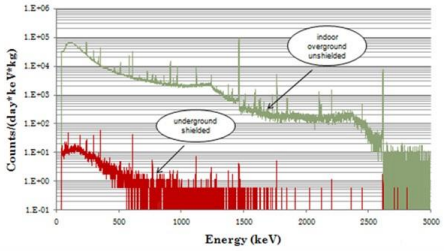
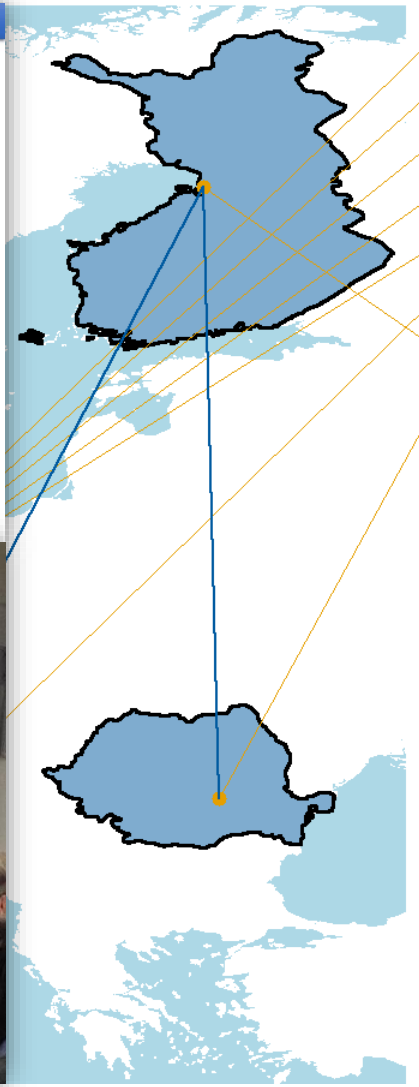
Low background Gamma spectrometry

CANBERRA GeHP rel. efic. 136%





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Unirea by Alexandru Gherghel-Lascu

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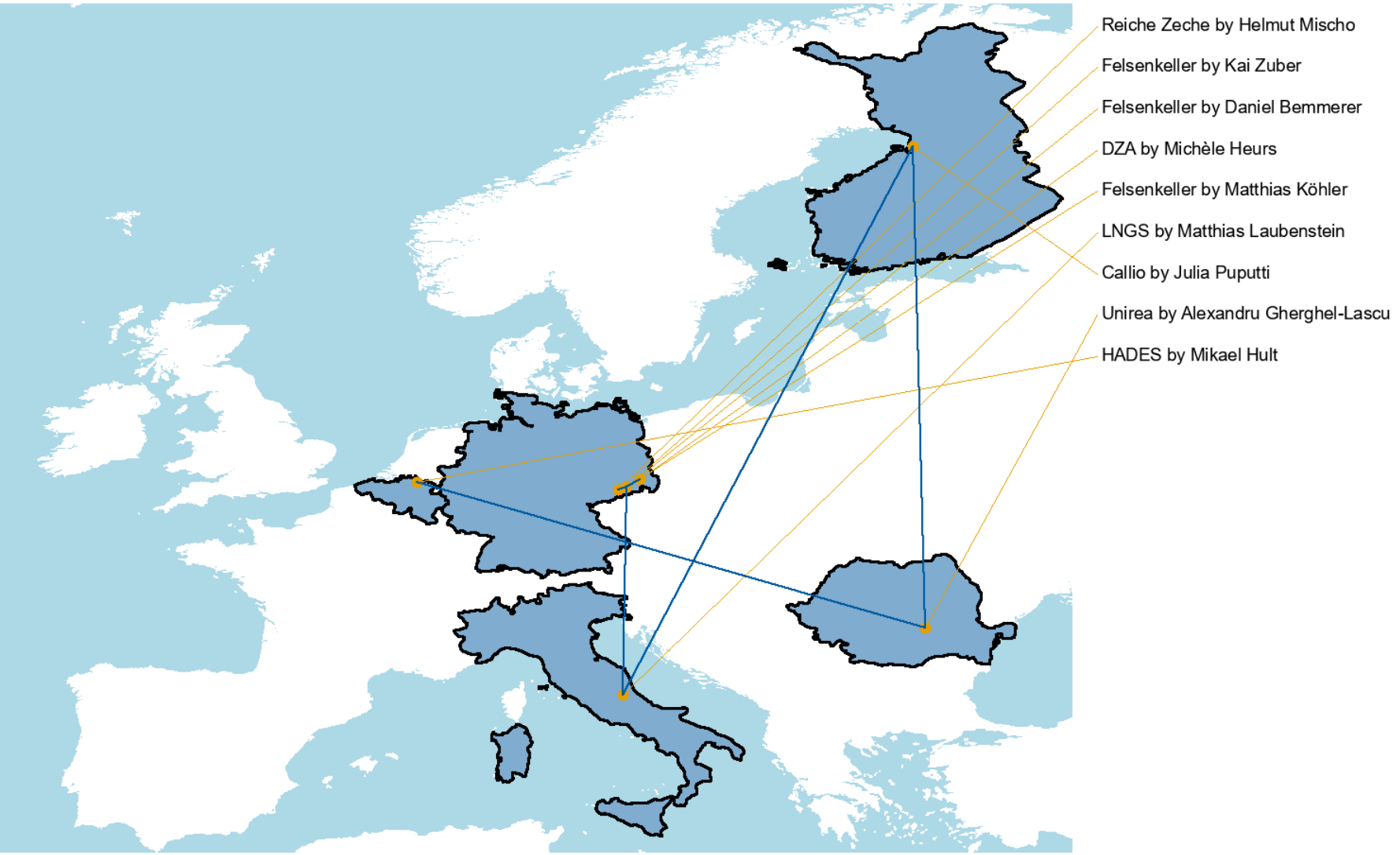

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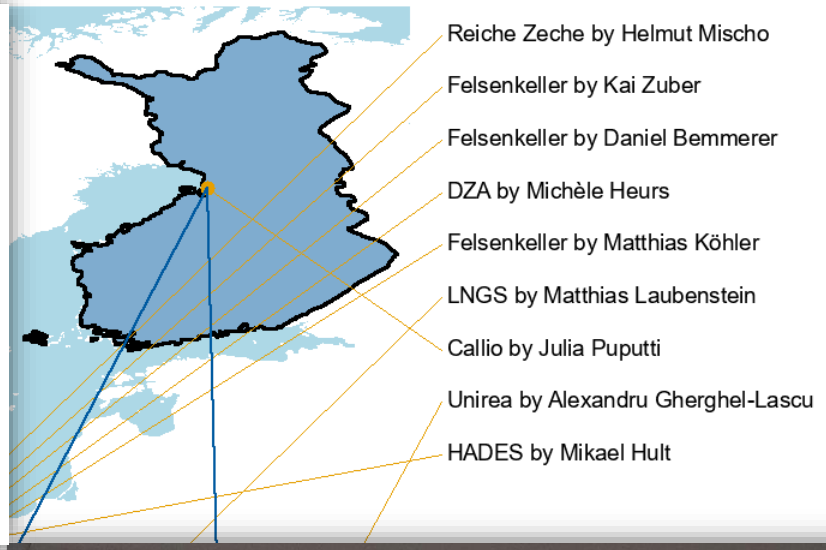
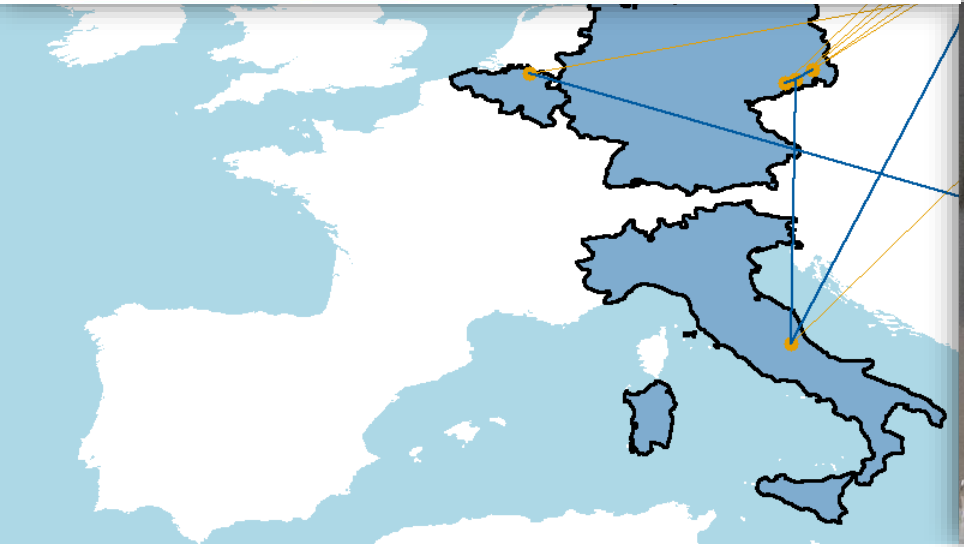
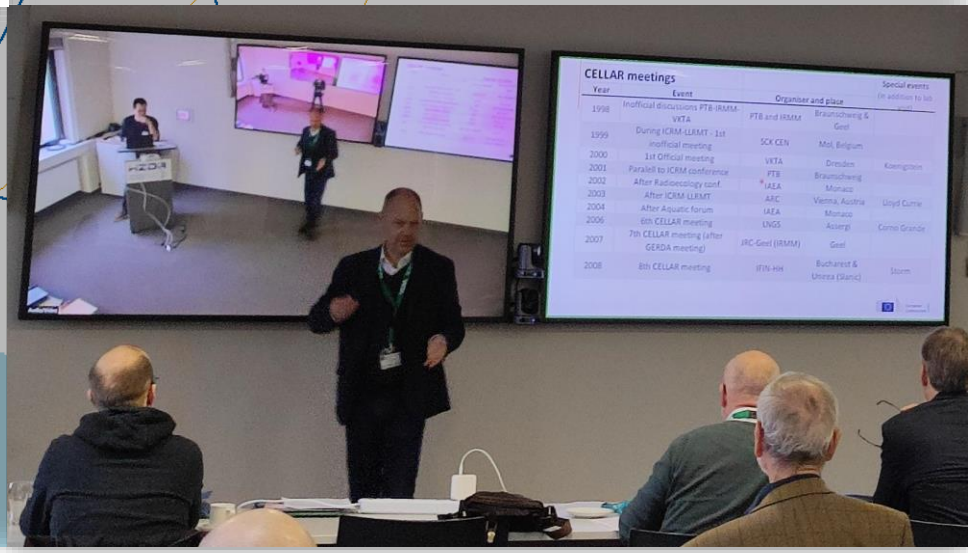
HADES

- 8 ultra low-background HPGe-detecor systems
  - SAGe-well detectors, BEGe, REGe, XtRa
- 2 systems for scanning deadlayers (via LEGEND)
- 2 Systems for detector testing (via LEGEND)
- Storage of materials (including a "normal" freezer)
- ISO/IEC 17025

- Science in the deep underground. Short version – YouTube







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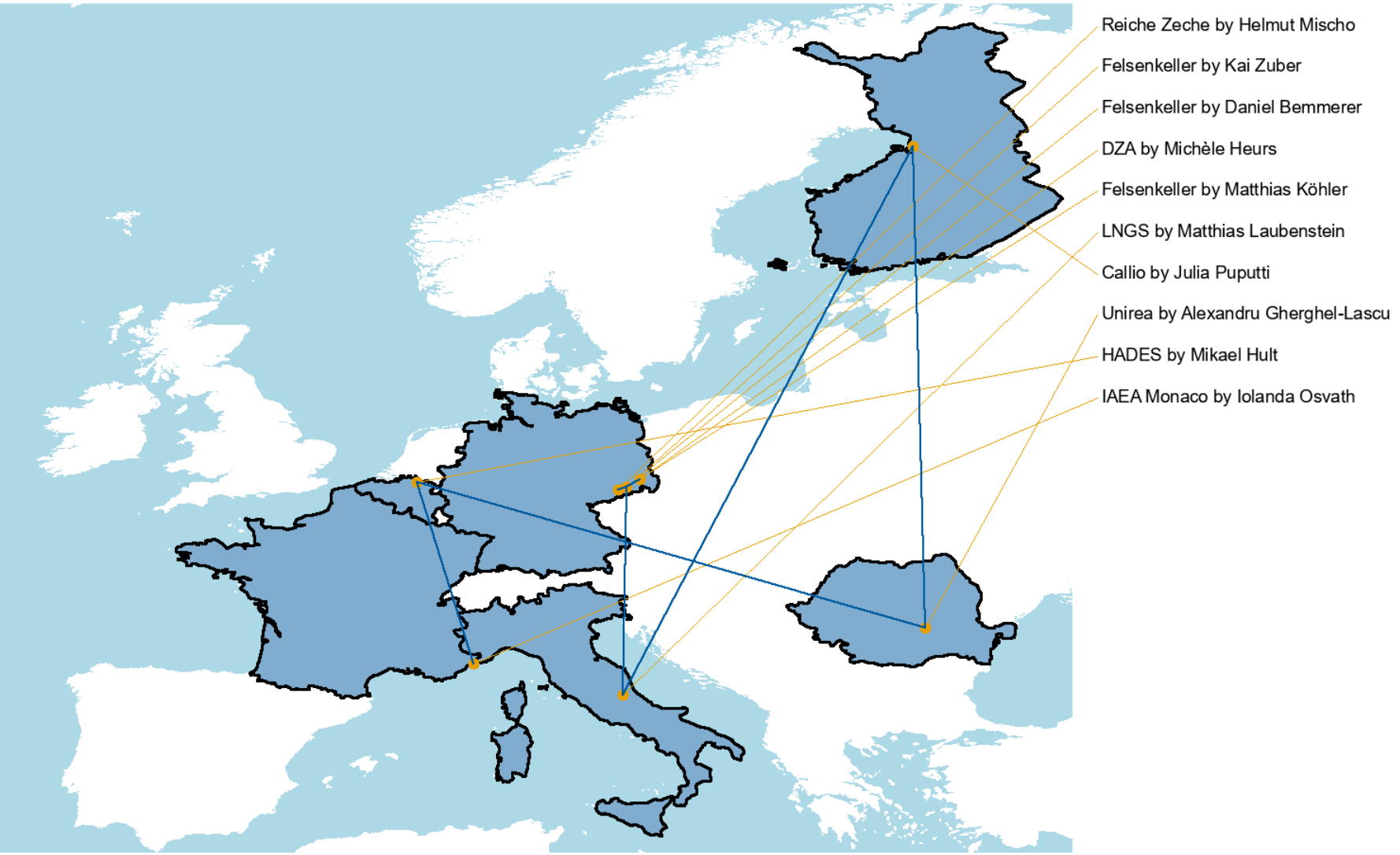

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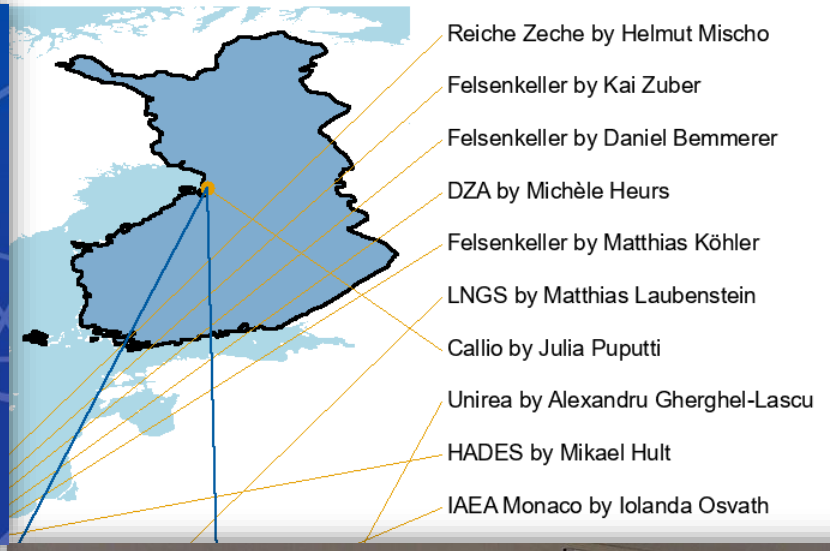

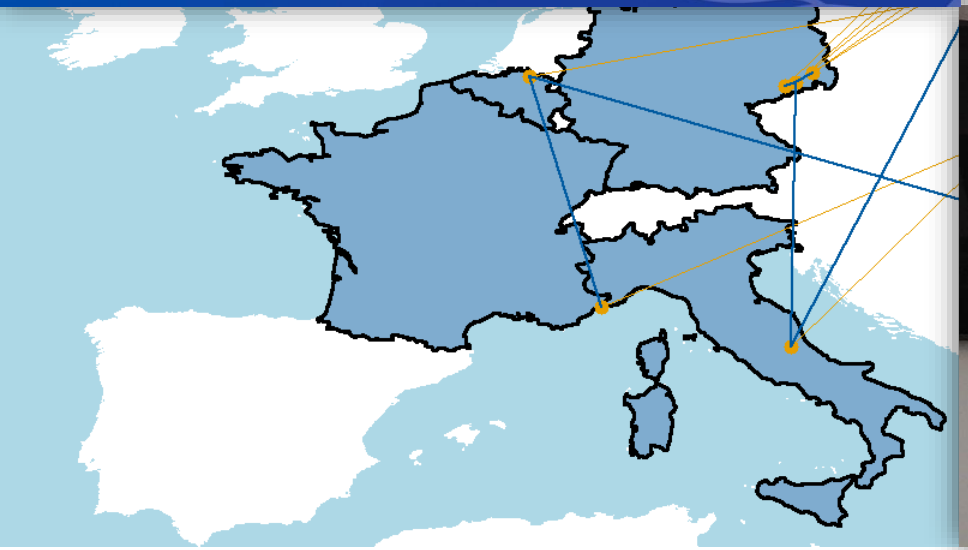

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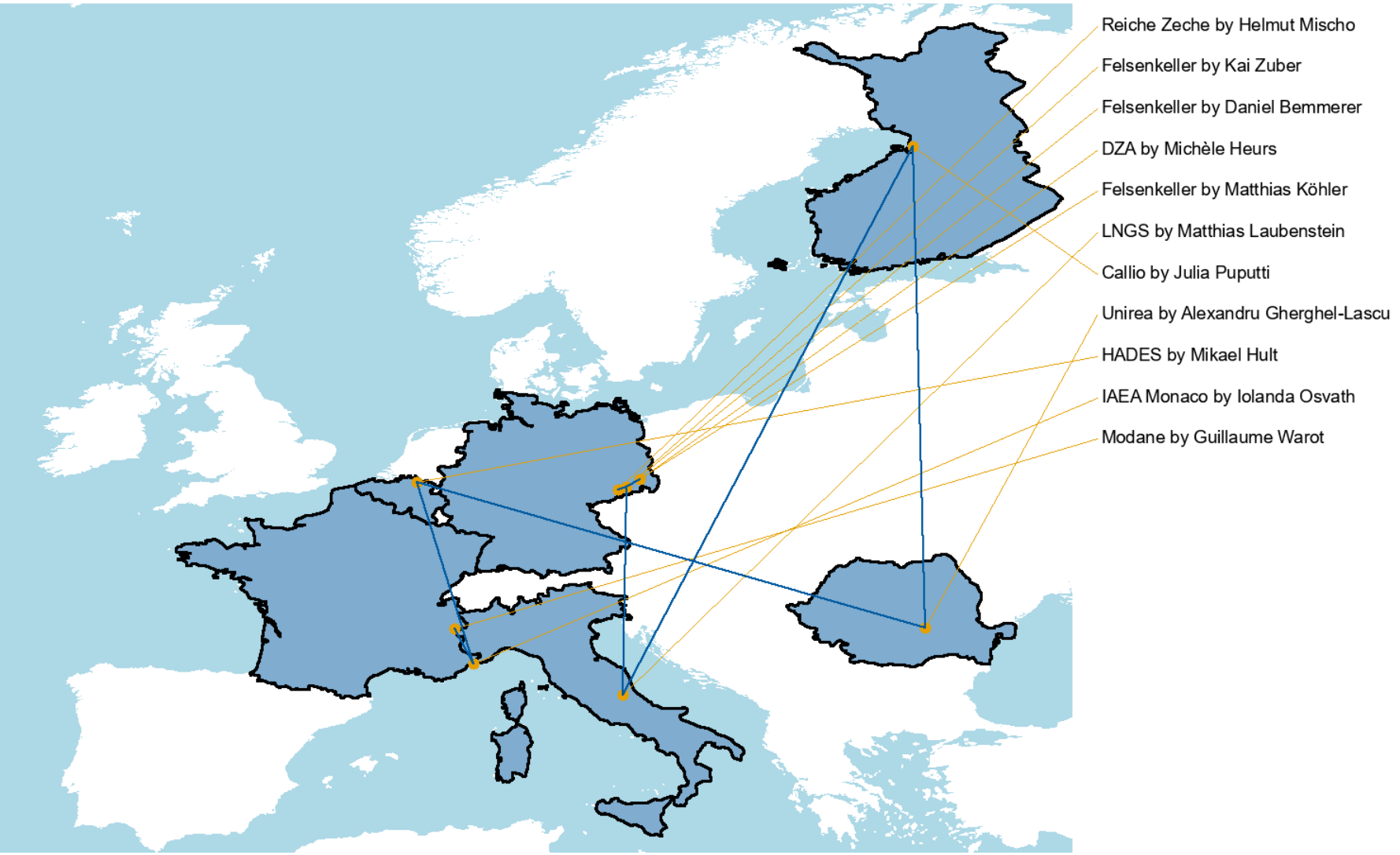

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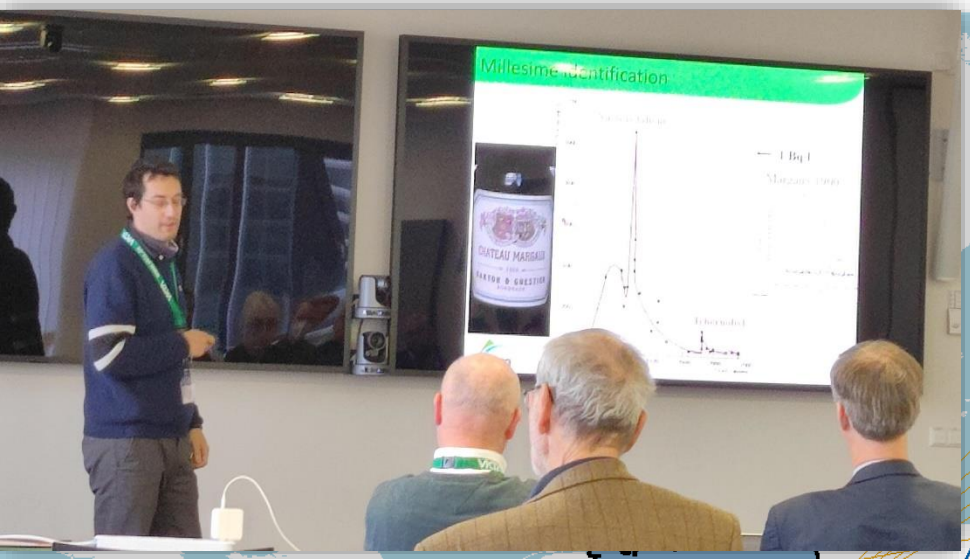

Modane by Guillaume Warot

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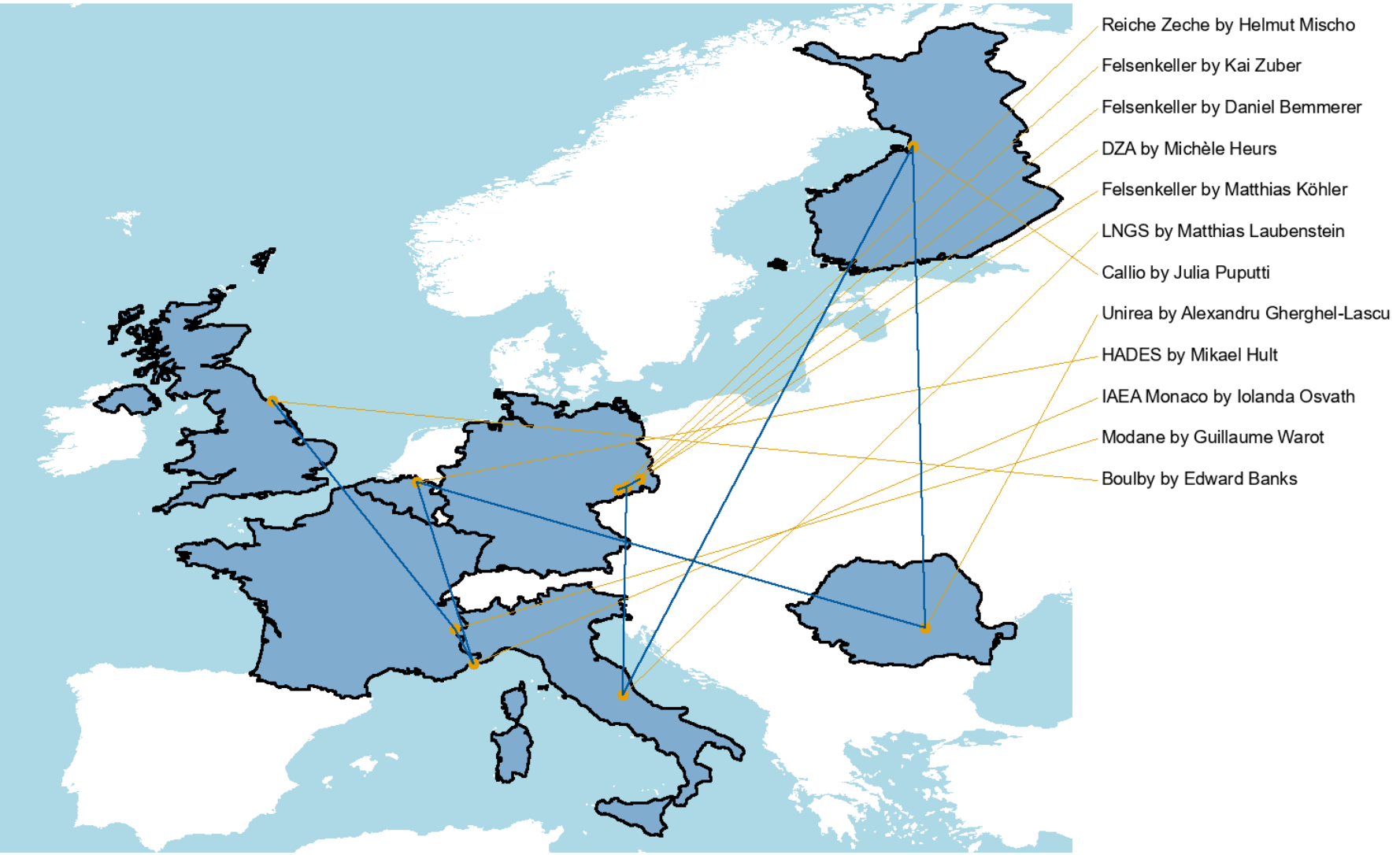

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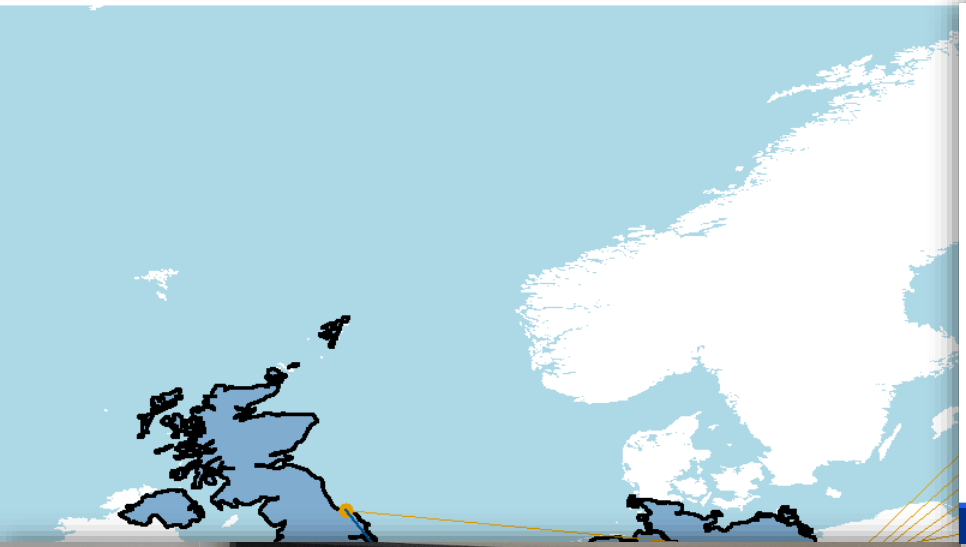

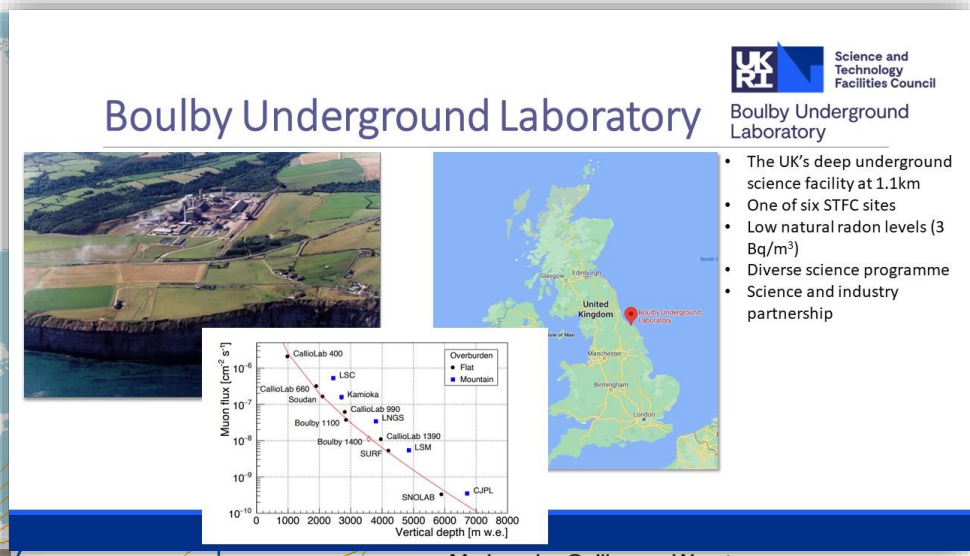

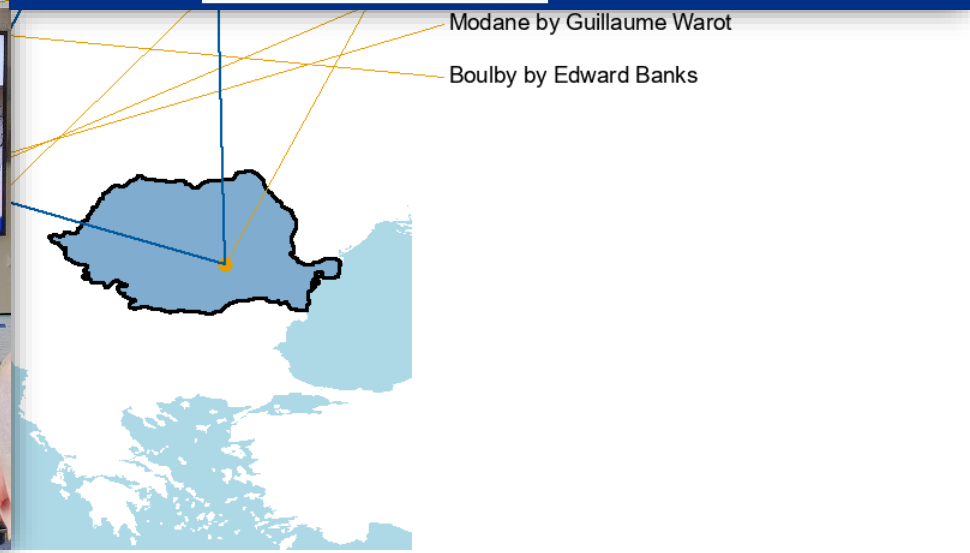

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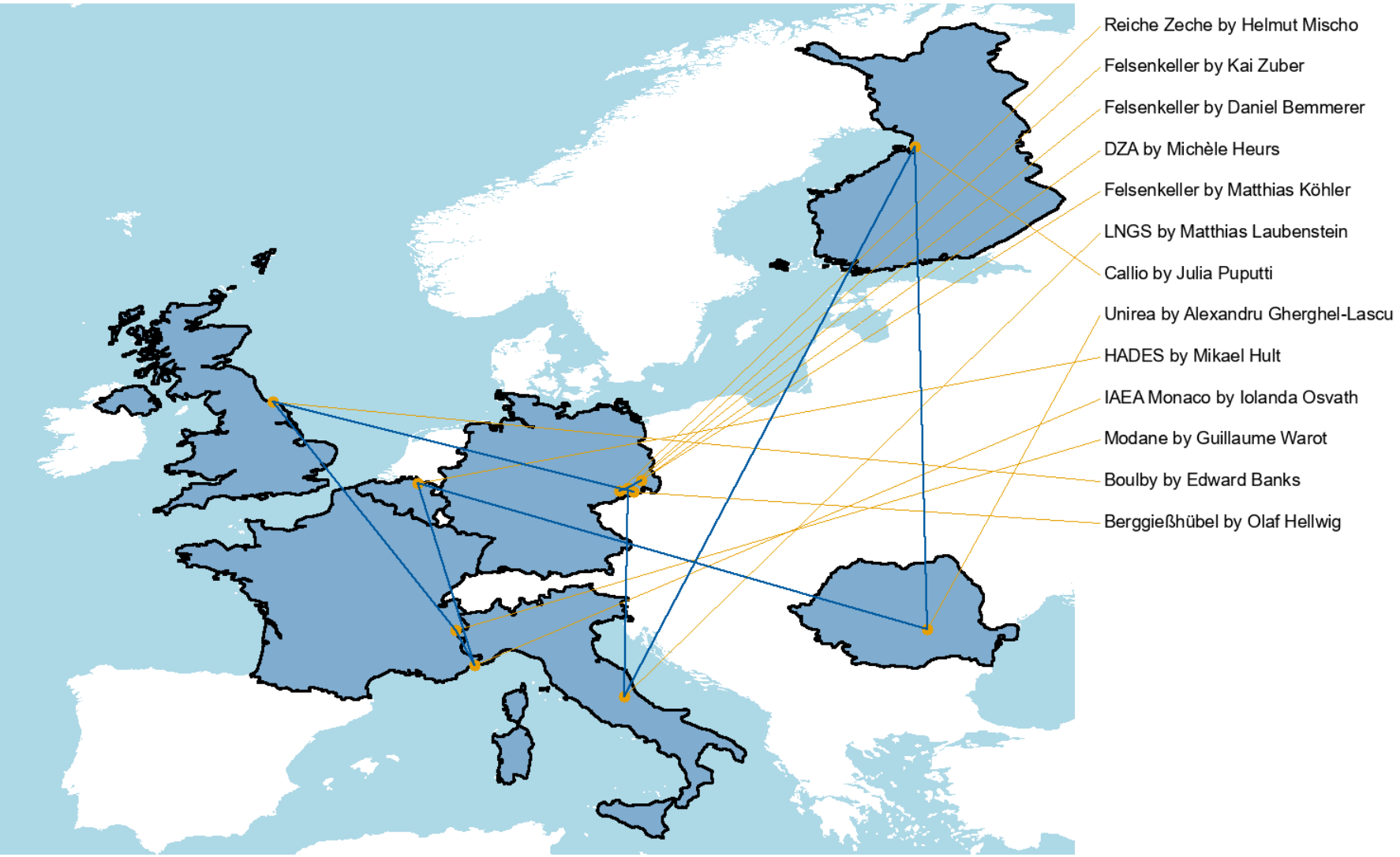

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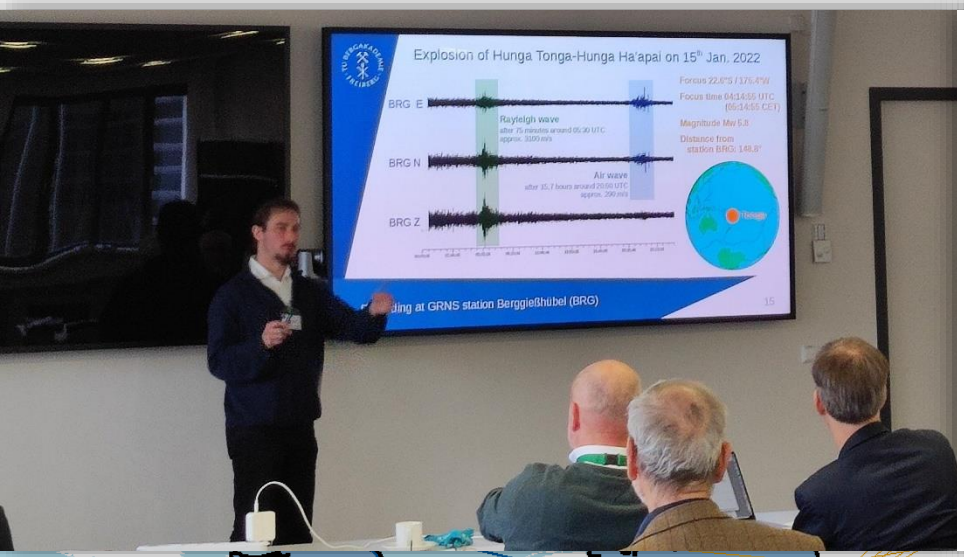

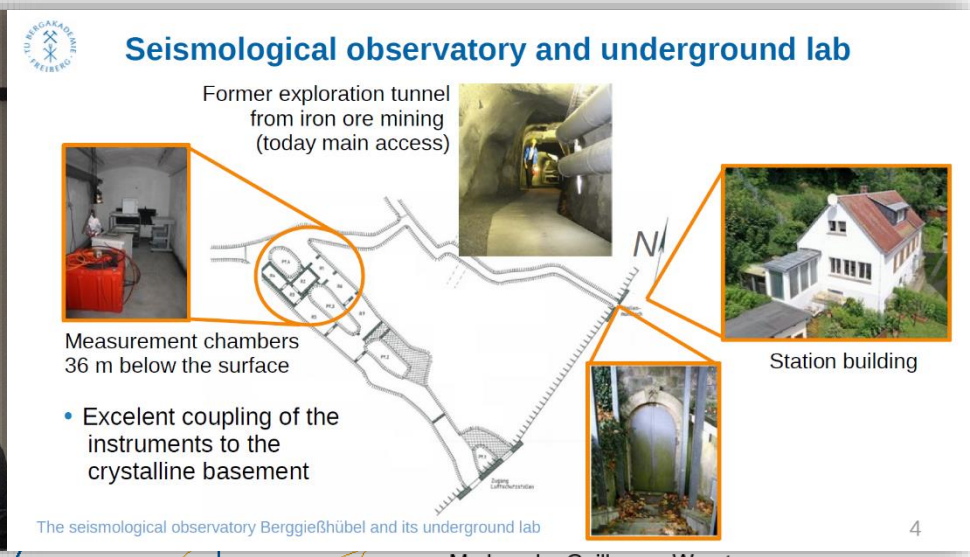

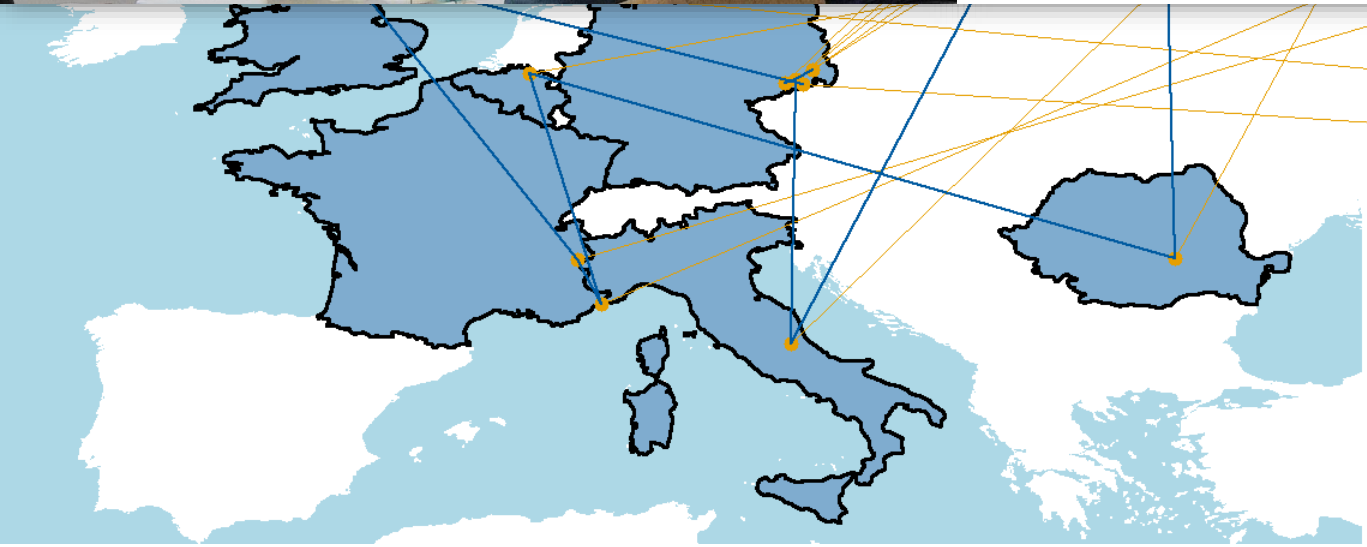

Innovation Session

Latest development of the specialty ultra-low background detector manufacturing *Pascal Quirin*

Building 114, Room 201/202, HZDR 11:10 - 11:30

Developments in low level radiation detector technology *Paul Schotanus*

Building 114, Room 201/202, HZDR 11:30 - 11:50

Presentation of SHR - an universal High Precision High Voltage Laboratory Source and Measure Unit by iseg, manufact…
Tobias Pöthig

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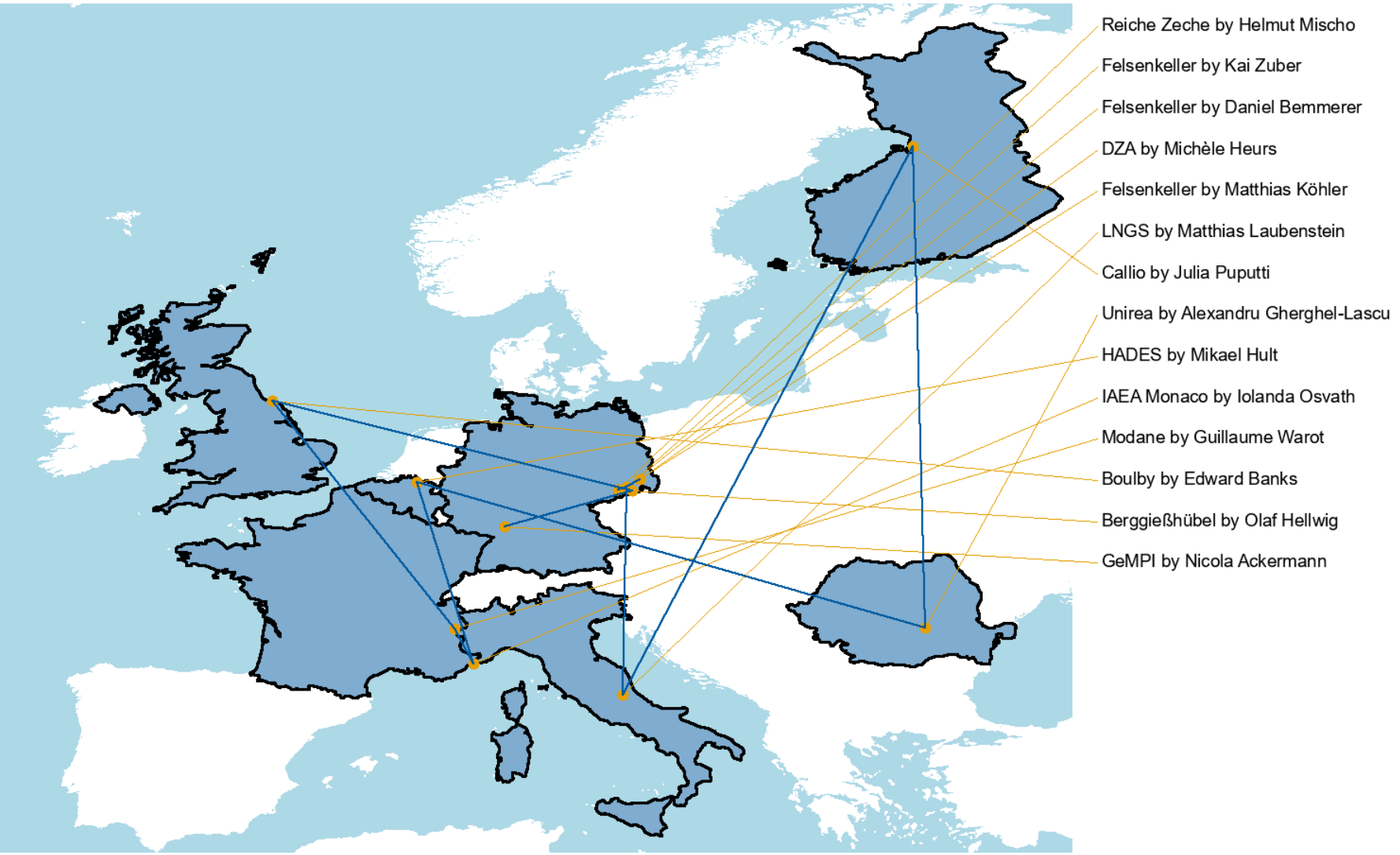

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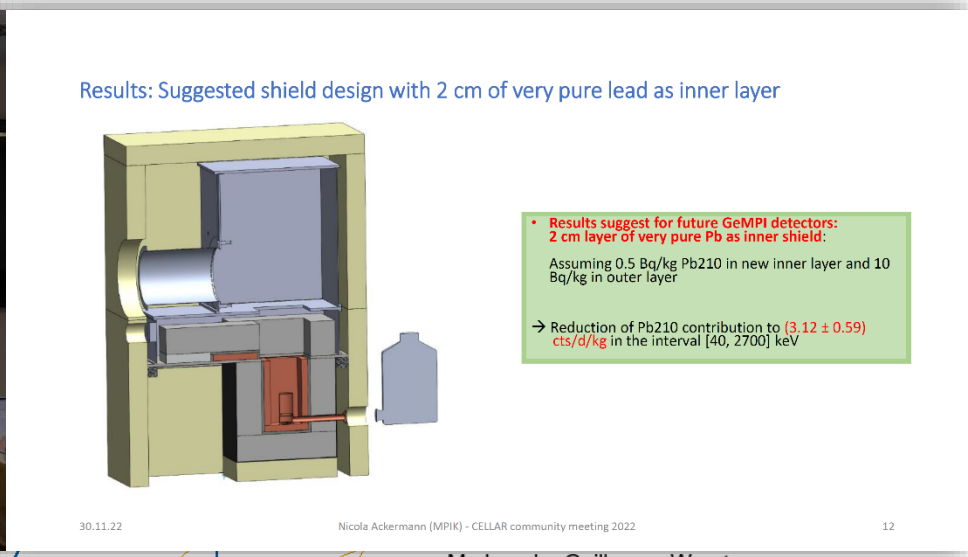

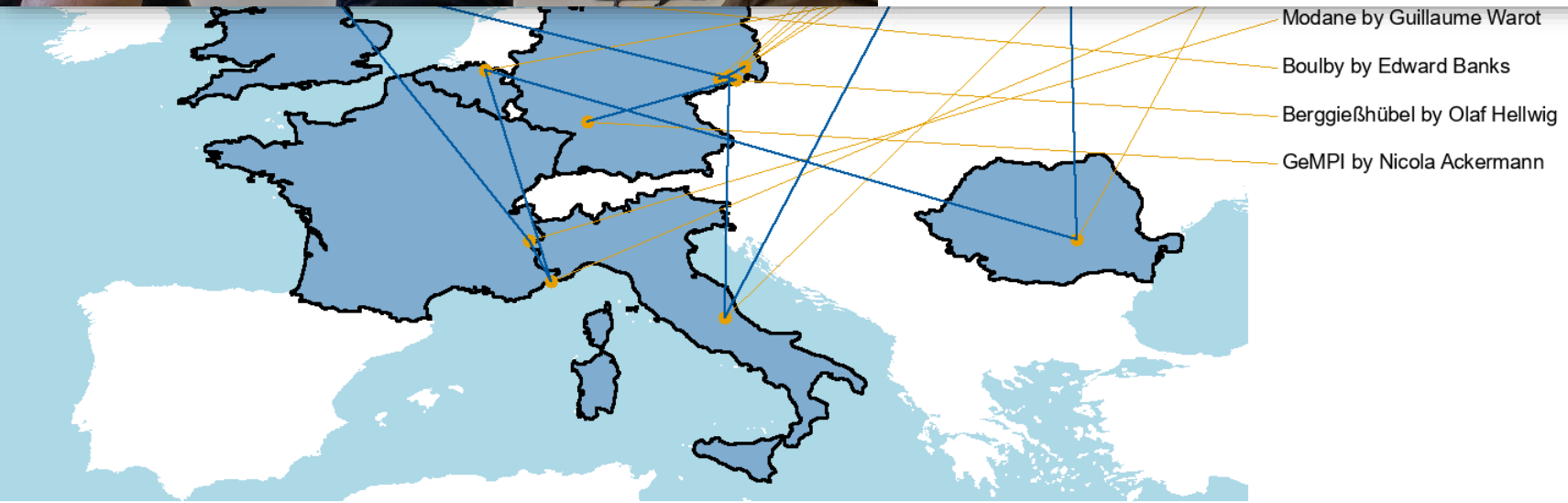

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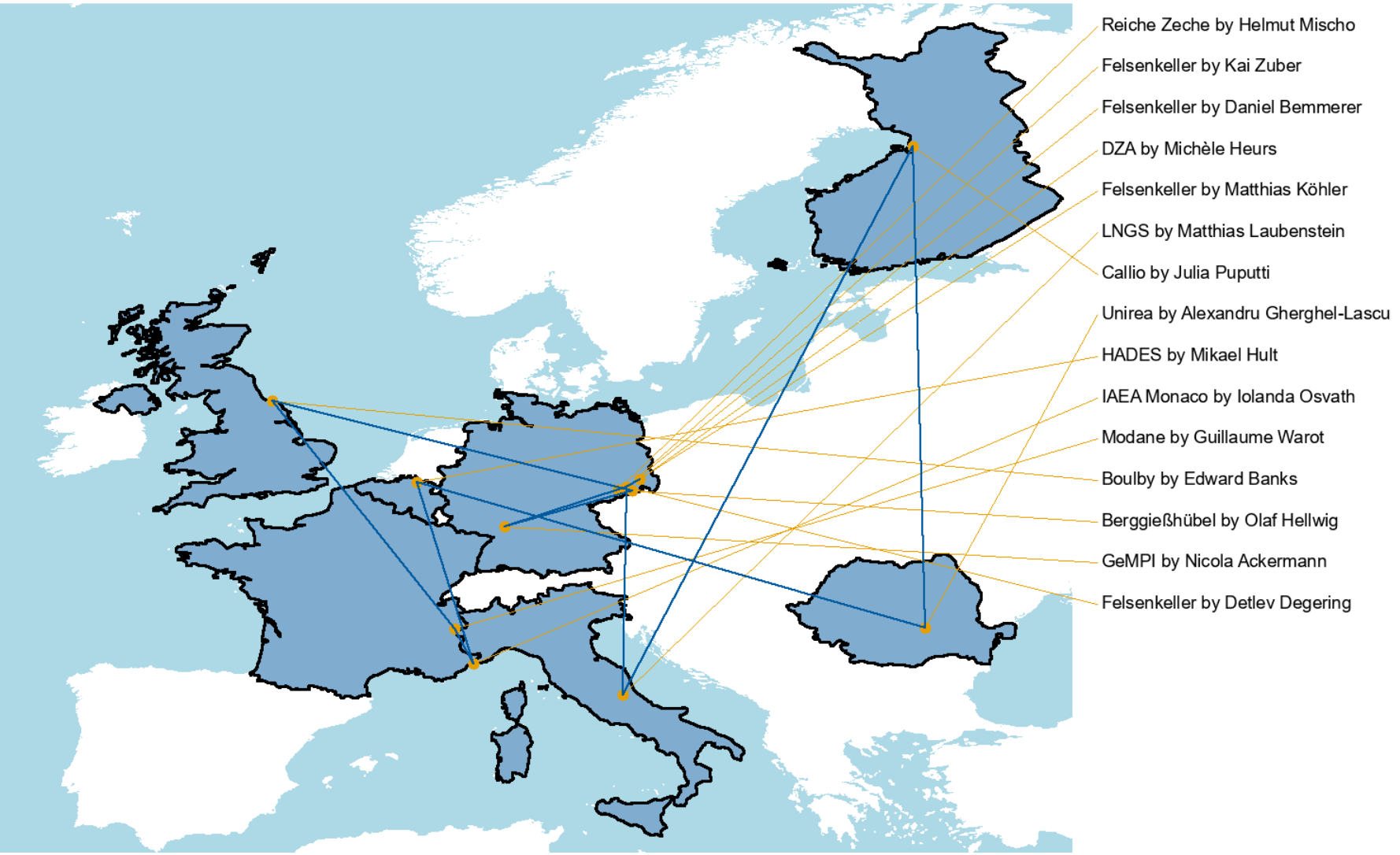

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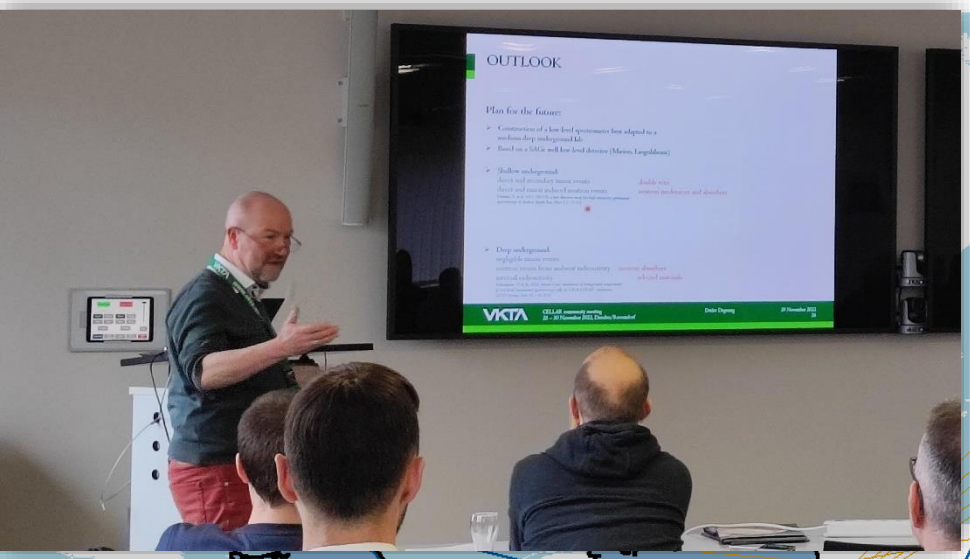

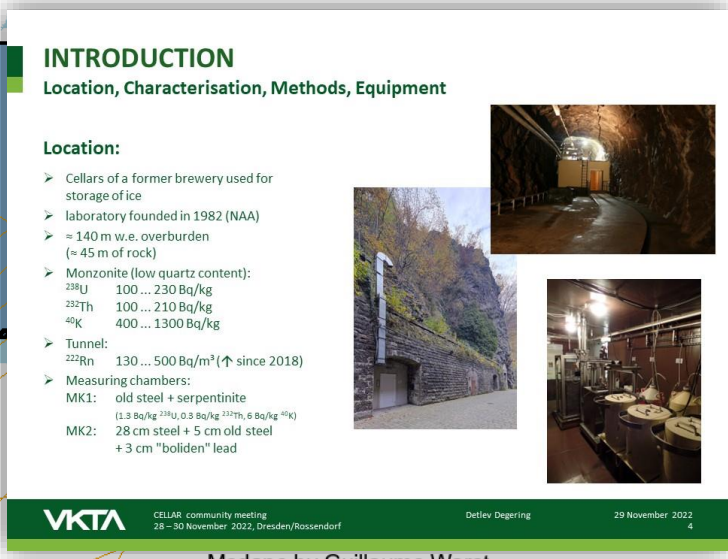

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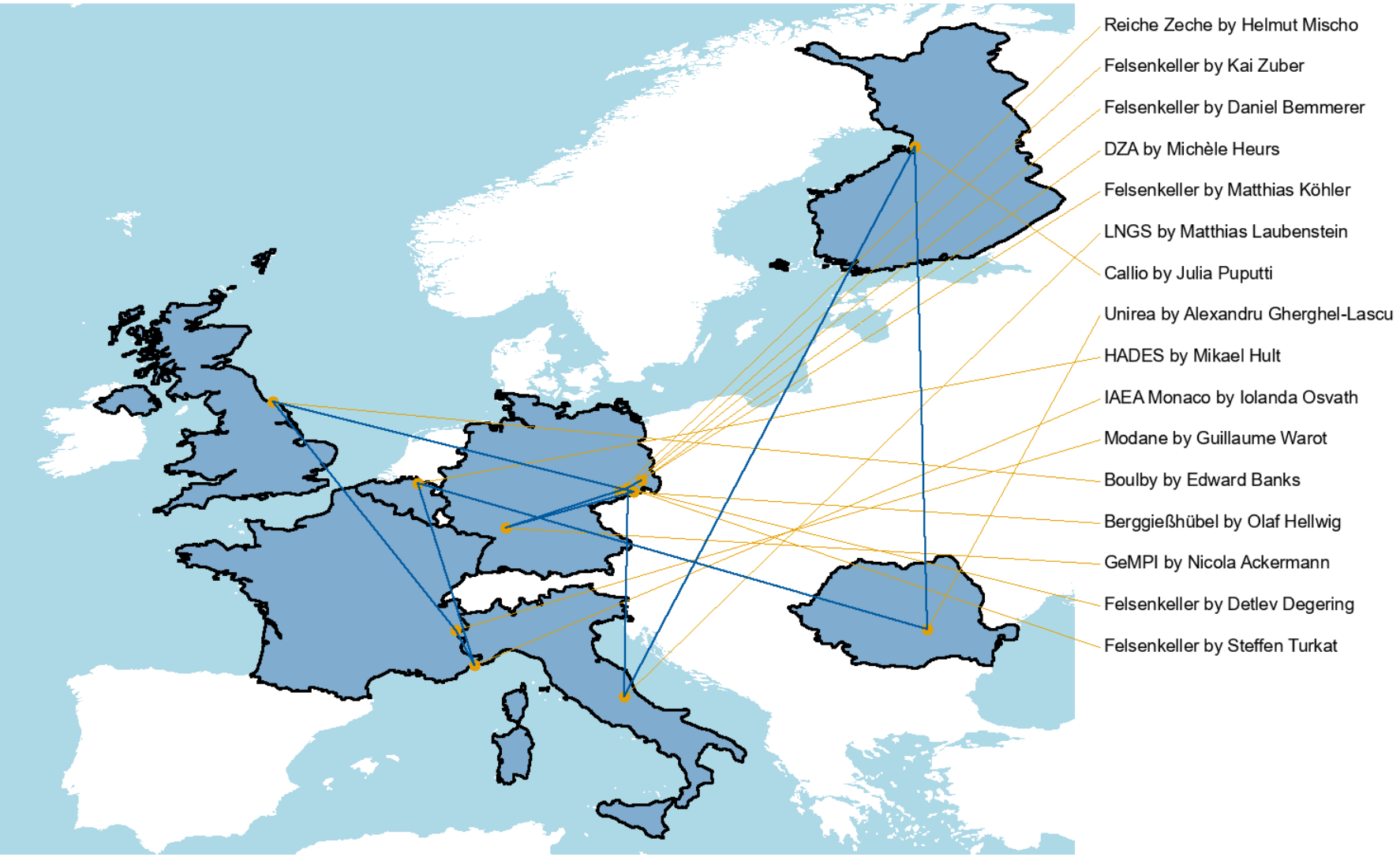

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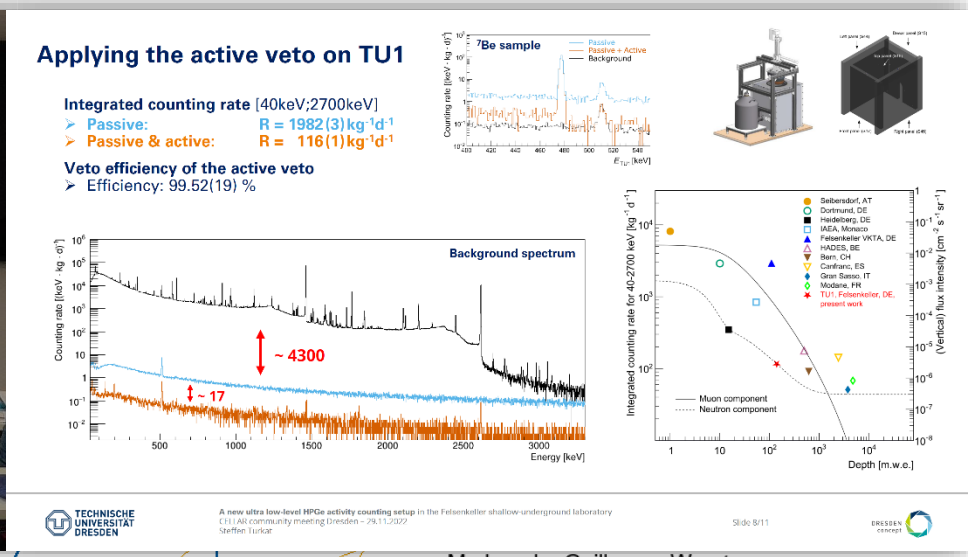
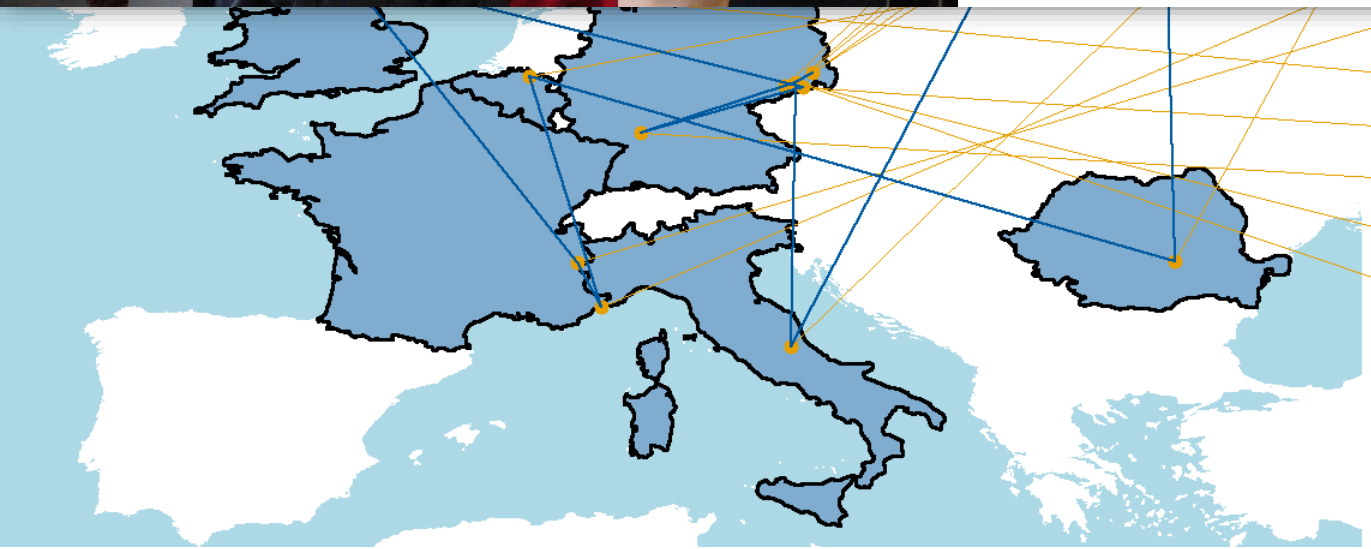




Modane by Guillaume Warot

Boulby by Edward Banks

Berggießhübel by Olaf Hellwig

GeMPI by Nicola Ackermann

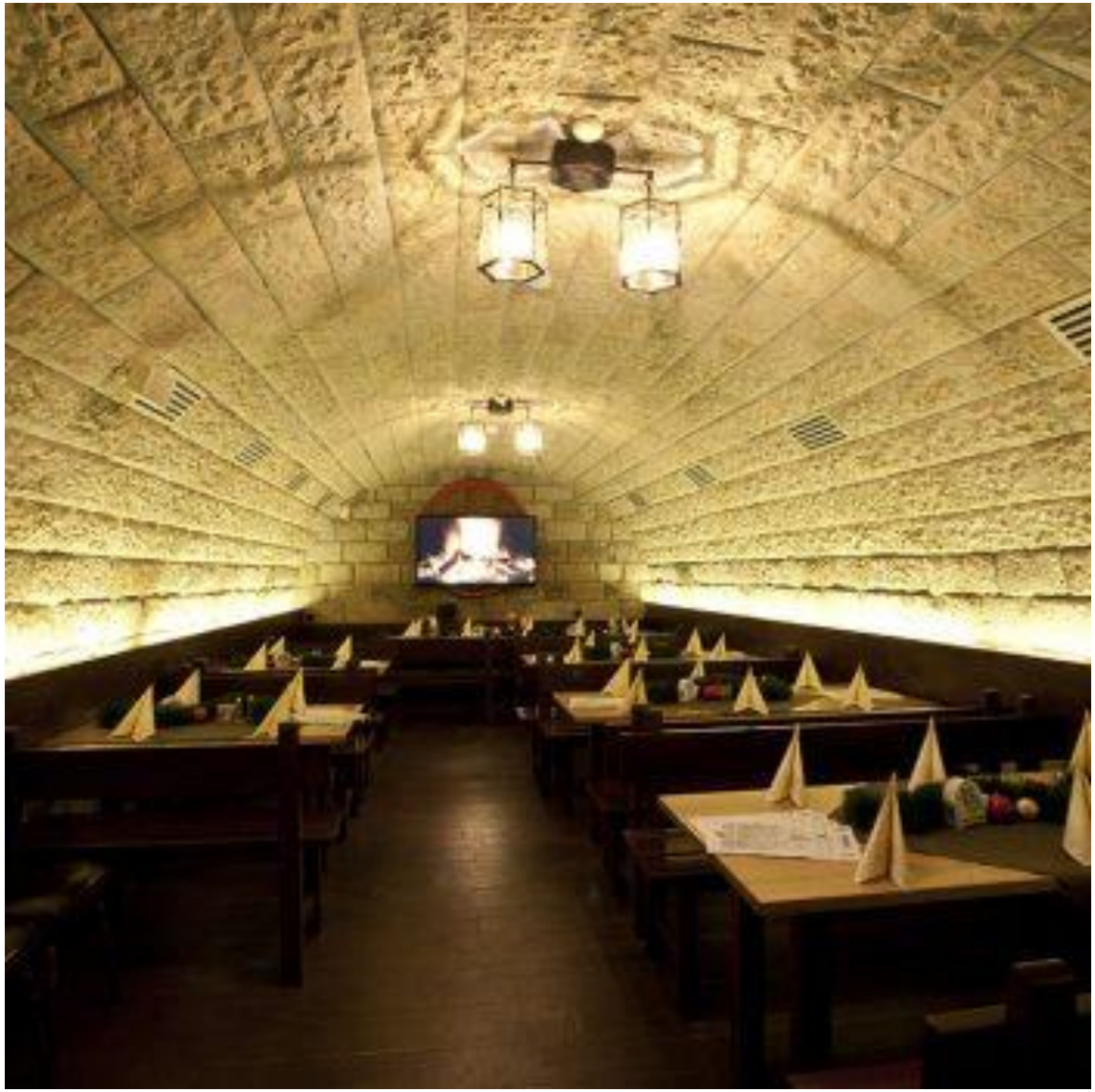
Felsenkeller by Detlev Degering

Felsenkeller by Steffen Turkat

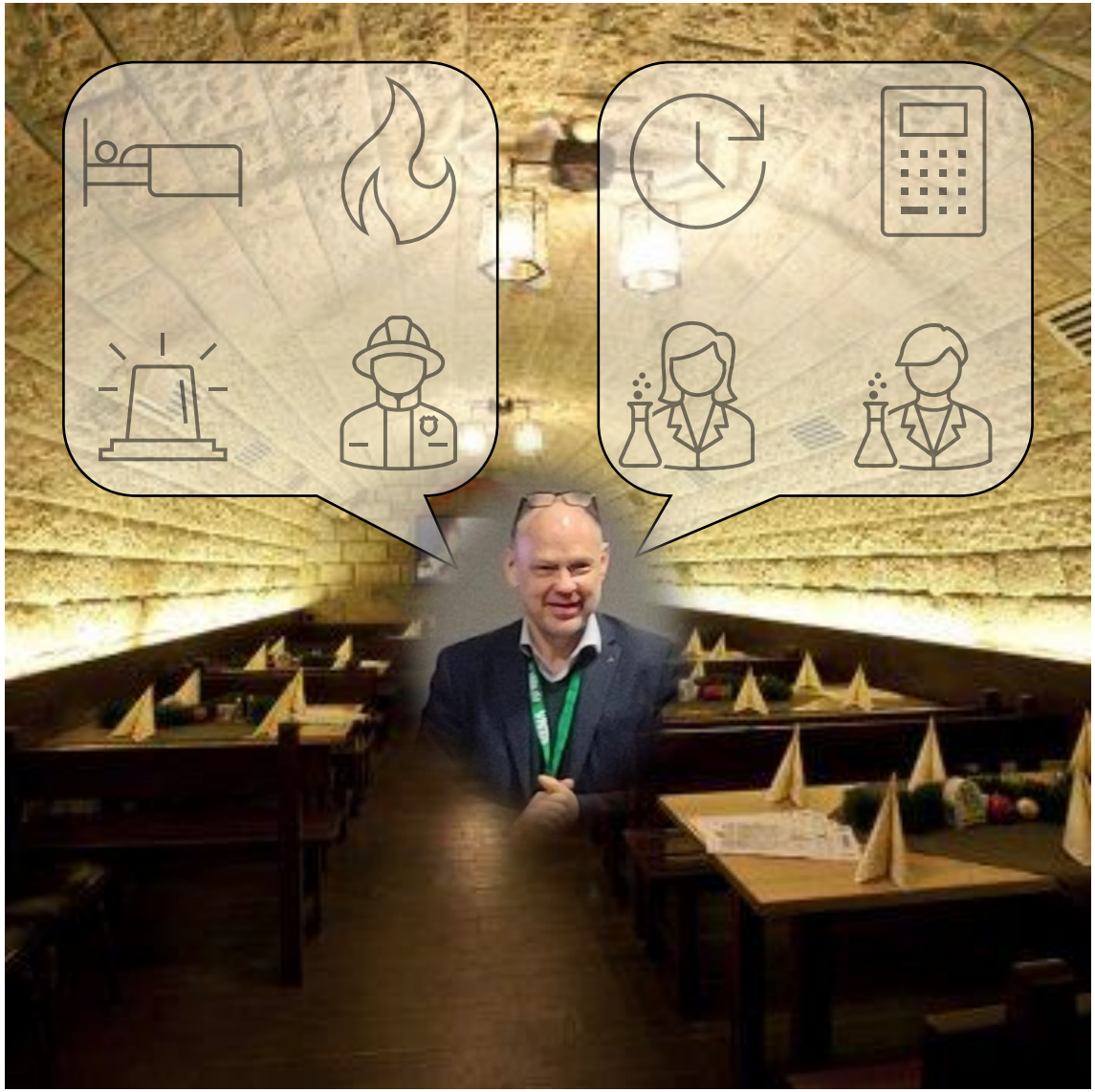
Poster Session and Innovation Exhibition

POSTER: Low background X-ray setup *Christoph Seibt*	**POSTER: Pulse …** *Yingjie …* *Building 114, upp…* 14:00 - 15:00	**POSTER: Invest…** *Marie …* *Building 114, upp…* 14:00 - 15:00	**POSTER: Felsenkeller Neutron Background** *Thomas Hensel*	**POSTER: C0BRA: Low background measurements with CdZnTe detectors** *Juliane Volkmer*	**Innovation session: Coffee exhibition** *Building 114, Room 203, HZDR* 14:00 - 15:00

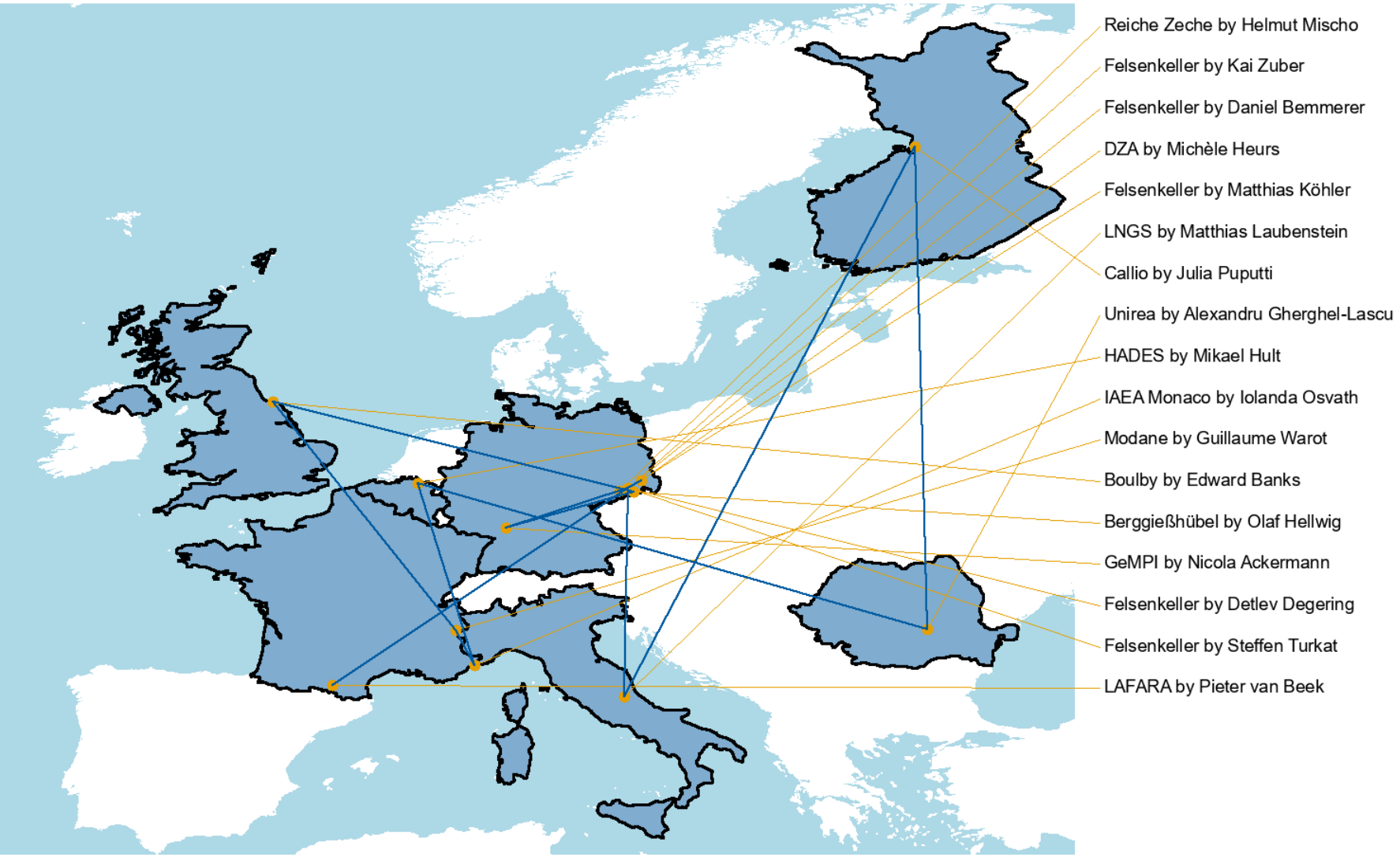
Conference Dinner



Dinner Talk



CELLAR Community Meeting 2022 – a trip through Europe



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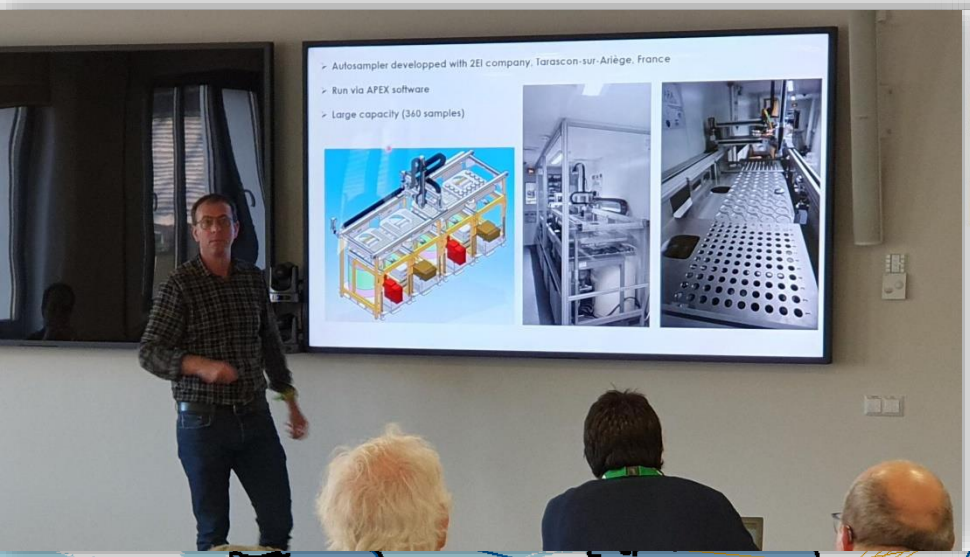


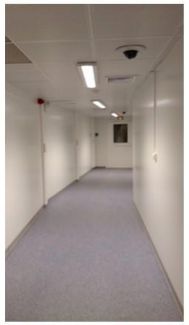
UNION EUROPÉENNE

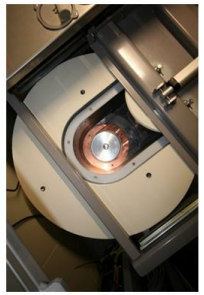
l'Europe s'engage en Occitanie

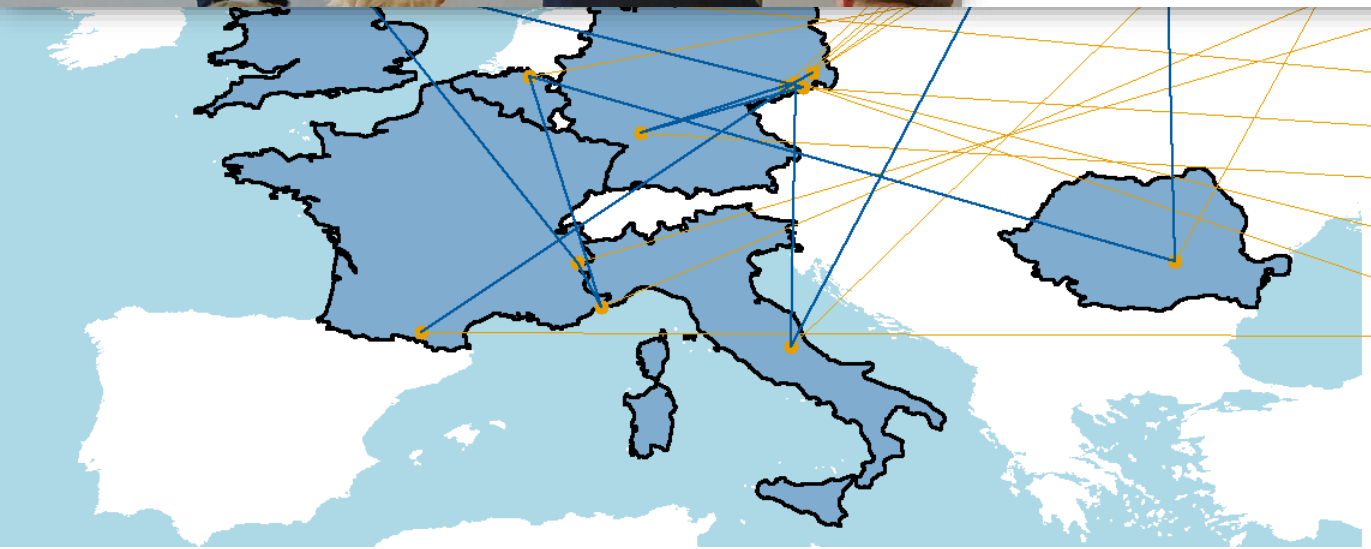
La Région Occitanie Pyrénées · Méditerranée

LAFARA underground radiolab

➢ New facility created in 2016
(FEDER funding)





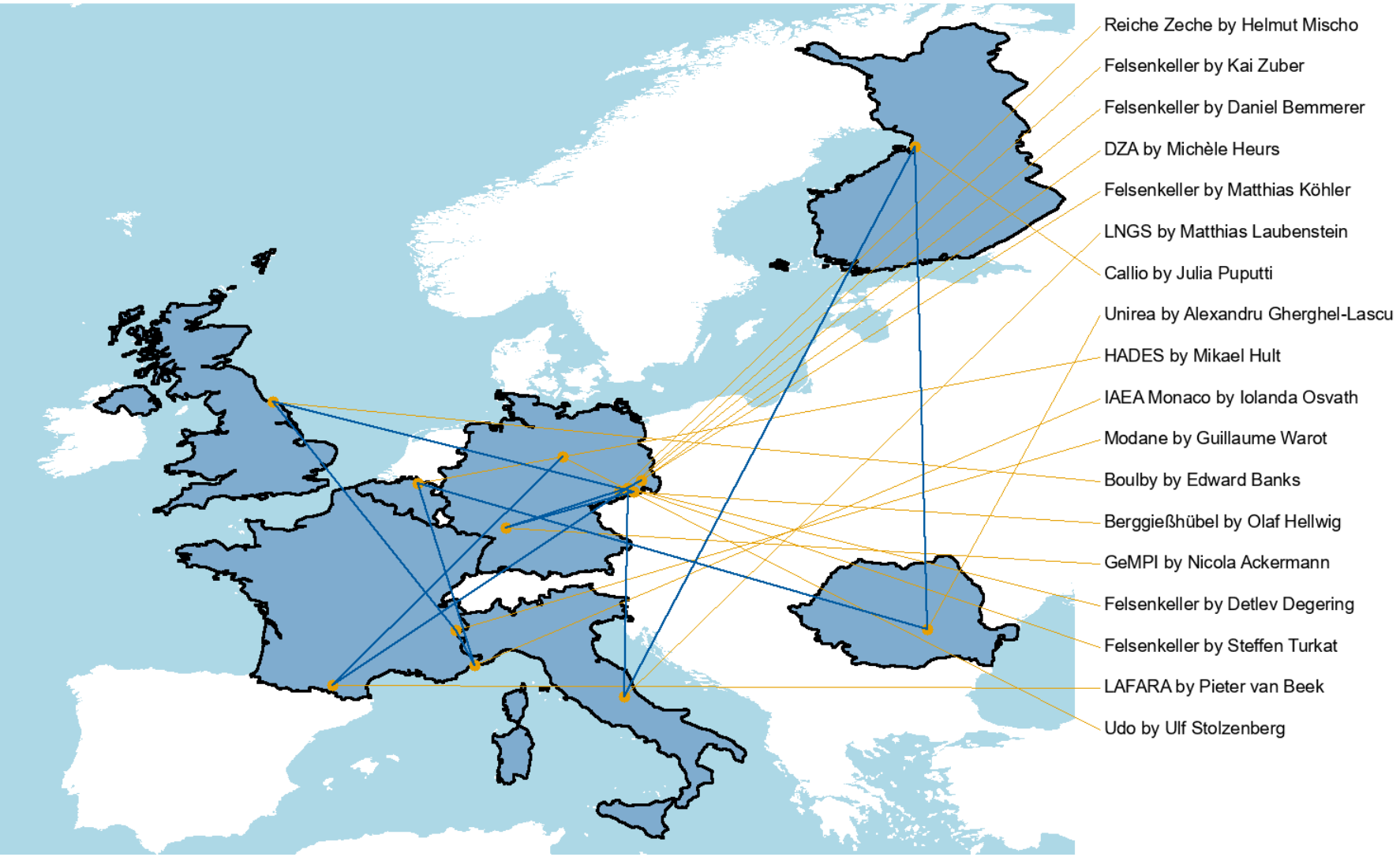



Modane by Guillaume Warot
Boulby by Edward Banks
Berggießhübel by Olaf Hellwig
GeMPI by Nicola Ackermann
Felsenkeller by Detlev Degering
Felsenkeller by Steffen Turkat
LAFARA by Pieter van Beek

DRESDEN concept

HZDR

CELLAR Community Meeting 2022 – a trip through Europe



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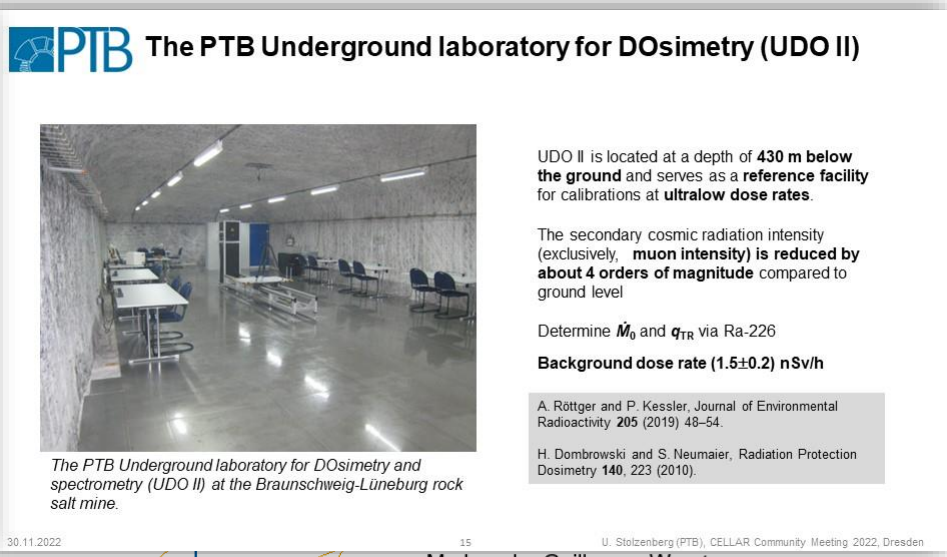

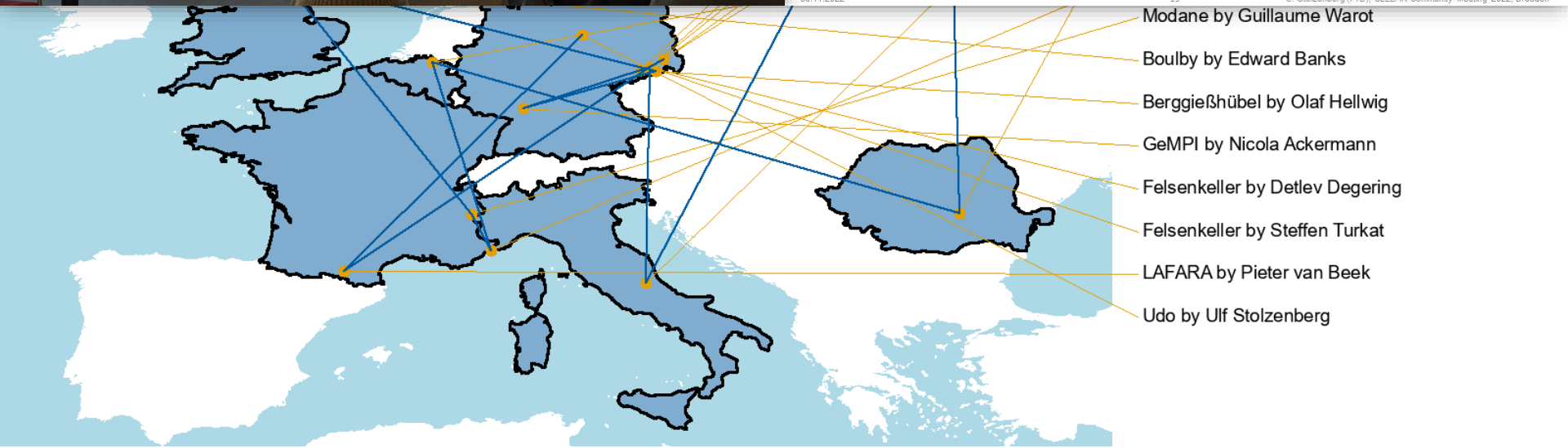

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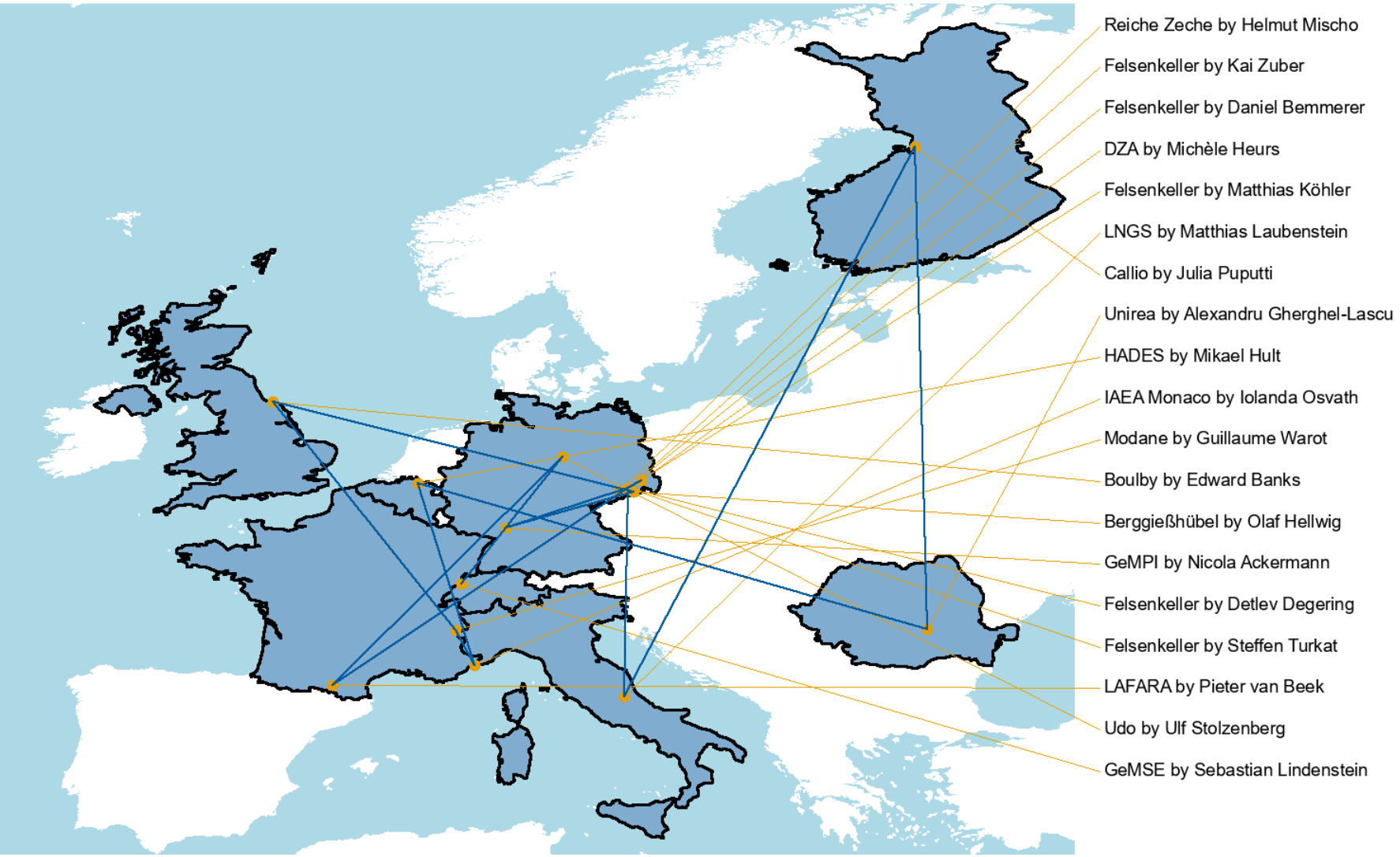

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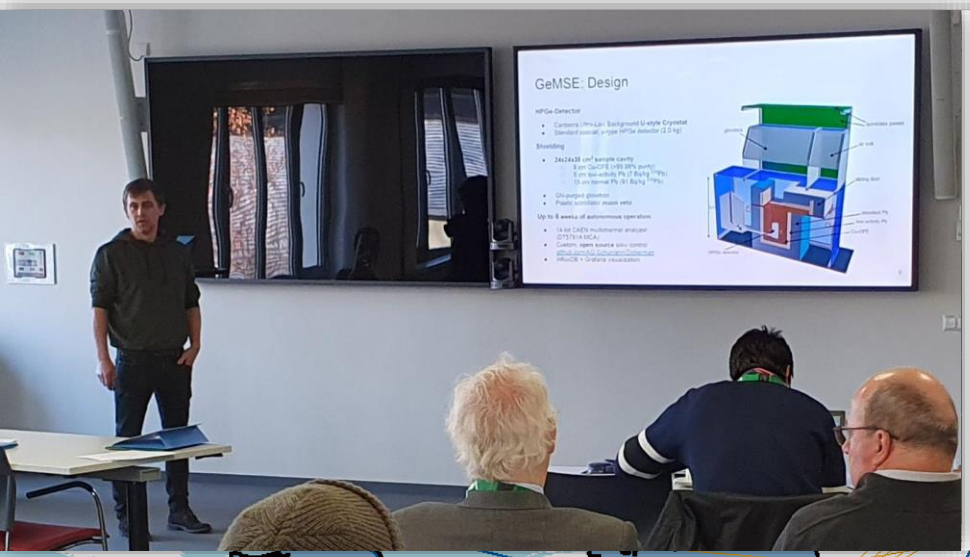
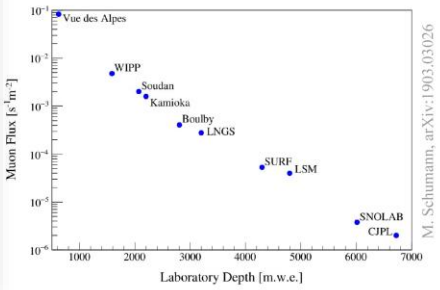


GeMSE: Location

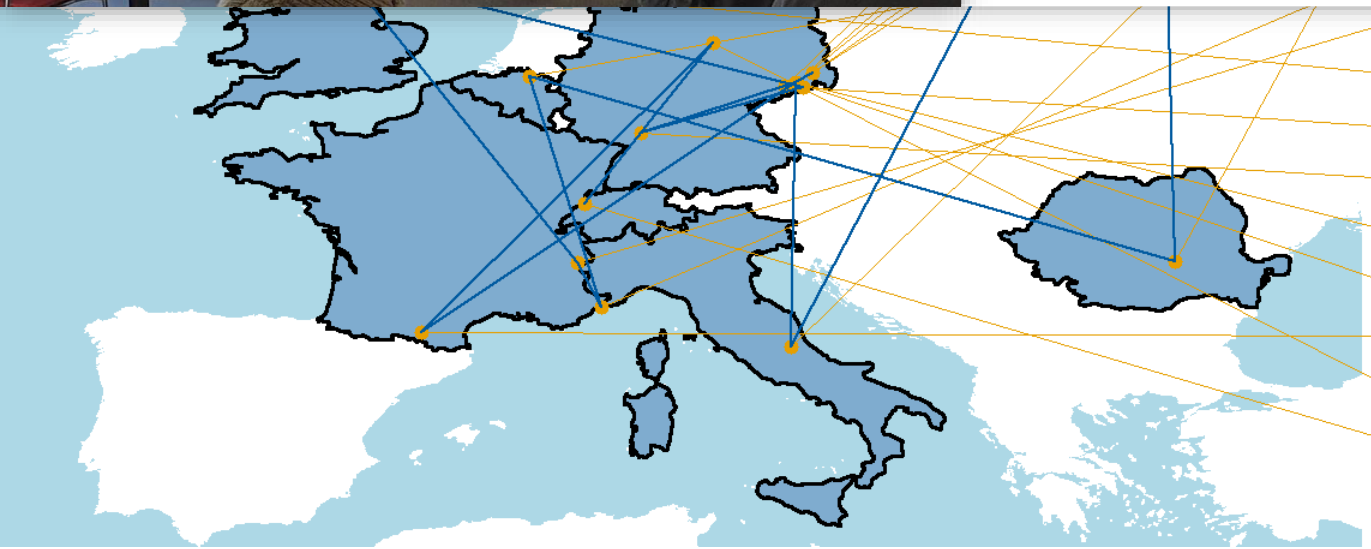
Vue-des-Alpes Underground Laboratory
(near Neuchâtel, Switzerland)

- 230 m rock overburden (**620 m.w.e**)
  → **2000x** reduction of cosmic muons



- Car tunnel provides easy access
- One-hour drive from Bern, 2h from Freiburg

5



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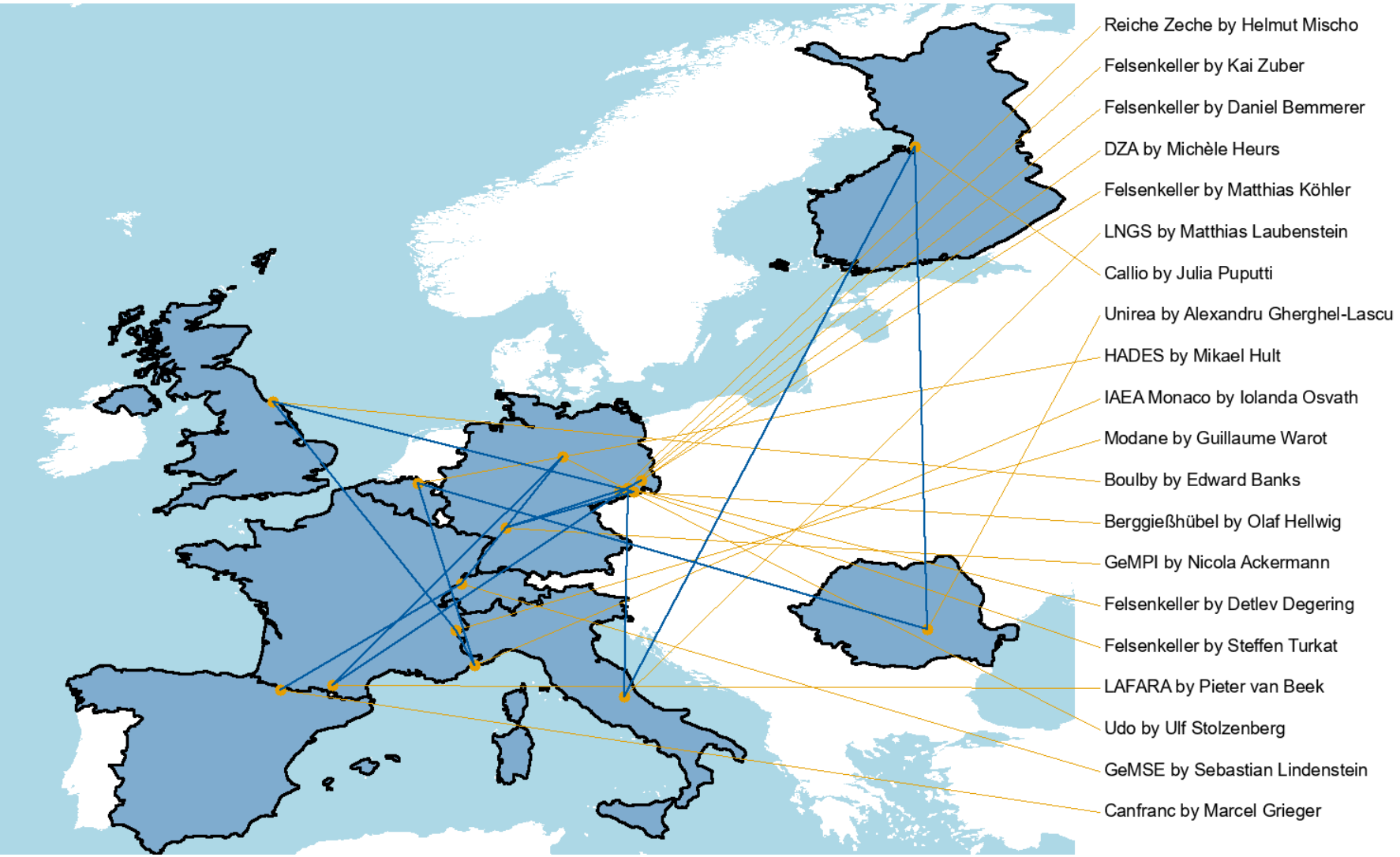

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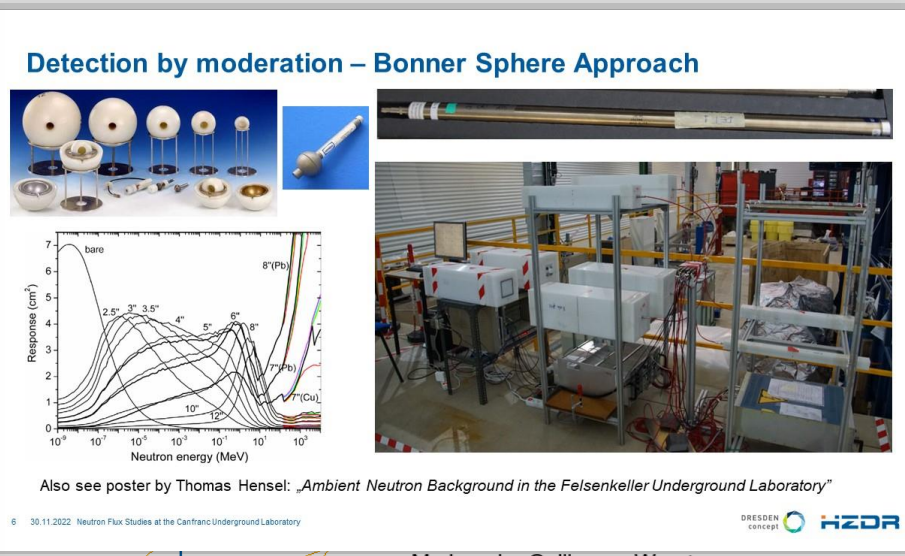
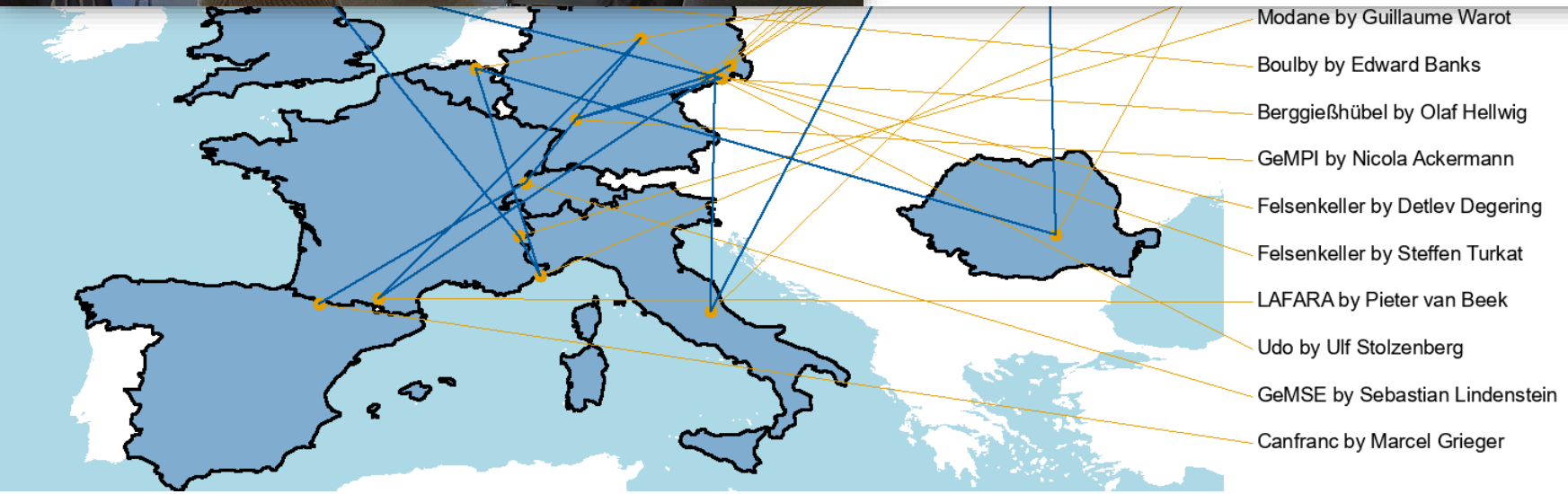
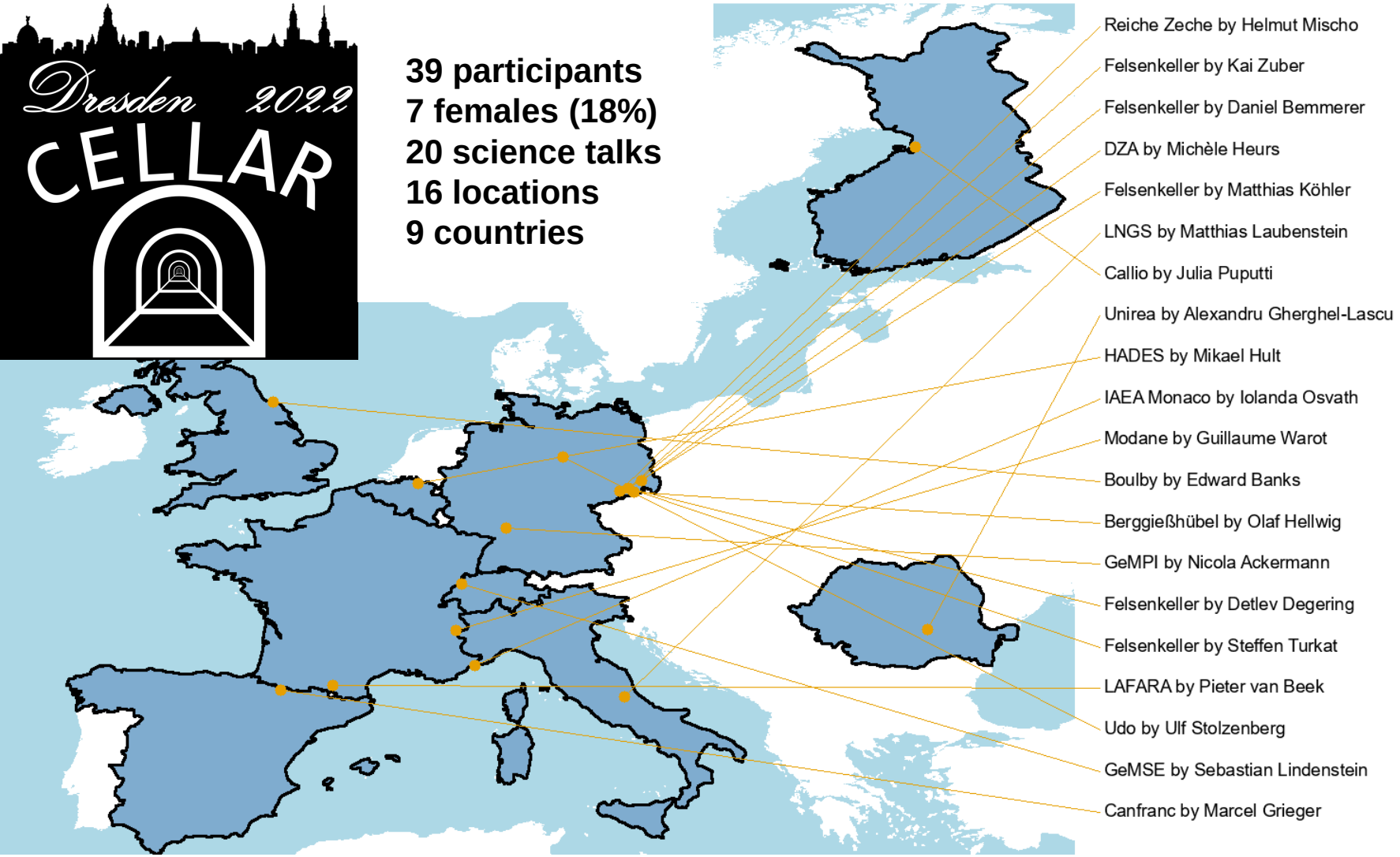




CELLAR Community Meeting 2022 – a trip through Europe

39 participants
7 females (18%)
20 science talks
16 locations
9 countries



CELLAR Community Meeting 2022 – a trip through Europe