

EPOS EUROPEAN PLATE OBSERVING SYSTEM

tectonics

earthquakes

volcanic eruptions

georesources

surface dynamics

EPOS Multi-scale laboratories Data Services & Trans-national access program

Geertje ter Maat, Richard Wessels, Otto Lange, Ernst Willingshofer, Aldo Winkler, Audrey Ougier-Simonin, Elisabetta Del Bello, Fabio Corbi, Francesca Funciello, Kirsten Elger, Matthias Rosenau, Piergiorgio Scarlato, Jose-Luis Fernandez-Turiel and Martyn Drury

g.w.termaat@uu.nl

GeoUtrecht 2020

- **Multi-scale laboratories (MSL): Mission and achievements**
- **What's in it for laboratories?**
- **What's in it for researchers?**
- **How to become part of the EPOS MSL network**

Pan-European project with the goal:

Improving and facilitate the integration, access, use, and re-use of solid Earth science data, data products, services and facilities

Method:

Harmonizing and integrating the mosaic of distributed but separated solid Earth sciences Research Infrastructures within Europe

➤ networks, observatories, data repositories, laboratories and modelling facilities, etc.

Deliverable:

A single sustainable, permanent and distributed infrastructure that integrates the diverse and advanced European Research Infrastructures for solid Earth science under a common framework

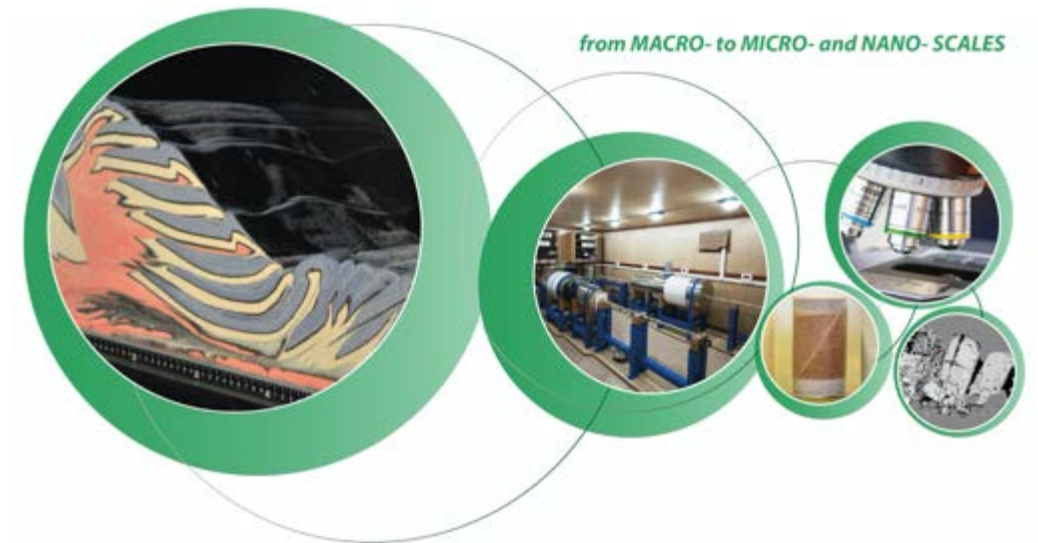
➤ Central Portal

EPOS ≠ Doing actual science | ≠ a funding agent | ≠ database | ≠ owning facilities

EPOS = Enabling science by integrating research infrastructures, thereby providing access to data, scientific products, and services

The mission of the MSL is to create a unique point for collaboration and exchange by;

- 1) Creating a coherent and well-organized network of solid Earth Science laboratories;
- 2) Implementing dedicated Data Services and controlled vocabularies that will guarantee Findability, Accessibility, Interoperability, and Reusability (FAIR) of laboratory data with other solid Earth Science data;
- 3) Developing a Trans-national Access (TNA) program that will increase European state-of-the-art solid Earth science laboratories attractiveness for researchers and contribute to increased researchers mobility, cooperation and exchange.



In addition, the MSL collects facility information from affiliated laboratories that is displayed in the EPOS Infrastructure Portal, thereby providing an overview of the Solid Earth Sciences laboratory landscape in Europe.

✓ **Data Publication Chain:**

1. Creation of Data Publications
2. Dedicated metadata editor to assign metadata and license
3. Dedicated data repositories to store Data Publication and assign DOI
4. Discovery through the MSL Portal

✓ **Trans-national Access (TNA) Program:**

1. Three TNA pilot calls (2017, 2018, 2019)
2. 65 labs participated – 55 TNA users
3. TNA-derived data gets published through the MSL Data Publication Chain

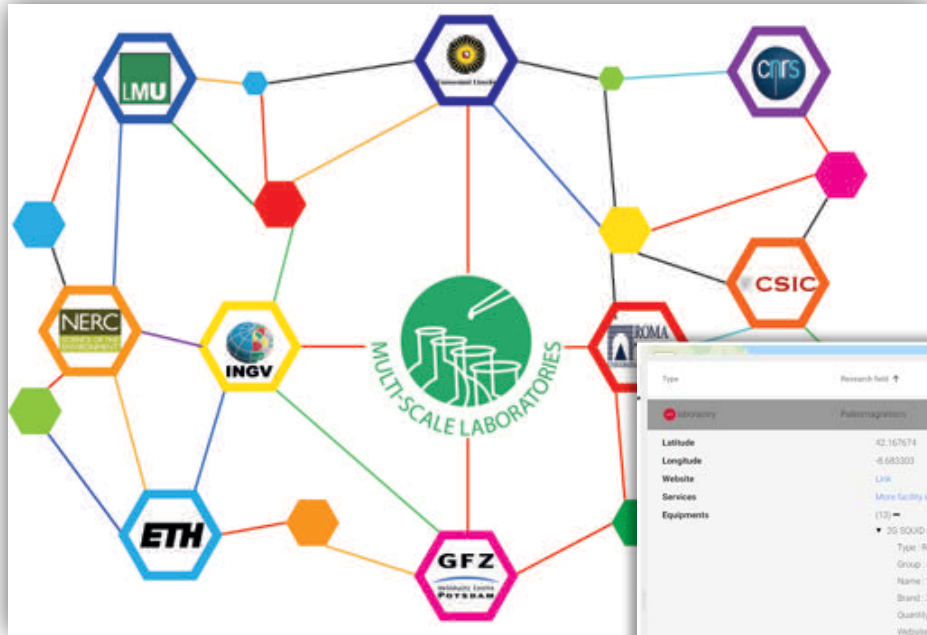


- ❖ Consortium of 11 members from 8 countries
- ❖ 82 laboratories from 12 countries in MSL community
- ❖ 4 subdomains (Analogue Modeling, Analytical & Microscopy, Paleomagnetism, Rock Physics)

What's in it for laboratories?

Visibility within the community

Become part of the EPOS MSL network



The screenshot shows the EPOS MSL portal website. The header includes the EPOS logo and navigation links for Datasets, Labs, Subdomains, and About. The main content area displays the 'Fragmentation Lab (Ludwig-Maximilians-University Munich, Germany)' page, which includes a description of the lab's research focus and a list of equipment.

MSL portal

The screenshot shows a detailed facility information page for a laboratory. It includes fields for Latitude, Longitude, Website, Services, and Equipments. The equipment list includes items like '2G SQUID magnetometer', 'AGICO AF demagnetizer LDA-3A', and 'Mantec DDM3-200 diamond core drill'.

Facility info



Facilities

82 laboratories & growing!

Showcase facility information (672 instruments)



Why publish your research data through the EPOS Multi-scale labs?

- ✓ Make your research data **F**indable, **A**ccessible, **I**nteroperable, **R**eusable (**FAIR**) and citable for other scientist!
- ✓ Prevents you and your fellow scientists from re-inventing the wheel
- ✓ Stop a large part of your data ending up in the 'bottom-drawer', but getting used by colleagues instead



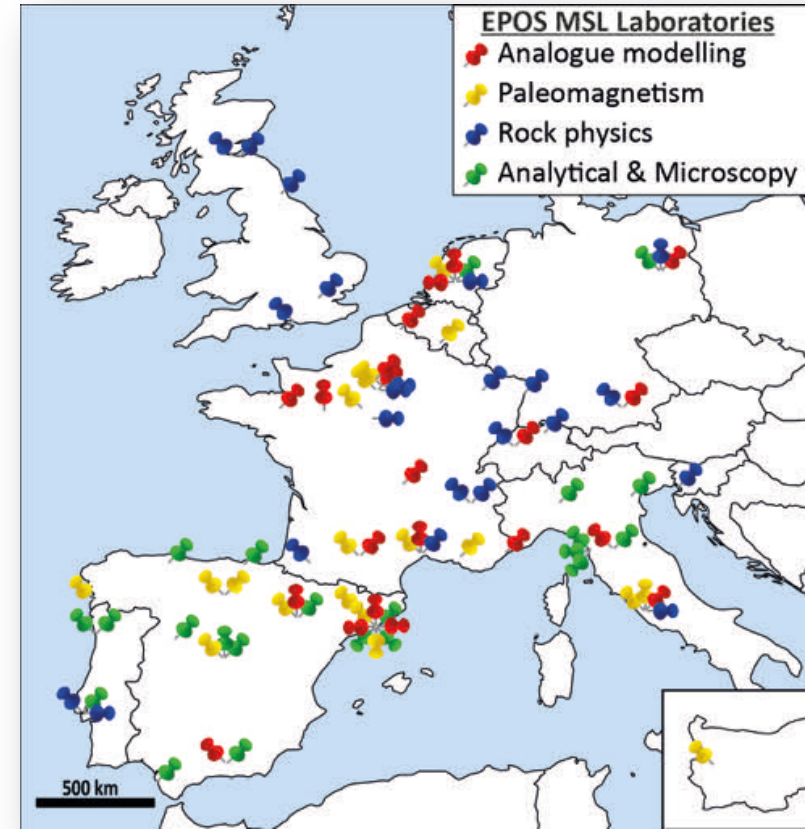
- ❖ Because the funder requires you to present a Data Management Plan and/or (the journal) requires you to publish your data in a FAIR manner...



What's in it for researchers?



Collaborations with other labs/researchers (TNA)



What's in it for researchers?

Discovery of your research data

Citation index



- Journals (such as Elsevier) add links to the datasets (DOI) to already published papers!

Experimental rock deformation/HPT-Lab (Utrecht University, The Netherlands)

HPT Laboratory, Faculty of Geosciences, Utrecht University
<https://www.uu.nl/en/organisati...>
 of-geosciences/collaboration/labs-and-facilities/hpt-lab The HPT or High... [read more](#)

License

CC BY 4.0

controlled by the kinetics of pressure solution. Since compaction is known to operate in faults, this mechanism for frictional instabilities directly relates to natural seismicity.

The zip-file contains a Python script (render_figures.py) that is used to generate the data figures as reported by Van den Ende & Niemeijer (2018), auxiliary script files in the scripts directory, and the original model data in ASCII and HDF format in the data directory. The main Python script file render_figures.py will read and process the original model data and generate the interactive data figures. These figures are automatically saved in PDF format. More information is given in Van den Ende & Niemeijer (2018) to which these data and scripts are supplementary material to.

Blaxial shear defor...
Discrete Element Me...
EARTHQUAKES
European Plate Obse...

Stick-slip mechanics
TECTONICS
deformation
multi-scale laborat...
shearing

Additional Info

Field	Value
Source	http://doi.org/doi:10.5880/ridgeo.2018.008
Author	van den Ende, Martijn (Utrecht University)
Provided by	GFZ Potsdam
Created at repository	2018-02
Dataset contact	van den Ende, Martijn (Utrecht University PhD candidate martijnende@gmail.com http://https://www.uu.nl/staff/MPAvandenEnde)
Is supplement to	1) Van den Ende, M., & Niemeijer, A. (2018). Time-dependent compaction as a mechanism for regular stick-slips. <i>Geophysical Research Letters</i> .
Publication date	2018-02
Publisher	http://www.gfz-potsdam.de/

MSL portal

<https://epos-msl.uu.nl>



Multi-scale laboratories: recap

- Mission: Create a coherent and well-organized network of solid Earth Science laboratories
- Organized in a Consortium of 11 members; contains 82 laboratories from 12 countries – and growing
- Fully operational Data Publication Chain: data – metadata – curation – storage – DOI – discovery
- Provides Trans-national Access (TNA) through affiliated laboratories

- **It is possible for laboratories/institutes to join the EPOS Multi-scale laboratory community!**

EPOS EUROPEAN PLATE OBSERVING SYSTEM

tectonics

earthquakes

volcanic eruptions

georesources

surface dynamics



GeoUtrecht 2020