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Sharing experimental data and facilities in EPOS: New community services for the analogue modelling of geologic processes in the TCS Multi-scale Laboratories

Matthias Rosenau (1), Elisa Calignano (2), Corrado Cimarelli (3), Fabio Corbi (4,5), Giacomo Corti (6), Ana Crespo-Blanc (7), Stephane Dominguez (5), Kirsten Elger (1), Francesca Funiciello (4), Otto Lange (2), Teresa Román-Berdiel (8), Daniele Trippanera (4,9), Damian Ulbricht (1), Ernst Willingshofer (2), Marco Bonini (6), and the EPOS TCS Multi-scale Laboratories team

(1) Geomaterials, Helmholtz Centre Potsdam - GFZ Potsdam, Potsdam, Germany (rosen@gfz-potsdam.de), (2) Geosciences, Tectonics, University Utrecht, Utrecht, Netherlands, (3) Earth and Environmental Sciences, Ludwig-Maximilians-Universität München, Munich, Germany, (4) Scienze, University Roma Tre, Rome, Italy, (5) Geosciences Montpellier, Montpellier University, Montpellier, France, (6) Geoscienze e Georisorse, Consiglio Nazionale delle Ricerche, Florence, Italy, (7) Geodinámica-IACT, University of Granada-CSIC, Granada, Spain, (8) Ciencias de la Tierra, Universidad de Zaragoza, Spain, (9) Earth Science and Engineering, King Abdullah University of Science and Technology - KAUST, Jeddah, Saudi Arabia

EPOS, the European Plate Observing System, is a unique e-infrastructure and collaborative environment for the solid earth science community in Europe and beyond. A wide range of world-class experimental (analogue modelling and rock and melt physics) and analytical (paleomagnetic, microscopy etc.) laboratory infrastructures are concerted in a “Thematic Core Service” (TCS) labelled “Multi-scale Laboratories”. Sharing experimental facilities and data on analogue models of geologic processes as well as on properties and applicability of different rock analogue materials are among the thematic areas that have been prioritized as major objectives to be achieved during the current implementation phase of EPOS. The TCS Multi-scale Laboratories offers coordination of the laboratories’ network, data services, and trans-national access to laboratory facilities.

In the framework of Transnational Access (TNA), TCS Multi-scale laboratories’ facilities are accessible to researchers and research teams across Europe, creating new opportunities for synergy, collaboration and innovation, according to trans-national access rules. TNA can be realized in the form of physical access (in-situ experimenting and analysis), remote service (sample analysis) and virtual access (remote processing). The current TNA pilot is supported by dedicated national funding and/or in-kind contribution and offers access to more than twenty individual facilities. Two TNA calls for research projects are open in 2018.

In the framework of Data Services, TCS Multi Scale Laboratories brings forward data products in the form of open access experimental research data sets. Data sets are assigned a digital object identifier (doi) and are citable in all relevant journals. A dedicated metadata standard eases exploration of the various data sets of our community in a TCS catalogue. With respect to analogue modelling, current data sets include physical and mechanical properties of rock analogue materials (e.g. density, friction and rheology data) and modelling results (e.g. deformation time-series, images and animations). The main repository for data sets is currently GFZ Data Services but others are to be implemented within the next years.

The EPOS TCS Multiscale Laboratories framework will lay the foundation for a comprehensive data base of rock analogue materials (“Rockypedia”) and provides a platform to organize community benchmarks and comparative studies about reproducibility of experimental results.

Link to TCS catalogue:
https://universiteit-utrecht-epos.prod.jcid.nl/

Link to analogue modelling data in GFZ repository:
http://pmd.gfz-potsdam.de/portal/?fq=subject:%22analogue%20models%20of%20geologic%20processes%22