



International Lithosphere Program

Activity Report 2023 – Task Forces / Coordination Committees

Project Title: TOPO-EUROPE

Project No.: Regional Coordinating Committee Europe

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1. Highlights of recent ILP Task Force work/results:

- Invited review paper in *Global and Planetary Change*: Sierd Cloetingh, Pietro Sternai, Alexander Koptev, Todd A. Ehlers, Taras Gerya, István Kovács, Johannes Oerlemans, Fred Beekman, Yan Lavallée, Donald Dingwell, Eszter Békési, Kristóf Porkoláb, Magdala Tesauro, Alessio Lavecchia, Svetlana Botsyun, Veleda Muller, Francois Roure, Enrico Serpelloni, Liviu Matenco, Sébastien Castelltort, Donato Giovannelli, Alberto Vitale Brovarone, Nadia Malaspina, Giovanni Coletti, Pierre Valla, Jon Limberger (2023), Coupled surface to deep Earth processes: Perspectives from TOPO-EUROPE with an emphasis on climate- and energy-related societal challenges. 'Global and Planetary Change', Volume 226, 104140, ISSN 0921-8181,
- Two proposals were submitted to the European Association for Cooperation in Science and Technology (COST) for funding of COST Actions on hydrogen (Towards the Hydrogen Society: understanding natural hydrogen: NEW-H) and biogeodynamics (pan-EUROpean BloGeodynamics network: EUROBiG).

2. Presence at international meetings/workshops (this year):

- Hybrid research seminar with participation of young European scientists on 'Frontiers of research on coupled surface-deep processes and perspectives on energy and climate societal challenges' in Sopron (Hungary) on the 18th of April 2023.
- The Institute of Earth Physics and Space Science (EPSS) of the Hungarian-Research Network (HUN-REN) in Sopron hosted the annual TOPO-EUROPE workshop between the 28th and 30th of September 2023. Scientists from 10 European countries including early-, mid-career and senior researchers from academia, as well as representatives of industry and applied science organisations participated in this TOPO-EUROPE workshop, opened by Balázs Gulyás, President of HUN-REN.

3. Important publications of ILP Task Force members (max. five):

Mátyás Hencz, Tamás Biró, Károly Németh, Kristóf Porkoláb, István János Kovács, Tamás Spránitz, Sierd Cloetingh, Csaba Szabó and Márta Berkesi (2023),

Tectonically-determined distribution of monogenetic volcanoes in a compressive tectonic regime: An example from the Pannonian continental back-arc system (Central Europe), 'Journal of Volcanology and Geothermal Research', Volume 444, 107940, ISSN 0377-0273

Sierd Cloetingh, György Hetényi, Kristóf Prokoláb and István János Kovács (Eds.), "Crustal and upper mantle structures and processes in the Alpine-Carpathian-Pannonian system: recent advances". Acta Geodaetica et Geophysica published by the Springer-Nature group, special issue in press

Dániel Kalmár, Laura Petrescu, Josip Stipčević, Balázs Attila, István János Kovács, and AlpArray and PACASE Working Groups (2023), "Lithospheric Structure of the Circum-Pannonian Region Imaged by S-To-P Receiver Functions." Geochemistry, Geophysics, Geosystems 24, no. 9: e2023GC010937.

Thomas Lange, Laszlo Palcsu, Alexander Szakács, Ákos Kővágó, Orsolya Gelencsér, Ágnes Gál, Sándor Gyila, Tivadar M. Tóth, Liviu Mațenco, Csaba Krézsek and László Lenkey, (2023), The link between lithospheric scale deformations and deep fluid emanations: Inferences from the Southeastern Carpathians, Romania. Evolving Earth, 1, p.100013.

Alexander Koptev and Sierd Cloetingh (2023), Role of Large Igneous Provinces in continental break-up revisited: from "Shirker" to "Producer". Communications Earth and Environment, Springer-Nature Group in press

4. New contacts (this year)

New contacts were established with the biodiversity community, resulting in the establishment of a TOPO-EUROPE working group on biogeodynamics, led by Taras Gerya (ETH Zürich) and the geo-resources community resulting in a TOPO-EUROPE working group on Geo-energy, led by Gábor Tari (OMV, Vienna).

5. Usage of ILP funding (this year):

ILP funding was allocated to co-sponsor the following activities:

-TOPO-EUROPE Hybrid research seminar with co-sponsored participation of young European scientists on 'Frontiers of research on coupled surface-deep processes and perspectives on energy and climate societal challenges' in Sopron (Hungary) on the 18th of April 2023.

-Annual TOPO-EUROPE workshop between the 28th and 30th of September 2023. Participation of scientists from 10 European countries with joint co-sponsoring of early-career researchers and students by ILP and HUN-REN EPSS.

-Working visits to GFZ Potsdam (Germany), INGV Bari (Italy), University of Milan (Italy) and HUN-REN EPSS (Hungary) for programming joint research activities, and joint workshops as well as manuscript preparation.

6. Activities planned for 2024:

-Joint TOPO-EUROPE workshop with Soil Science Initiative, 1-2 October, 2024 Nantesbuch (Germany)

-TOPO-EUROPE 2024 workshop 3-4 October, 2024 Sopron (Hungary)

- Participation in ILP Task Force 'Sedimentary Basins' (leaders: Liviu Matenco, Fadi Naher) workshop, Kraków (Poland) fall 2024