



Activity Report 2024 – Task Forces / Coordination Committees

Project Title: TOPO-EUROPE

Project No.: Regional Coordinating Committee

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1. Highlights of recent ILP Task Force work/results

Conceptual advances through collaborative research:

- A. Novel models for plume-lithosphere interactions and consequences for LIP's (Koptev and Cloetingh, 2024). and topographic response to slab tearing and oblique collision (Malti et al., 2024).
- B. Novel quantitative understanding of the interplay of deep Earth and surface processes in in Pannonian -Carpathians system and their impact on geo hazards and georesources (Kovacs et al., 2024).
- C. Novel concepts for intraplate continental deformation (Lavecchia et al., 2024) and its link with induced seismicity and fluid-rock interactions.
- D. Novel understanding of a complete glacial-interglacial cycle , recorded in the sedimentary sequences in the North Sea Basin (Garcia et al., 2024).

Talent building and coaching :

Early-career researcher Bekesi received the 2024 Flinn Award of ILP. Mid-career researcher and previous recipient of the Flinn Award Pietro Sternai obtained a prestigious Consolidator Grant from the European Research Council.

Initiation of proposals for funding of collaborative research

Preparation of research and research networking proposals for funding by the European Association for Cooperation in Science and Technology (COST) and European Training Networks (ETN's)

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

1. TOPO-EUROPE presentations at EGU (Vienna), Deep-2024 (Beijing), ILP workshop on Interaction of Deep Earth and surface processes (Nanjing, organizer Qin Wang), ILP Task Force Sedimentary Basins meeting (Krakow, Poland)..
2. Organisation annual conference TOPO-EUROPE (Sopron, Hungary).

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

Garcia, A., et al., 2024. Sedimentation record of a complete glacial-interglacial cycle: the North Sea Mouth fan, *Quaternary Science Reviews*, 339.

Koptev, A. and Cloetingh, S. 2024, Role of Large Igneous Provinces in continental break-up: varying from “Shirker” to “Producer”, *Communications in Earth and Environment*, Article 37.

Kovacs, I., Porkolab, K., Cloetingh, S., Hetenyi, G. (Eds.), 2024. Crustal and mantle structures and processes in the Alpine-Carpathian-Pannonian system: recent advances. *Acta Geodaetica et Geophysica*, v. 59.

Lavecchia, A., et al., 2024. Fault (re)activation and fluid-induced seismicity: an example from de Val d’Agri intramontane basin (Southern Italy), *Journal of Geophysical Research*, 129.

Malti, G., Koptev, A., Baviile, P., Gerya, T., et al., 2024, Topography response to horizontal slab tearing and oblique continental collision: insights from 3D thermomechanical modeling, *Journal of Geophysical Research*, 129.

4. New contacts (this year)

The following new contacts were established in 2024:

- The Nantesbuch Forum on Soil sciences. The bio-geodynamics community.
- The natural Hydrogen community.
- The International Continental Drilling Program (ICDP)

5. Usage of ILP funding (this year)

ILP funding was allocated to the following activities:

- Work visits to Potsdam, Sopron, Bari,
- Organisation TOPO-EUROPE conference in Sopron.
- Co-sponsoring young scientists for participation in these meetings.

6. Activities planned for 2025

The following activities are planned for 2025:

- Organisation of 2025 TOPO-EUROPE conference in Sopron, 1-3 October 2025
- Participation in 45 years of ILP Symposium at IAGA/IASPEI Conference, 31 August-5 September, Lisbon.
- Organisation interdisciplinary workshop on Earth, Environment and Healty Living, in cooperation with Academia Europaea in Budapest., 24-25 April
- Joint organisation of activities with the planned ILP TOPO-South China initiative and exchange visits TOPO-EUROPE and TOPO-South China community
- Initiation with African researchers and IUGS leadership of Integrated TOPO-Africa program.
- Joint publication with the ILP Task Force on Sedimentary Basins of a Special Volume in "Global and Planetary Change"