



# International Lithosphere Program

## Activity Report 2023 – Task Forces / Coordination Committees

Project Title: Sedimentary Basins

Project No.: VI

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

The key highlight is the organisation of the 17th Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins, hosted by Khalifa University in Abu Dhabi, United Arab Emirates, in collaboration with Ministry of Energy and Infrastructure of the United Arab Emirates, between 4-8 December 2023 with 150 participants. Details are available at <https://www.ilp-abudhabi.com>. The workshop was an extraordinary success, mobilizing key academia and industry participants both from the entire Arabian Peninsula and from other international participation. The workshop received also significant support from major organizations and industry, such as EAGE, TGT, SLB, Total Energies and the Abu Dhabi Convention and Exhibition Bureau. The workshop included two full days of excellent scientific presentations and two exceptional geological fieldtrips, one day excursion in the Sabkha depositional environment of the north UAE coast and a two days excursion in the Semail ophiolites and associated platform carbonates structure and deformation excellently outcropping in the eastern UAE.

The Task Force completed the special volume for Global and Planetary Change: “Understanding the coupled evolution of orogens, sedimentary basins and their fluid-rock interactions”, dedicated to the International Lithosphere Program Task Force VI Sedimentary Basins meetings 2021 in Rueil-Malmaison, France and 2022 in Bucharest, Romania. The collection of 15 papers in the GPC volume was finalized during 2023 and is available at <https://www.sciencedirect.com/journal/global-and-planetary-change/special-issue/10850JHNCW1>.

The Task Force is discussing with EAGE and IFPEN developing a new special issue dedicated to the International Lithosphere Program Task Force VI Sedimentary Basins meeting, 4-8 December 2023, Abu-Dhabi, UAE, dedicated to the evolving knowledge of sedimentary basins and orogens for georesources.

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

All efforts were dedicated to the 2023 17<sup>th</sup> workshop of the International Lithosphere Program Task Force VI Sedimentary Basins meeting, 4-8 December 2023, Abu-Dhabi, UAE.

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

- Nader, F.H., van Unen, M., Darnault, R., Rudkiewicz, J.L., Matenco, L., 2023. Coupled kinematic and thermal modelling of collisional orogens: Implications for subsurface geo-resources assessment in the external Dinarides. *Global Planet. Change* 223, 104090. <https://doi.org/10.1016/j.gloplacha.2023.104090>
- Nader, F.H., Matenco, L., Armitage, J.J., 2023. Understanding the coupled evolution of orogens, sedimentary basins and their fluid-rock interactions. *Global Planet. Change* 230, 104272. <https://doi.org/10.1016/j.gloplacha.2023.104272>
- Lange, T.P., Palcsu, L., Szakács, A., Kővágó, Á., Gelencsér, O., Gál, Á., Gyila, S., M. Tóth, T., Maţenco, L., Krézsek, C., Lenkey, L., Szabó, C., Kovács, I.J., 2023. The link between lithospheric scale deformations and deep fluid emanations: Inferences from the Southeastern Carpathians, Romania. *Evolving Earth* 1, 100013. <https://doi.org/10.1016/j.eve.2023.100013>
- Cloetingh, S., Sternai, P., Koptev, A., Ehlers, T.A., Gerya, T., Kovács, I., Oerlemans, J., Beekman, F., Lavallée, Y., Dingwell, D., Békési, E., Porkoláb, K., Tesauro, M., Lavecchia, A., Botsyun, S., Muller, V., Roure, F., Serpelloni, E., Matenco, L., Castellort, S., Giovannelli, D., Brovarone, A.V., Malaspina, N., Coletti, G., Valla, P., Limberger, J., 2023. Coupled surface to deep Earth processes: Perspectives from TOPO-EUROPE with an emphasis on climate- and energy-related societal challenges. *Global Planet. Change* 226. <https://doi.org/10.1016/j.gloplacha.2023.104140>
- Matenco, L., Balázs, A., Nader, F.H., Haq, B.U., Fodor, L., 2022. Advances in the understanding of multi-scale and coupled evolution of orogens, sedimentary basins and the underlying lithosphere. *Global Planet. Change* 208, 103689. <https://doi.org/10.1016/j.gloplacha.2021.103689>

### 4. New contacts (this year)

- Setup of new collaborations as a result of the ILP Abu Dhabi Workshop with many academia and industry organisations, such as Khalifa University or KAUST Saudi Arabia.
- Continuation of the large-scale international collaboration focussed on the East Mediterranean basins (Levant Basin, offshore Egypt). Academic groups: University of Utrecht, IFP Energies nouvelles, RWTH Aachen University, University of Cyprus, University of Thessaloniki (Greece), University of Lebanon, Sorbonnes University (France), Imperial College, London (UK); Cairo Univeristy (Egypt). Industrial groups: Total, Noble Energy, Cyprus Hydrocarbon Company, Eni, Shell, ExxonMobil, Equinor; Governmental groups: Cyprus Energy Service (Gov. Cyprus), Geological Survey Department of Cyprus, Lebanon Petroleum Administration (Ministry of Energy), Lebanese National Council for Scientific Research (L-NCSR).
- Continuation of the setup of the Topo-Transylvania collaborative network. See the white paper Matenco, L., 2018. Topo-Transylvania: a multidisciplinary Earth science initiative in Central Europe to tackle local and global challenges. *Acta Geodaetica et Geophysica* 53, 323-329, other recent contributions Lange, T.P., Palcsu, L., Szakács, A., Kővágó, Á., Gelencsér, O., Gál, Á., Gyila, S., M. Tóth, T., Maţenco, L., Krézsek, C., Lenkey, L., Szabó, C., Kovács, I.J., 2023. The link between lithospheric scale deformations and deep fluid emanations: Inferences from the Southeastern Carpathians, Romania. *Evolving Earth* 1, 100013. <https://doi.org/10.1016/j.eve.2023.100013>

## 5. Usage of ILP funding (this year)

The entire ILP funding (2023) has been dedicated for the organization of the 2023 17th Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins, 4-8 December 2023, Abu-Dhabi, UAE. The funding has been used entirely for the activities of the workshop. Significant complementary support has been received from Khalifa University, the Ministry of Energy and Infrastructure in the UAE, EAGE, TGT, SLB, Total Energies and the Abu Dhabi Convention and Exhibition Bureau contributions in terms of funding and workshop facilities.

## 6. Activities planned for 2024

A new special volume dedicated to the International Lithosphere Program Task Force VI Sedimentary Basins meeting, 4-8 December 2023, Abu-Dhabi, UAE, dedicated to the evolving knowledge of sedimentary basins and orogens for georesources is in discussion with EAGE and IFPEN.

Organization of the 18<sup>th</sup> Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins that will take place in Krakow, Poland in fall 2024 (dates to be confirmed soon), organized by Piotr Krzywiec from the Institute of Geological Sciences, Polish Academy of Sciences and his colleagues.

## Appendixes:

Participants to the 5-6 December 2023 17th Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins (Khalifa University, Abu Dhabi).



Participants to the 4 December 2023 Sabkha Excursion of the 17th Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins.



Participants to the 7-8 December 2023 RAK Excursion of the 17th Workshop of the International Lithosphere Program Task Force VI Sedimentary Basins.

