SESSION 14- Seismic Discontinuities from the Lithosphere to the Deep Mantle: Structure, Dynamics, and Tectonic Implications from Integrated Multidisciplinary Studies

Conveners

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Session Description

Seismic discontinuities at various depths including the Conrad and Moho within the crust, the mid-lithospheric discontinuity (MLD), the lithosphere–asthenosphere boundary (LAB), and deeper mantle interfaces such as those in the mantle transition zone (MTZ) between ~410 and ~660 km depth, provide fundamental constraints on the structure, composition, and evolution of the Earth's interior. Understanding their geometry, depth variations, and physical and chemical nature is essential for constraining lithospheric and mantle dynamics, as well as the tectonic and convective processes that shape our planet and influence natural hazards.

This session aims at promoting multi-scale imaging and interpretation of seismic discontinuities and associated structures from the crust to the deep mantle, combining seismic, geodynamic, and geochemical observations to achieve more comprehensive models of the Earth's interior.

We welcome contributions employing a variety of geophysical and multidisciplinary methods for imaging and interpreting these interfaces, including active and passive seismic, gravity, magnetic, and electrical techniques, as well as studies that integrate multiple datasets. Case studies addressing lithospheric, mantle, or deeper-mantle discontinuities across regional to global tectonic settings, and those offering novel interpretations through joint geophysical, geological, or geochemical analyses, are particularly encouraged welcome.