## **SERPENTINITES AND BEYOND:** the back-and-forth journey of water into the mantle

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The interaction of the mantle rocks with the hydrosphere is perhaps one of the most critical reactions on our planet, that together with its counterpart reaction (deserpentinization) control many key bio-geo-dynamic processes. Hydration and dehydration reactions of ultramafic rocks are involved in the long-term geochemical volatile cycling associated with subduction zones but also are thought to exert a role on the mechanical instabilities accounting for short- to medium-term seismic cycles. Moreover, serpentinization is associated with the origin of life and the formation of energy sources for a deep biosphere. There remain, however, outstanding fundamental questions to fully determine (de)serpentinization processes. For example, how are microphysical and microchemical processes during (de)serpentinization coupled and how does the rheology and permeability of serpentinite systems change in space and time? Can serpentinization lead to a geochemical environment that can synthesize organic compounds?

In this session, we welcome contributions adopting a broad variety of natural observations, experimental, analytical and numerical techniques addressing outstanding geochemical and geodynamic questions around serpentine minerals, serpentinites, serpentinization and deserpentinization.