

## **Indus Suture Serpentinites: From intra-oceanic to continental subduction**

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In subduction systems, the overriding plate mantle plays a key role in elemental recycling, as it can act as storage for fluid mobile elements, especially those that are prone to early mobilization from the slab. This serpentinized mantle thus holds clues to the fluid characteristics that have been steaming out of the slab, and allow a better quantification of elemental recycling and fluid flux. In the NW Himalaya the Indus suture zone marks the collision site between India and an intra-oceanic island arc (Kohistan-Ladakh Arc) that existed within the neo-tethys. It exposes a long-lived accretionary prism that has preserved the convergence history of the system, from intra-oceanic to continental subduction. Within the accretionary wedge, remnants of the Indian passive margin, neo-tethys material, blueschists, UHP gneiss, volcanic and sedimentary fore-arc sequences, as well as ultramafic rocks are found. The serpentinized ultramafic rocks are part of the overriding plate. As such, those rocks have recorded the evolution of fluid flux during the intra-oceanic history, as well as during continental subduction, and thus offer a unique opportunity to constrain the elemental budget during the evolution of the subduction system. The petrological and geochemical aspects of the serpentinites, as well as possible fluid source rocks (blueschists and UHP gneiss), allows to assess differences in the fluid flux from intra-oceanic to continental subduction. The observed key differences in the elemental characteristics of the serpentinites are inherited from both PT conditions and different fluid source. These allow tracing the changes of metasomatic agents added to the mantle wedge from oceanic to continental subduction, providing important information about elemental recycling during the India-Eurasia convergence.