

Conference Agenda

Presentations including 'rembe'

3.3 Tectonics, geodynamics, and paleogeography of the Alpine-Himalayan orogen from the Earth's mantle to its surface

Time: 26/Aug/2020: 10:20am-12:20pm · Location: Room 2.04

10:35am - 10:50am

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Virtual Presentation | ECS

Cimmerian timing of nappe emplacement in the North East Pamir

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The Pamir orogen, part of the Himalayan-Tibetan mountain belt, witnessed a prolonged history of terrane accretion. Two Paleozoic to Mesozoic units have been described from the North Pamir: (1) the volcano-sedimentary North Pamir-Kunlun domain and (2) the metamorphic Karakul-Mazar domain south of (1), representing a Permo-Triassic accretionary prism that formed during the northward subduction of the Palaeo-Tethys Ocean and was later in part subducted beneath the Central Pamir. Both units are part of the North Pamir Terrane.

The Karakul-Mazar unit is interpreted to be emplaced on top of the North Pamir-Kunlun domain as a far distal effect of retro-arc shortening associated with the South Pamir arc in the Middle Cretaceous. Thrusting occurred along the Shala Tala thrust fault. Part of the Shala Tala thrust sheet crops out at the mountain front 90 km ESE of Kashgar in northwestern China. Here, Karakul-Mazar rocks (greenschists, marbles, amphibolites) lie on top of barely metamorphosed marbles and greywackes, which in turn are juxtaposed against Pre-Jurassic volcano-sedimentary units.

South of the village of Bostantielieke we mapped a several 10's of meters thick thrust zone that we interpret to represent a portion of the Shala Tala fault. We present structural field data together with results from K-Ar fine fraction and calcite U-Pb LA-ICPMS dating from the shear zone. Our Upper Triassic to Lower Jurassic ages for the N- to NW-ward transport of the Shala Tala Nappe are much older than previously thought, based on data from the eastern flank of the Muji basin further west.