



Growth of the Pamir

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We aim to establish the Late Cenozoic deformation field of the Pamir by localizing and characterizing active and neotectonic deformation structures, and setting up the drainage-basin, river-capture, river-reversal, and regional erosion history. The project thus aims to record the short-term, upper crustal response to active intra-continental subduction, orocline formation, and erosion. Our hypothesis is that the neotectonics is governed by subduction beneath the frontal part of the orocline, E–W extension in the intra-plateau Karakul-lake rift, and transtension (east) and transpression (west) along the lateral margins of the orocline, a result of oroclinal formation, rotation of the Indian indenter, and focused precipitation caused by the Westerlies. The model for the evolution of the drainage system involves: growth of the Pamir by N-ward propagating deformation, establishing E-trending belts of shortening and rivers/drainages; diversion and blocking of these rivers by the development of the lateral boundaries of the orocline that resulted in river capture and reversal. Even the present-day Panj (Amu Darya) is affected by ongoing uplift: tilted river terraces, wind gaps, and abnormal intersection of streams of different order indicate that large parts of the river have changed flow direction. The determination of a number of geomorphic indices with remote sensing techniques help us to identify areas experiencing tectonic deformation.