



The Shahrud-Doruneh-Herat-Chaman fault system and its prolongation in Pamir

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The Shahrud, Doruneh, Herat and Chaman faults are the most prominent features in Eastern Iran and Afghanistan. Due to the almost impossibility to access these faults in Afghanistan, their kinematics and interactions are largely unknown. For this reason we developed tools to simplify and automatize the extraction of morphological parameters from remote sensing data (TecDEM Matlab toolbox; Shahzad & Gloaguen, Computer and Geosciences). This allow us to produce accurate maps of neotectonic activity. We infer the intensity of the deformation from its influence on reorganizing the drainage system. Scarce published in situ observations and quantitative remote sensing investigations (e.g. river offsets, morphological signatures) allow us to derive the sense of movements along the major structures. It permits to refine the existing neotectonic maps of the region and to unravel the interactions of these faults as they enter Pamir. We propose a model of Recent deformation along the Darvaz, the Badarshan and still undocumented faults which could represent the Western edge of the Pamir.