Recent deformation and denudation in the Tien Shan and Pamir mountains of Kyrgyzstan

Fiche descriptive

Informations projet

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Contribution de l’UE: € 58 610

Coordonné par

University of Potsdam

Allemagne

Objectif

This project seeks to study recent seismic activity and resulting deformation and erosion in the Tien Shan and Pamir ranges of Kyrgyzstan. The general goal is to define areas of active deformation, quantify the timing and extent of that deformation, and follow its influence on the landscape. The timescales under consideration range from present day observations of landslides and other seismic hazards to the recurrence of earthquakes on presently active faults over the Quaternary. The larger scientific context for the proposed work recognizes this region as a natural laboratory for studying modern deformation processes of an intracratonic collision zone, providing analogs for interpreting similar orogenic periods in the geologic past. It is an interdisciplinary effort combining modern resources in field geology, geophysics, geomorphology, satellite remote sensing and GPS (Global Positioning System) technology. Field data is to be integrated with seismic and geophysical o
Field data is to be integrated with seismic and geophysical observations and large-scale mapping of geologic structures from airphotos and satellite images within the framework of a Geographic Information System (GIS), thereby creating a valuable database for realizing the synergy of these different types of data. This database will continue to find future applications in neotectonic studies and seismic hazard evaluation of the Pamir and Tien Shan ranges. Finally, it will provide important resources for scientific institutions within Kyrgyzstan to carry out their missions, including training in the operational use of GPS technology, recent developments in computer modeling of denudational processes, and interpretation and use of recently available satellite images. As with previous collaborations, publication of results is anticipated in peer-reviewed scientific journals.

Programme(s)

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