Geophysical Research Abstracts,
Vol. 11, EGU2009-11904-2, 2009
EGU General Assembly 2009

Morphotectonic analysis of the Kaftar lake basin in the High Zagros Mountain Belt, (Fars province, Iran)

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The Kaftar lake basin is located in the High Zagros Mountain Belt in the southwest of Namdan plain in the northern part of Fars province (Iran). The studied area surrounded by Gandboi ridge with E-W trend in the north and NW-SE trended Bareaftab anticline in the south. The main faults in the studied area are Moosakhani and Korchool (Kaftar) thrust faults, which are recorded in the Iran aeromagnetic map with T-12 and T-46, respectively. These faults are on the south eastern edge of the Zagros thrust system. With this study, in which we have used automatic lineament extraction algorithm from multi sources, high resolution morphometric data, analysis of morphotectonic elements based on high spatial resolution satellite imagery and digital elevation model, and field study. We have tried to detect the tectonic activities and understand the origin and evolution of the Kaftar lake basin. Based on analysis of existing data and results of this study, Gandboi ridge is a syncline with complex topography uplifted and rotated by Korchool fault. Bareaftab anticline, which is located in the hanging wall of Moosakhani fault, is a fault propagation fold and has also been formed by this fault. Based on the bed rock map of Namdan plain,The Kaftar lake has been produced in a depression within folds caused by Korchool fault. The high tectonic and karstic activities as well as the fact that the lake is not salty, indicatig a drain of the lake, proved that the Kaftar lake is a part of a polje of the karst system of Namdan plain.