Geophysical Research Abstracts
Vol. 15, EGU2013-12582, 2013
EGU General Assembly 2013

Hidden faults in the Gobi Desert (Inner Mongolia, China) – evidence for fault activity in a previously tectonically stable zone

Andreas Rudersdorf (1), Hanna Haedke (2), and Klaus Reicherter ()

(1) Neotektonik und Georisiken, RWTH Aachen University, Aachen, Germany (a.rudersdorf@nug.rwth-aachen.de), (2) Institut für Geographische Wissenschaften, Freie Universität Berlin, Berlin, Germany

The Gaxun Nur Basin (GNB, also Ejina Basin, Hei River Basin, Ruoshui Basin) north of the Tibetan Plateau and the Hexi Corridor is an endorheic basin bounded by the Bei Shan ranges in the west, the Gobi Altai mountains in the north and the Badain Jaran sand desert in the east. The basin is fed from the south by the braided drainage system of the Hei He (Hei River) and its tributaries, which originate in the Qilian Shan; terminal lakes like the dried Gaxun Nur and Sogo Nur are and have been temporal. The sedimentary succession of up to 300 m comprises intercalations of not only alluvial deposits but also lake sediments and playa evaporites.
The basin has been regarded as tectonically inactive by earlier authors; however, the dating of sediments from an earlier drill core in the basin center provided some implications for tectonic activity. Subsequent remote sensing efforts revealed large lineaments throughout the basin which are now considered as possible fault line fingerprints. We investigated well preserved Yardangs (clay terraces) in the northeastern part of the GNB, in the vicinity of the Juyanze (paleo) lake, and found evidence for Holocene active tectonics (seismites). We present a lithological analysis of the relevant sequences and conclusions on the recent tectonic activity within the study area.