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Active tectonics of the Oran (Algeria) Quaternary plain

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The Oran region, in north-western Algeria, has been hit several times in the past by destructive moderate-sized and strong earthquakes. The Oran October 9th , 1790 (I0= X) was among the strongest seismic events in the western Mediterranean area comparable, if we consider the described effects, to the El- Asnam (1980, Ms=7.3) and Zemmouri (2003, Mw=6.8) earthquakes. Such strong seismic events requires the presence of major active geological structures that are re-activated several times in the past. In this work we present results of a multi-disciplinary study combining geomorphic analysis, field earthquake geological investigations and geophysical methods, undertaken to study the southern border of the Oran Quaternary plain. A 50 km long, SW-dipping and NE-SW trending active fault has been identified that showing clear quaternary deformation.
Keywords: earthquake geology, active fault, geomorphic, geophysics, Algeria.