

## Active tectonics of the High Atlas

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Active tectonic studies in the Moroccan High Atlas have three main interests: (1) to document an active intraplate, slow-deforming mountainous system, (2) to determine the amount of present shortening that is accommodated south of the African-Eurasian plate boundary region, and (3) to analyze a desert analogue of the Western European compressional seismogenic provinces; namely, Pyrenees and Western Alps. We aim to present a general overview of the active tectonic studies and first results that have been recently developed in the Moroccan High Atlas within the framework of the SAFE European project and French-Moroccan, Volubilis program. Review of seismological and structural data coupled with new data on topography, geomorphology, and Quaternary geology allowed delineating the major active faults of the High Atlas. These are the North and South border faults of which fault segmentations agree with potential  $M_{wmax}$  ranging between 6.1 and 6.4. Detail active tectonics analyses were performed on the South Atlas Fault Zone in both the Souss and Ouarzazate basins where deformed Quaternary levels permit to estimate slip rates on individual faults on the order of 0.1 mm/yr. Such low slip rates imply that large observational time-window is needed to analyze active deformation in low seismicity regions. However, the complex 3D geometry of reverse or thrust faults may cause difficulty to relate surface observations with the deeper faults that have the potential to nucleate big earthquakes. On-going seismological analyses should permit to precise such seismogenic potential. Finally, further studies are necessary to interpret the Anti Atlas seismicity.