



Reconstructions at 100 M.a of the western sector of the Central High Atlas, Demnate (Morocco). Tectonic implications.

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In this work remagnetization data are used to obtain the geometry at 100 Ma of one of the most known profiles of the Central High Atlas: the Demnate cross-section (Morocco). Previous palaeomagnetic studies have corroborated a widespread remagnetization affecting widely to the Mesozoic sediments of the Central High Atlas. Knowing the age of the remagnetization (100 Ma) allow us to use the method provided by Villalafín et al. (2003, 2015) to obtain reconstructions of different structures at the time of end of the Early Cretaceous, age of the pervasive remagnetization in the Central High Atlas.

The Atlas is an intracontinental belt extending more than 2000 km in North Africa, which developed due to the inversion of the extensional or transtensional Mesozoic basins, as a consequence of the convergence between Africa and Europe during the Cenozoic. The deformation in the Central High Atlas is heterogeneously distributed among the different sectors, showing particular features in each area. The studied area represents the westernmost sector of the Central High Atlas and, the most different area from the geological point of view, as well. This sector is characterized by a greater involvement of the basement in the compressive deformation and a decrease in thickness of the syn-rift Mesozoic sediments. Therefore, knowing the deformation previous to Cenozoic compression is key to understand the tectonic evolution in the Central High Atlas.

Thirty sites (240 samples) corresponding to black limestones and marly limestones Early to Middle Jurassic in age and Triassic clays, have been studied. The magnetic properties of samples are very regular showing very high NRM. Thermal and AF demagnetization showed a single stable paleomagnetic component with unblocking temperatures and coercivity spectra of 300-475°C and 20-100 mT respectively in limestone samples and 300-525°C in clays sample. This characteristic remanent magnetization (ChRM) showed systematically normal polarity in Jurassic rocks suggesting a widespread remagnetization.

In spite of the good outcrops and the relatively well-constrained structure of the High Atlas, there are many tectonic problems still unsolved, as the controversial existence of intra-Mesozoic deformation episodes. The restoration of paleomagnetic vectors to the remagnetization acquisition stage (100 Ma) allows to determine the dip of the beds during this period and, thereby, to obtain a reconstruction of structures during that time. The results obtained indicate that these structures have undergone different degrees of pre-Late Cretaceous deformation and reveal differences with reconstructions made by our group in other regions in the Central High Atlas.