



## **Paleomagnetic reconstruction of Late Cretaceous structures along the Midelt-Errachidia profile (Morocco). Tectonic implications.**

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Remagnetization data are used in this work to obtain the palinspastic reconstruction at 100 (Ma) of one of the most studied profiles of the Central High Atlas: the Midelt-Errachidia cross-section (Morocco). Previous studies in the area on syn-rift sedimentary rocks of subsiding basins have revealed that the Mesozoic sediments of this region acquired a pervasive remagnetization at the end of the Early Cretaceous.

Fifty-eight sites (470 samples) corresponding to black limestones, marly limestones and marls, Early to Middle Jurassic in age, have been studied. Sites are distributed along a 70 km transect cutting across the basin and perpendicular to the main structures. 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 coercivities spectra of 300-475°C and 20-100 mT respectively. This characteristic remanent magnetization (ChRM) showed systematically normal polarity 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. This reconstruction accounts for the relative contribution of Mesozoic transpressional/transtensional movements vs. Cenozoic compression to the present-day dip. The results obtained indicate that these structures have undergone different degrees of pre-late Cretaceous deformation and were re-activated during the Cenozoic compression to finally acquire their present-day geometry.