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Abstract Book

Edited by

Rahimi A.
Saber H.
Habib A.
Abu Alam T.
Lagnaoui A.

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which correspond to faults and mainly sinistral shear zones, show a local dextral reactivation. The N-S and NW-SE oriented lineaments with sinistral shear form a conjugate faults system, associated with sinistral transpression of the Eburnian deformation D2. These conjugate faults, viz. N-S, NNE-SSW and E-W were reactivated in dextral features. The occurrence of all these structures would be linked to the Eburnian and post-Eburnian orogenic events. Indeed, these structural lineaments were well associated, or else reactivated and interfered locally the Eburnian linear structures.

The major Al Medinat fault; an Atlasic reworking of a complex Variscan shear zones system (western High Atlas, Morocco)

Dias Rui[1,2,3] & Hadani, M.[2]

1. Earth Sciences Institute (ICT), Pole of the University of Évora, Rua Romão Ramalho, nº 59, 7000- 671 Évora, Portugal. E-mail: rdias@uevora.pt
2. LIRIO- School of Sciences and Technology of University of Évora (ECTUE), Estremoz Pole, Convento das Maltezas, 7100-513, Estremoz, Portugal
3. Dep. Geociências da ECTUE, Colégio Luís António Verney, Rua Romão Ramalho, 59, 7000-671 Évora, Portugal

The geological pattern of Morocco is the result of a strong interference between several orogenic cycles from the Precambrian to recent times, which led to the individualization of different tectonic domains. Their boundaries are mostly the result of brittle deformation, induced by the Cainozoic compressive tectonic setting between Eurasia and African plates. This gives rise to wide plains of sub-horizontal Cainozoic sedimentary sequences (e.g. Haouz and Sousse plains), bounded by elevated blocks. In such blocks a much more complex structure is found:

- The Precambrian and Palaeozoic sequences has been deeply deformed during Pre-Mesozoic orogens, mainly in a pervasive way by the Variscan collision between Gondwana and the northern peri-Gondwana Terranes;
- Unconformably overlying the older rocks, the Meso-Cainozoic usually presents a weak alpine deformation, except in the vicinity of the faults which has been active during the atlasic inversion.

The influence of previous structures in the control of the alpine reworking of these Atlasic faults, is not always easy to understand.

The Al Medinat fault system is one of the major structures of the western High Atlas, individualising a northern block, where the Meso-Cenozoic is preserved, from a southern uplifted one where some variscan intrusions (e.g. Tichka massif) outcrops. With a general E-W trend, its wavy pattern with frequent WNW-ESE and ENE-WSW segments, suggests a complex evolution, confirmed by detailed structures studies.

The Variscan deformation in its vicinity, is marked by the strong deflection of the pervasive fabrics produced in the early stages of the major deformation phase (D_{1a}); the regional NE-SW trend changes to WNW-ESE in relation with ductile shear zones (the Addouz, Adassil an Anamrou ones). These WNW-ESE sinistral shear zones, that have been used as pathways for sin-kinematic intrusions, should be ascribed to a late D_{1b} stage (Dias et al, 2011). Previous structures have been offset a D_2 Late-Variscan deformation along NNE-SSW to NE-SW brittle-ductile sinistral shear zones.

Both previous D_{1b} and D_2 Variscan shear zones have been reworked by the Atlasic deformation with a major reverse sense movement giving rise to the general complex E-W trend of the Al Medinat fault sytem.

The El Medinat model could be extrapolated in a more regional way. The boundaries of some of the main Atlasic features, like the contact between the Haouz plain and the western High Atlas, could be re-interpreted.

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Structure of the central Atlantic conjugate passive margins comparison of new and existing models from wide-angle and reflection seismic data

Sahabi, M.[1] ; Biari, Y.[1,2] ; Klingelhoefer, F.[2] & Mirror Team[2]

1. Centre Littomer, LGMSS – URAC 45, Université Chouaib Doukkali El Jadida Maroc
2. Ifremer, Centre de Brest, Plouzané France

Introduction

The structure of conjugate passive margins provides information about rifting styles, the initial phases of the opening of an ocean and the formation of its associated sedimentary basins. The crustal structure of the Central Atlantic conjugate margins has been subject to several wide-angel seismic cruises, the SMART, LASE, USGS and EDGE cruises on the North American margin and the SISMAR, MIRROR and DAKHLA cruises on the NW African margin (Figure 1).

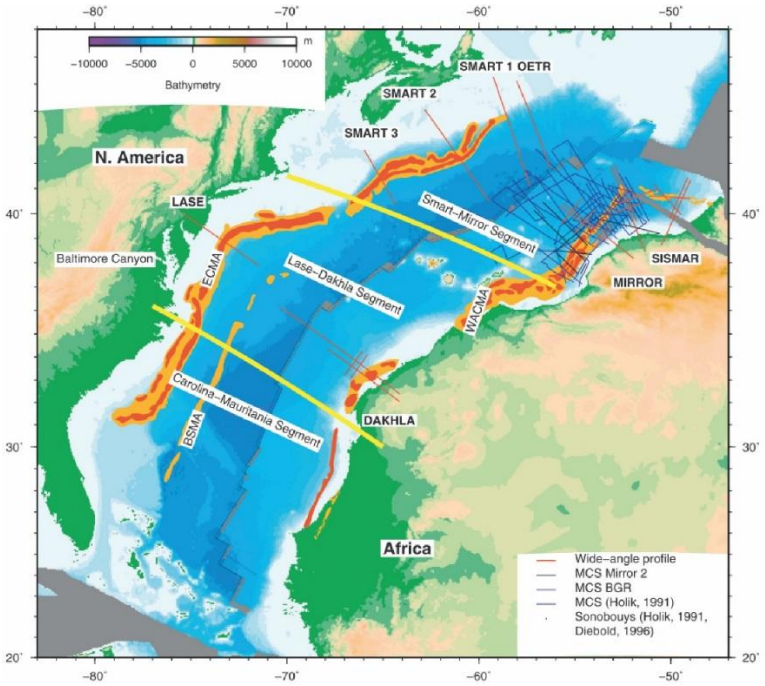

Fig. 1: *Plate kinematic reconstruction of the central Atlantic at M25 (156.5 Ma) after Sahabi et al., 2004. Wide angle seismic profiles are marked by red lines and magnetic anomalies ECMA, WACMA and BSMA by orange and red outlines (After Klingelhoefer et al., 2016).*

Morocco and Nova Scotia conjugate rifted margins formed during initial rifting of the Atlantic about 180-200 Ma ago during the early Jurassic (Sahabi et al., 2004). It has been proposed to have opened in a asymmetrical rifting style leading to exhumation of mantle material on the Canadian side. Later work based on exactly conjugate wide-angle seismic profiles proposed a more symmetric mechanism of crustal thinning (Biari et al., 2015).