The Triasico-Liassic Rifting Related to the Central Atlantic Opening: Geometry at Ground and Sea

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The control of the triasico-liassic basins structure in the Atlantic Central and at conjugate margins (East American and Nova Scotian) is necessary to reconstitute the Pangean kinematic dislocation. Synthesis studies (Olivier and Al, 1984; LeRoy and Piquet, 2001; Sahabi, 2004; Sahabi and Al, 2004) show that the Triasico-liassic basins in these margins correspond to a system of grabens or half-grabens located at ground or on the deep of Maroccan margin.

Recent works completed by scientists: University of Bretagne Occidentale (IUEM), CNRS-French (GDR “Marges”), IFREMER-French, Geophysical Institute of Lisbon, Universtity of Marrakech and El Jadida (Morocco), aimed at looking further into knowledge of the structural development of the Atlantic margin off NW Morocco. This study related to: margin formation and segmentation, salt diapiric structure repartition in deep basins, continent-ocean crustal transition off Morocco and explain the mechanisms of the lithospheric breaking off between Moroccan margin and its conjugate Canadian margin.

Following this work, Maillard and Al, 2006 proposes a subdivision and a 2D-model of the conjugate margins of Morocco and Nova Scotia at a rifting pre-rupture stage. A deep penetration seismic survey, carried out during the SISMAR cruise, allowed us to propose a new subdivision of the NW Moroccan margin. Great faulted structures, extension and geometry of salt triassic basins are clearly mapped at the broad of El Jadida. Other structures having the same age, observed in the Moroccan Meseta and High Atlas, are compiled from bibliography and integrated in the data base to allow an exhaustive interpretation for the first phases of the Atlantic opening.

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References:

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