



Sedimentary evolution of a fore-chain Sais basin during Plio-quaternary and modalities of tectonic inversion (Sais Basin, Morocco)

M. Charroud (1), B. Cherai (1), M. Benabdelhadi (1), A. Charroud (2), N. El moutaouakkil (3), Ch Falgueres (4), A. Lahrach(1)

(1), FAC. Sciences and Technology, Department of Earth sciences, PB 2202 Fez Morocomcharroud@hotmail.com, (2)University of Ibn Zohr Agadir Morocco, (3) University Mohamed V Rabat Morocco, (4) National Natural History Museum Paris France

The Sais basin situated between the Rif range in north and the middle Atlas range in south. It corresponds to a complex evolution during Pliocene and the quaternary.

The plain of Fez constitutes the Eastern part of this basin. Its sedimentary evolution during the plio-quaternary one is complex; it corresponds to the succession:

“Marls blues of Fez” this pelagic marine formation with accumulation of up to 1000 meters and which is dated from late Miocene to late Pliocene. This formation is finished by littoral sands which are limited to the southern front of the prerifian ridges reducing thus the deposit area towards the current limits of the Sais basin. Thus the Sais basin is narrow marine golf located between the two ranges of Rif and middle Atlas which ensures connection enters the Atlantic sea to the west and the Mediterranean sea to the North-East

Final Pliocene mark the change in the nature of the basin which becomes lake alimented from the east by the Paleosebou River. The axis of the basin corresponds to limestone deposit (plain of Fez and Meknes). On the edges, conglomerates and marls with gypsum occupy the limits with the relief of southern Rifian ridges. Radio-chronological dating in travertine’s associated with this lake system gave an age of +300000 years.

With Quaternary this paleogeographic sketch is stopped by a whole of phases of erosion responsible for creation for current morphological model.

From tectonic point of view, its passage between marine basin and Lake Basin coincides with the reactivation of structures of the Rifian southern front expressed by Tghat and Zalagh ridges. The closing of the lake basin is contemporary mobilization structures of middle atlas located at the South and continuity of progression towards the south of the structures of Tghat and Zalgh. This tectonic inversion is responsible of uplift of the area of Sais basin.