



Tectono-sedimentary evolution of Gulf of Gabes (Southern Tunisia) during Mezozoic-Cenozoic periods

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In order to reconstruct the tectono-sedimentary evolution of Gulf of Gabes (Southern Tunisia), a seismo-stratigraphic analysis of single and multichannel seismic reflection profiles has been carried out. High-resolution 2D seismic profiles allow us to identify, between 20 and 40 km offshore the Gulf of Gabes, a wide deformation zone, characterized by a set of NW–SE and E–W striking fault segments related to a polyphasic activity. Within this region, we observe: 1) NW–SE Cretaceous normal faults; 2) local transpression structures attested by well-defined compressive features like push-up, fault-bend anticlines and folds; 3) angular unconformities below the Cenomanian deposits; 4) NW–SE striking Neogene normal faults. The major unconformity is at the base of the Cenomanian Zebbag formation. Based on the available sections, this unconformity is determined to have been formed by uplift, erosion or rotated fault blocks essentially during the Mesozoic period. In conjunction with the currently tectonic background, the following conclusions are suggested: the unconformities at the bases of the Cenomanian formations are most likely related to large scale uplift during Aptian-Albian time or may be related to reactivation of the Northern Chott dextral slip fault in the upper Aptian. In Neogene rocks, we observed a normal oblique and strike slip reactivation of inherited NW–SE and E–W faults as a consequence of the NW– Africa/Europe convergence. With regard to active tectonics, recent GPS data and local seismicity events in the Gulf of Gabes suggest that this deformation pattern could be still active and accomplished through deep-buried structures. The Gulf of Gabes was active since the Mesozoic to present day and several periods of tectonic deformation.