New megasequences cutting of sismic reflection interpretation in Gabes-Tripoli offshore basin/ SE Tunisia : rift to post-rift evolution

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The Gabes-Tripoli basin was initiated during late triassic-Early jurassic as a left-lateral pull-apart basin by the reactivation of WNW trending Hercynian fault systems.

Since the Gabes-Tripoli basin architecture and its depositional sequences are extented toward the libyan offshore the model of tectonic and structural architecture proposed in the tunisian part became correlable with the regional geology of the North Libyan offshore wich is closely related to the evolution of the intra-continental Sirt basin, the Tethys and the dynamics of the African and Eurasian plates.

The interpretation of the seismic profiles covering the Gabes-Tripoli offshore basin in the Tunisian part shows that in the late Triassic-early Jurassic the distension (linked to the evolution of the Tethys ocean) generated half-grabens and horst limited by normal faults in the NS direction, NW-SE and EW which affect; probably the late Juarassique and all the cretaceous sequences also control the thickness and lateral variation of facies.

Indeed, this study consists in subdividing the whole sedimentary succession into tectonostratigraphic megasequences, which are linked in one way or another to regional tectonic episodes.

As a result, mainly two sedimentary megasequences were recognized in the Gabes-Tripoli basin:

-Syn-rift megasequence : The depositional sequences of the syn-rift phase includes the upper and the lower cretaceous wich were deposited within the half-grabens with an important syn-sedimantary control visible by changes in the dip of the reflectors of the upper cretaceous, the onlap terminations (showing discordances), and probably re-worked facies.

-Post-rift megasequence : represented by the paleocene and eocene series. The lower boundary of the post-rift megasequence is represented by the paleocene sediments and the sealing of the basin took place during the Upper Eocene when volanic activity ceased and the rift was aborted.

Key words : seismic interpretation, geodynamic contexte, Gabes-Tripoli basin, megasequences, syn-rift, post-rift.