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The Tyr-Nabatiyeh plateau: a relatively stable Cenozoic plateau of the locally inverted Lebanese margin.

Ata Elias (1) and Paul Tapponnier (2)

(1) American University of Beirut, Beirut, Lebanon (ata.elias@aub.edu.lb), (2) IPGP, Tectonique, paris, France (tappon@ipgp.jussieu.fr)

The Lebanese Restraining Bend (LRB) of the sinistral Levant Fault System is a region of crustal shortening that resulted in the uplift and formation of Mount-Lebanon and Anti-Lebanon ranges in the late Cenozoic. These structures overprinted the pre-existing upper Jurassic to lower Cretaceous Levant passive margin and locally inverted large parts of it. The morphology of the present day Eastern Mediterranean margin facing the LRB and of its coastal zone reflects this setting as it shows narrow to almost absent continental shelf in central Lebanon with high topographic gradients along the coast. However, southwest of Mount-Lebanon, a broad plateau – the Tyr-Nabatiyeh plateau – extends between the high relief of Mt-Lebanon and the large continental shelf offshore. It has a sub-tabular flat geometry of a Mezosoic-Neogene sequence gently and broadly folded with patches of Miocene deposits discomformably overlying the older strata. It appears to have been a relatively stable platform since the late Cretaceous-Eocene and has probably emerged since the late Miocene.
A prominent set of NE-SW faults most clearly observed south of Sarafand and farther south in Galilee are best developed in Cretaceous rocks and terminate in the Eocene-Miocene cover. These faults are very likely inherited from the passive margin structure. They disrupt the geology without significantly modifying the flat topography of the plateau. Only one fault, the Chabriha-Zrariye fault that we interpret as an old normal fault tectonically inverted into a reverse fault, seems to have a clear geomorphic expression with uplifted marine terraces between Chabriha and Adloun over its hanging-block. Its topographic scarp dams small rivers which results in small quaternary filled basins to the southeast. Minor dextral strike-slip component may also be associated with some of these faults. Recent seismic activity on one of these small faults was well documented and resulted in minor-to-significant damage in the Srifa area of Southern Lebanon, denoting a potentially seismic threat to be considered more seriously.