
The role of Anaximander Seamounts in an active transform fault zone in the eastern Mediterranean: processing and interpretation of EMED2010 seismic reflection profiles 6-10

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The region separating the African plate from the Aegean-Anatolian microplate in the eastern Mediterranean contains an active subduction/collisional plate boundary. A transform fault zone divides this active subduction/collisional plate boundary into two sections, the Cyprus and Hellenic arcs. A wide strip of complex structures, which are thought to have originated from episodic strike-slip and thrust faulting, as well as extensional motions, which have been observed, distinguishes the fault zone. The complexities in this area appear in bathymetry as excessive lows (Rhodes, Finike Basins) and highs (Anaximander Seamounts). This thesis is particularly focused on the region linking the Rhodes Basin with the southwestern extension of the Anaximander Seamounts.

The purpose of this thesis is to process and interpret approximately 200 km of marine multichannel seismic reflection data in terms of Miocene (and subsequent) geological history, using the new seismic images created as well as those from previously available seismic lines to map the structures in the area, and develop conclusions as to the Neogene history of the area, with distinct focus on the interrelation between the structural highs (i.e., Anaximander Seamounts) and lows (i.e., Rhodes Basin).