

Strike-slip tectonics in the Puglia Shelf between Gargano Promontory and Monopoli (Southern Adriatic Sea)

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The Puglia shelf represents the prosequence of the foreland of the Apennine Chain (the Apulian Platform) which is affected by several normal-slip faults lowering it off shore (MOSTARDINI and MERLINI, 1986).

The faults characterizing the studied area constitute both mainly NW-SE trending systems, parallel to sub parallel to the coast, and rather straight-lined, roughly E-W trending ones. Some of the faults were activated as normal-slip faults since Jurassic (DE'DOMINICIS and MAZZOLDI, 1989) and caused a lateral differentiation of sedimentary environments. In correspondence with some of them, also during the Cretaceous, carbonate platform and basin facies were separated.

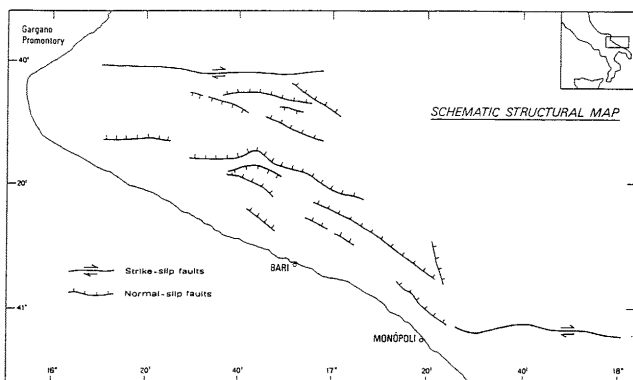
Flexotir and Air Gun seismic profiles interpretation allowed us to recognize an evolution in terms of strike-slip tectonics of the E-W trending systems located South of Gargano Promontory and East of Monopoli.

The South-Garganic system represents a right-hand shear zone whose main structural feature is the right-hand strike-slip fault pointed out by FINETTI (1982) (Gondola Line in DE'DOMINICIS and MAZZOLDI, 1989), which should extend as far as the mainland where it continues in the tectonic alignment S. Giovanni Rotondo-Monte S. Angelo. Cross sections of this structural element, which has been active at least till the base of the Plio-Quaternary sequence, show positive and negative flower structures (COLANTONI *et al.*, 1990).

The system East of Monopoli is located approximately in correspondence with the 41st parallel, and it is characterized by a set of high angle often anastomosing faults, bounding a series of basins and structural highs now buried by Plio-Quaternary deposits. The braided pattern of faults and especially the rhomb-shape of some basins allow us to relate such system to a right-hand shear zone. The presence of basins and structural highs results from divergence and convergence of the anastomosing right-hand strike-slip faults within the shear zone (CROWELL, 1974). The faults acted till Lower Pliocene; they do not seem to extend as far as the mainland but they end westwards in correspondence with normal-slip faults parallel to the coast.

The two systems represent deep regionally important features connected to the counterclockwise rotations of the Adriatic Plate or "African Promontory" already pointed out by FINETTI (1984), LOWRIE (1986), ANDERSON (1987).

The strike-slip tectonics took place during the Tertiary both reactivating the Jurassic normal-slip faults responsible of the first fragmentation of the Apulian Platform, and determining the formation of new strike-slip faults. Most of the parallel to the coast NW-SE trending normal-slip faults should be considered produced by the along-strike stepover on the right-slip zones or, in some cases, they may represent subsidiary structures across strike-slip faults with differing amounts of horizontal displacement.



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