



## **Stratigraphic and Structural setting of Cenozoic deep-sea units from the Agri valley (southern Apennines, Italy), recording the tectonic evolution of the Southern Apennines.**

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Cenozoic units from thrust-top and foredeep basins provide crucial information for constraining the progressive evolution of the Southern Apennine thrust and fold belt and, more in general, the geodynamic evolution of the Mediterranean area. For this reason, we have analysed the stratigraphic and tectonic setting of deep-sea Cenozoic units exposed in the southeastern sector of the Agri Valley (Basilicata, Southern Italy), in an area located immediately north of the Montemurro village, between the Costa Molina and Monte dell'Agresto localities. These units have not been studied in detail so far and different interpretations are reported in the literature. The study was based on an accurate field survey which led to a new geological map and to the reconstruction of the stratigraphic and structural setting of the area. Results of the field survey were constrained by well, seismic and new biostratigraphic data kindly provided by Eni. In our study, we focussed on the Albidona Formation, which was deposited in a thrust-top basin on the Liguride accretionary wedge, formed above the NW-dipping subduction of the Ligurian Tethys Ocean during the Late Cretaceous? - Early Miocene. Facies characteristics and age determinations allowed the differentiation of the Albidona Formation in two members, with the older one, identified as Member B-C (Lutetian) consisting of alternating marls, sandstones and clays and the younger one, identified as Member D (Barthonian/Priabonian), consisting in alternating sandstones and conglomerates. In particular, the presence of marker horizons such as a pebbly mudstone containing ophiolite debris strongly helped in the structural reconstructions. By this means, we recognized the presence of two folding phases affecting the Albidona Formation. Moreover, the geometrical relationships between the two members and the overlying Miocene Gorgoglione Formation allowed recognising two major NE-trending normal faults, which crosscut the aforementioned structures. These data provide new indications on the tectonic setting and the evolution of the Southern Apennines thrust and fold belt.