FASTMIT PROJECT ACTIVITIES IN THE APULIA PLATFORM: EVIDENCE OF AN ACTIVE FAULT SYSTEM IN THE SALENTO OFFSHORE (IONIAN SEA)

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The FASTMIT Project (FAglie Sismogeniche e Tsunamigeniche nei Mari Italiani) aims to widening and systematizing the knowledge on seismogenic and potentially tsunamigenic faults in the Italian marine areas, thereby taking the pledge to address compelling issues related to geohazards of coastal areas and offshore infrastructures. FASTMIT study areas straddle the Europe-Nubia plate boundary, with focus on the Adriatic Sea, the Gulf of Taranto, the Sicily Channel and the Southern Tyrrhenian Sea.

Here we present the preliminary results in the Gulf of Taranto. This area has been recently studied in the framework of various national and international projects (e.g.: EC HERMES, MAGIC, RITMARE, CARG, DPC-INGV-S1), which highlighted its geological complexities. In this area, the Apulia Platform is inflected under the Calabrian Accretionary Wedge as a result of the subduction of the Ionian oceanic crust and the subsequent collision with the Apulia continental margin. The Apulia Platform units have been recognized under the allochthonous units of the accretionary wedge in all the Gulf of Taranto and in the offshore of Crotone where they are affected by transpressional structures (Maesano *et al.*, 2017; Volpi *et al.*, 2017), whereas in the foreland areas (Salento offshore) they are affected by normal faulting.

High-resolution geophysical data, including detailed morpho-bathymetry, have been acquired in the Gulf of Taranto in the last decade and led to the identification of geomorphic features and related deposits recording important mass movement events (Ceramicola *et al*., 2014). FASTMIT will acquire new seismic data in these locations in order to link the observed geomorphic features (i.e. slope failures, buried debris flows) with deeper structures responsible of their origin and representing potential seismic hazards. Both in the Gulf of Taranto and in the Salento offshore, many of the deep geological structures responsible for the seismicity in this area are still debated and further and more focused studies are necessary in order to improve their characterization and turn them into an effective input for geohazard assessments.

Two main earthquakes are historically documented in the Salento offshore (the 20 October 1974 earthquake, MI 5.1, and the 20 February 1743 earthquake, Mw 7.1) whose origin has never been thoroughly explained and for which a potential tsunami threat for the Puglia coastline should thus be investigated.

The seismic profiles acquired along the Apulia Platform show numerous crustal normal faults subparallel to the Calabrian accretionary wedge front. The major normal faults display slope breaks with great lateral continuity where gravity-driven processes are observed in the seafloor (Ceramicola *et al*., 2014).

Argnani *et al*. (2001) firstly recognized the presence of a system of horst and graben in the Salento offshore and interpreted it as a spatially limited features related to the flexural stress acting on the Apulia Platform.

Recent seismic reflection profiles and a detailed morpho-bathymetric survey acquired by OGS (Volpi *et al*., 2017) confirm the presence of a 50 km NW-SE elongated horst-and-graben system in the central part of the Apulia foreland, southeast of Leuca town. The same evidence was found in the multichannel profiles provided in the collaborative framework between INGV and Spectrum Geo (CA-60). The grabens are bounded by high-angle normal faults and are characterized by the presence of the syn-tectonic basins with evidence of growth strata in the Plio-Pleistocene succession. The resolution of the data and the absence of detailed stratigraphic constraints in the area do not allow to make precise considerations on the age of inception and rates of activity of the fault system.

For this reason, it is of fundamental importance the study of this fault system in the Salento offshore and its eventual relationship with the historical seismicity of the Otranto channel.

In this contribution, we present the preliminary results of the analysis carried out with the available data and the program of data acquisition (high-resolution multichannel seismic profiles and a core log) to better detail the geometry and kinematics of the Salento offshore fault system in the framework of the FASTMIT project. The results of this study will be used to update the seismogenic sources database DISS and EDSF (Basili *et al*., 2013; Basili *et al*., 2008) and to improve the seismic and tsunami hazard assessment in the northern Ionian Sea area.

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