

Architecture and Pliocene to Recent evolution of the offshore prolongation of the Granitola - Castelvetro Thrust System (Sicily Channel)

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High-resolution, seismic profiles were recorded in the offshore of Mazara - Punta Granitola with the purpose of reconstructing the architecture and Pliocene to Recent evolution of the south-west prolongation of the Granitola-Castelvetro Thrust System, identified as an active structure possibly related to destructive historical earthquakes (Barreca et al., 2014; Ferranti et al., this meeting).

A number of seismic units were identified. The oldest one is interpreted as representative of the Lower Pliocene pelagic deposits known in the region as Trubi. Lower-middle Pleistocene calcarenites are widespread along the continental shelf (CS) between Mazara del Vallo while their top rapidly deepens moving southeast-ward Capo Granitola. In this area, lower-middle Pleistocene calcarenites are unconformably overlain by the late Pleistocene-Holocene deposits. These latter are thin or absent NW of Punta Granitola along the CS, at water depth less than ~30 m, suggesting that this sector experienced uplift during the Quaternary.

Small scale, NW- and SE-displacing reverse faults are observed along the CS where they cut the lower-middle Pleistocene calcarenites and offset the seafloor. South-eastwards, south-east-verging, reverse faults affect lower-middle Pleistocene calcarenites as well as the late Pleistocene-Holocene layers, suggesting that fault displacement acted during the post-LGM.

Growth folding of Upper Pleistocene-Holocene deposits and thrust faults, predominantly dipping to the NW, affecting Pliocene rocks are observed in the immediate offshore Capo Granitola.

The integration of the new data with those obtained from multi-channel profiles suggests that the active folds and thrusts are the uppermost expression of steep crustal ramps (Monaco et al., 1996; Lavecchia et al., 2007; Meccariello et al., this meeting) which upthrust the Saccense platform at depth.

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