



## **0.1 Submarine mass movements in the Western Gulf of Taranto, Ionian Sea**

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The study area, southeastern boundary of the Apennine Chain, represents the modern foreland basin system of the southern Apennines collisional orogen. Newly acquired multibeam bathymetry, sub-bottom profiler and lithologic data have been used to identify evidences of several types of mass movements present on the continental slope.

Many small-scale undulations affect the superficial sediments. On the base of their morphology and internal structure, some were interpreted as superficial deformation (creeping), some as sediment waves, while others may result from multi-process genesis.

Given the high depositional input of the sedimentary basins and the fact that the area is tectonically active, slumping is an ubiquitous phenomenon. In fact, on the multibeam map we observe many slump scars of variable dimensions.

A number of superposed upward convex, lens-shaped, acoustically transparent debris flow deposits are located, in general, just above an unconformity of possible younger Dryas age. Among these, two debris flow deposits are about 100 km<sup>2</sup> large.

The complex system of the Neto canyon extends over 35 km. Its head is shaped as a 24 km wide amphitheatre, cut by numerous gullies. The retrogressive erosion at the head of the system is interpreted to result from turbidity and hyperpycnal flows combined with other mass-wasting processes like slides, slumps and debris flows.

The different but interrelated types of mass movements identified on our data-set pro-

vide details for submarine instabilities that affect the foreland basin of an active collisional margin.

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