



## **Widespread seafloor instability on Gela basin slopes (Sicily Channel)**

D. Minisini (1-2), A. Asioli (3), F. Fogliini (1), F. Trincardi (1)

(1) ISMAR-CNR, Bologna, Italy, (2) Dip. Scienze della Terra, Univ. di Bologna, Italy, (3) IGG-CNR, Padova, Italy (daniel.minisini@ismar.cnr.it)

The continental slopes of Gela basin, along the western side of Malta Plateau, show evidence of widespread and recurrent sediment failure. Mass transport features extend over 65 km, along the margin, from offshore Malta to offshore Gela, and range in water depths between 200 and 800 m. Mass-transport deposits are up to 30 m thick and appear either shallowly buried or exposed at seafloor. In both cases individual mass-transport deposits mobilize relatively small sediment volumes (typically in the order of 0.1-0.2 km<sup>3</sup>) and display short run outs. When exposed at seafloor, failed masses show an extreme morphological complexity with massive slide blocks, pressure ridges and hummocky surfaces. Overlapping and coalescent mass-transport deposits document the recurrence of mass-failure processes in the area. In particular, two adjacent slides, only 6 km apart from each other, present similar headscarps and evacuation zones but markedly distinct morphology in the resulting mass-transport deposits. This difference is owing to the sediment units involved in the failure: the mobilization of old and relatively overconsolidated units resulted in a more blocky slide, while younger and shallower buried units generated a mud flow with surficial pressure ridges. The headscarps of these mass-transport deposits cut into a draped stratified unit that extends up to the shelf and lays on an erosional truncation that formed during the last glacial sea level lowstand. Therefore, these failures occurred after the interval of sea level rise and sometimes during the modern high stand. Proceeding south along the same slope, additional slides occur including the largest slide of the area that presents a 12 km-long crescent-shape headscarp with a height up to 70 m, and slide blocks (up to 250 m-wide) spread through an area of at least 48 km<sup>2</sup>. The area is currently investigated to ascertain if, and how much, these highly differentiated failures impacted on the distribution of benthonic faunas.