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LANDSLIDES AND POCKFORMS OF SOUTHERN SARDINIAN MARGIN

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The southern Sardinia continental margin is characterized by a submarine depositional system divided by Pliocene tectonics into several marginal basins in which arrives sedimentary contributions from various segments of the Continental Shelf (Lecca et al., 1998). The structure of the margin is characterized by the succession of two deformational regimes. The oldest corresponding to a compressive phase of crustal thickening during the Oligocene Miocene, contemporary to the rotation of the Sardo-Corso block and the opening of the Algero-Provençal basin (Masclé et al., 2001).

Based on multibeam data collected during MAGIC (Marine Geohazard along Italian Coasts) surveys, integrating with seismic data acquired during of previous research projects (Progetti Finalizzati CNR, CARG, PRIN and others), have been studied the main gravitational processes in the continental slope of south Sardinia. South western Sardinia continental margin includes the distal shelf and upper slope in front of San Pietro and Sant'Antioco islands, the Gulf of Palmas and Teulada Cape.

Instability areas are represented by canyons headscarps in retrogressive erosion, particularly active are the Toro Canyon heads and the Teulada canyon system which shows evidences of tectonic control. In this area, particularly significant is the complex landslide off the Toro Island which affects a volume of loose sediments of about 7 km³; two low-angle landslides that develop off the coast of Cape Teulada affects a volume of 2 km³. Areas characterized by fluids emission are home of large pockforms (d > 500) concentrated in the summit area of the most active headscarps, while large fields of pockmarks and mud volcanoes were found on the right side of Teulada Canyon.

Sardinian southern margin includes distal shelf and upper slope of the Gulf of Cagliari and the northernmost part of Ichnusa seamount. Gravitational instability processes are represented by two major landslides located 10 Nm off the city of Cagliari, the landslide body is affected by processes of base scouring due to the migration of the meanders of the Pula Canyon. 10 nautical miles off Punta Zavorra, on an isolated strip of continental shelf were recognized block landslides evolved along the main tectonic features (NW-SE) that give rise to a debris avalanche deposit; gravitational instability occurs at the summit area of the left side of Sant'Elia canyon, where significant creep waves affects surface sediments.

