



6th YOUNG GEOMORPHOLOGISTS' DAY

Geomorphology for Society

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Cagliari, 28-30 September 2015

HABITAT MAPPING AND PALAEO-SEALEVELS OF THE LAST GLACIAL MAXIMUM COASTLINE ON THE SAN PIETRO CONTINENTAL SHELF (SW SARDINIA)

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Study area is located on south-western Sardinian continental shelf, several miles off San Pietro island. The structural setting of this continental margin is the result of the superimposition of two successive deformational regimes. The first refers to a compressive geodynamic phase of crustal thickening occurred during the Oligocene - Miocene age, contemporary to the Sardinia – Corsica microplate rotation; the second, more recent, is associated with the Tyrrhenian spreading stage. The continental shelf is characterized by an irregular morphology with large outcrops of the Oligo-Miocene volcanic-sedimentary succession; the limit between inner and outer shelf is represented by an array of cliffs engraved in the volcanic substrate at – 125m. A Geomorphological analysis, the biological data on *Coralligenous* assemblages and the main benthic biocoenoses were collected by researchers during a Remotely Operated Vehicle survey .

The paleo-cliff lines shows several gravitative morphologies, caused by backwards erosional processes; the lithological feature of these cliffs implies a long-term evolution and polycyclic elaboration, which had likely started in late Middle Miocene and continued during the Plio-Pleistocene transgressive phases. However, the erosional and gravitative morphologies, we can now observe, are mainly due to the last stage of low sea level (MIS 2). During this stage, physical alteration processes on the rock surface, due to periglacial weather conditions, played an important role. The Ignimbritic lavas often lay on cineritic and volcanoclastic levels, this has favored processes of differential erosion that, together with an full fracturing, has brought to the evolution of gravitational movements with falls and toppling-falls of bloks of very large volume (Debris avalanche).

The digital terrain model of the seabed lets identify a paleo-ria, that interrupts the continuity of the rock frames which can be found at 130 m BSL; in the lower area, filled now by fine sediments, there might have been a paleo-lagoon during the lower sea level of MIS 2. The specimens of the seabed, taken here through a dredging, has brought up a black-grey sandy silt full of mollusca thanatocoenosis of littoral, lagoon and shallow water habitat and some open shelf species. Some fossils have been analyzed through a C14 dating test:

Beta-310989- D2 - *Mytilus cf galloprovincialis* 15360±280 BP cal.

Beta-310992- D5 - *Acmaea virginea* 19100±270 BP cal.

The results let us relate some thanatocoenosis species to a lagoon sea level during the LGM.

