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A geomorphological map of the Enarete seamount

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Submarine volcanoes are common morphological features on certain zones of the ocean floor and seafloor imagery systems (i.e.: multibeam and backscattering data) are recently playing a key role in providing instrumental data for the correct interpretation of geomorphic processes involved in their genesis and development through time.. We present here a detailed geomorphological map of the Enarete seamount (Aeolian Arc – Tyrrhenian Sea), produced by the interpretation of a high resolution Digital Terrain Model (DTM) obtained by a multi-beam bathymetric survey. The bathymetry has been acquired during the M70 oceanographic cruise, carried out on board the R\V Meteor in 2006.
The Enarete seamount is located in the westernmost sector of the Aeolian Arc, between other two seamounts: Sisifo (NW) and Eolo (SE). The submarine edifice covers an area of about 160 km^2 and rises roughly 2000m from the seabed, reaching at the top a depth of 300m below the sea. The volcanic edifice appears almost perfectly conical, presenting a slight elongation along the NW-SE direction. An extensive collapse dominates the structure on its eastern flank and some fractures were visually investigated using a work-class ROV (Quest4000). DTM analysis allowed the precise recognition of the most important volcanic landforms and morphostructural elements (e.g.: crater area, cone base, collapse scars, etc) of the edifice, and allowed to perform also a detailed lineaments analysis.