

# 6th International Symposium on Submarine Mass Movements and Their Consequences

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## Mass wasting features on the submarine flanks of Ventotene volcanic edifice (Tyrrhenian Sea, Italy)

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### **Content :**

High-resolution multibeam bathymetry acquired around Ventotene and S. Stefano islands (eastern Pontine Archipelago, Italy) enabled us to map main mass wasting features affecting their submarine portions. Large-scale instability morphological features are absent (apart from a 4x2.5 km caldera in the western sector), whereas 126 landslide scars of hundred-meter of length scale were identified between 130 m and 1150 m of water depth (wd). Two main groups of scars can be distinguished: the first one affects the edge of the insular shelf between 130 and 260 m wd. The second group affects the lower slope and surrounding basins, representing cases of retrogressive failure at the heads of channelized features. The different morphological relief of the scars coupled with the recognition of crescent-shaped bedforms made it possible to distinguish two mass-wasting/erosive stages and consequently to map the more active sectors of the edifice. The future evolution of the mass wasting processes will produce the enlargement of erosive sectors with possible formation of large channels, which will carve wide sectors of the edifice, as suggested by available geological constraints and by comparison with the nearby and older western sector of the Pontine archipelago, where a more mature organization of mass wasting processes is observed. The present study can provide useful insights for hazard assessment and future planning of risk mitigation in such islands that are densely populated and touristically exploited during the summer months.

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