

## **Mass transport deposits as witness of Holocene seismic activity on the Ligurian margin, Western Mediterranean (ASTARTE project)**

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The Ligurian Margin (Western Mediterranean) is at the transition between the Southern Alps and the Liguro-Provençal margin and it is one of the most seismic areas of France. Several historic earthquakes have been indexed; the strongest, on February 23rd, 1887, occurred offshore Menton and Imperia and also caused a tsunami wave. Its equivalent magnitude has been estimated between 6 and 6.5. In addition, a moderate recurrent seismicity shakes the margin. The aim of this study is to understand the link between seismic activity and slope destabilization, and to identify the sedimentary deposits resulting from mass transport or turbidity currents.

During Malisar (Geoazur laboratory), Prisme 2 and Prisme 3 (Ifremer) cruises, bathymetry, seafloor imagery (SAR), geophysics data (CHIRP SYSIF and high resolution seismics), and sediment cores have been acquired on the continental slope, focussing on canyons and submarine landslides, and in the basin. These data record numerous mass transport deposits (slump, debrites) in the different physiographic areas of the margin.

To search for evidences of past Ligurian margin seismicity during the Holocene, we focused on the northeast part of the margin, the Finale area. We identified and sampled acoustically transparent Mass Transport Deposits up to 20-m thick in the bottom of three coalescing canyons: Noli, Pora and Centa canyons from W to E in the area offshore Finale Ligure. We also recovered an MTD in the collecting deeper canyon system. MTDs in cores appear as sediment with different degrees of deformation (tilted blocks, slump, debrites) and are topped by hemipelagites. The radiocarbon age of the top of MTDs can be considered synchronous and centered around 4900 yr BP. Mass wasting occurring over more than 50 km of the Ligurian margin could indicate that an earthquake stroke the Finale area sector at that time.