SEISMICITY AND DEFORMATION OF THE LIGURIAN SEA

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In Autumn 1992, a co-operative seismic programme between German, French and Italian geophysicists was performed in the Ligurian sea and adjacent coastal areas in order to study the seismic activity and tectonic deformation of these geologically complex regions. Forty-four mobile seismic stations onshore and twelve OBS (ocean bottom seismographs) offshore were deployed and the seismic activity was observed for 100 days onshore and 30 days offshore. The evaluation of the data identified 110 events of magnitude greater than 0,9. The obtained accuracy of the epicentral locations is better than 5 km and will be improved after the correct crustal model for this area has been considered. The model is being evaluated from deep seismic soundings offshore Côte d'Azur where the limit between the continental and oceanic crusts was identified. The seismic foci delineated active tectonic lineations and showed that the Sestri Voltagio Zone is particularly active undergoing intense deformation. The trends of the offshore events are still being studied but seem to be associated with salt tectonics and transform faults. The main seismicity offshore was located at depths of 7 to 13 km while onshore, deeper events to a depth of 25 km associated with crustal shortening across the Maritime Alpes were recorded. The evaluation of focal mechanisms is expected to identify the sense of movement between the various blocks of the eastern Ligurian sea.

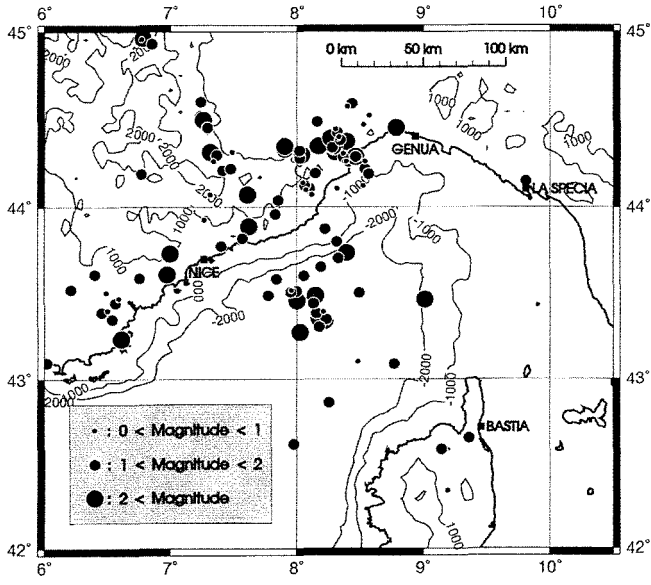

Fig. 1 - Topographic map with locations of earthquakes. Contours are in metres.