Geophysical Research Abstracts
Vol. 14, EGU2012-13391, 2012
EGU General Assembly 2012

Seismicity of North East Italy and data quality of the broadband network managed by OGS

C. Baranaba, A. Saraò, and M. Plasencia Linares
Istituto Nazionale di Oceanografia e Geofisica Sperimentale (OGS) - Udine, Trieste - Italy

Seismicity of North-East Italy demarcates the boundary between the Adria microplate and the Eurasian plate. It is characterized by a complex tectonic pattern, resulting from the superposition of several Cenozoic-age tectonic phases. The actual state of stress is a consequence of the Adria microplates progressive motion and its anti-clockwise rotation with respect to the Eurasian plate.
The seismotectonic characteristics of the region are not homogeneous, and the contemporary seismic deformation pattern is quite complex, being the results of the superimposition of several distinct strain fields related to different Alpine phases.
Although this area is one of the most tectonically active in the Alpine Chain, it is characterized by moderate seismicity mainly concentrated in the piedmont belt in the central Friuli, with extension in Veneto to the west and in Slovenia. The focal mechanisms are mainly of thrust type but different nodal plane orientations are found related to the complexity of the region.
In 1977, after the 1976 Ms=6.5 Friuli earthquake an integrated seismic network was installed to monitor the regional seismicity of NE Italy and surroundings as well as to provide high quality data for research projects in regional and global broadband seismology. The network currently comprises 21 short period stations and 15 stations equipped with broadband and accelerometer sensors all telemetered to and acquired in real time at the OGS seismological data center in Udine. The data quality is routinely investigated on the broadband seismic network through standard seismological tools using Power Spectral Densities for frequencies ranging from 0.01 to 16 Hz and a study on the seismic background noise spectra for the Northeastern Italy (NI) stations has been recently carried out in order to quantify the quality of stations from 0.01 to 16 Hz. Our analysis indicates in general the goodness and consistency of our installations that have been improved in the years. Since 2006 the broad band data managed by OGS are intensively used also to compute moment tensors in near real time for M>3.7 earthquakes occurring in NE Italy and strict surroundings.