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OGS improvements in the year 2011 in running the Northeastern Italy Seismic Network

P. L. Bragato, D. Pesaresi, A. Saraò, P. Di Bartolomeo, and G. Durì
OGS, Dep. CRS, Udine, Italy (pbragato@inogs.it, dpesaresi@inogs.it, +39 0432 522474)

The Centro di Ricerche Sismologiche (CRS, Seismological Research Center) of the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS, Italian National Institute for Oceanography and Experimental Geophysics) in Udine (Italy) after the strong earthquake of magnitude M=6.4 occurred in 1976 in the Italian Friuli-Venezia Giulia region, started to operate the Northeastern Italy Seismic Network: it currently consists of 15 very sensitive broad band and 21 simpler short period seismic stations, all telemetered to and acquired in real time at the OGS-CRS data center in Udine.
Real time data exchange agreements in place with other Italian, Slovenian, Austrian and Swiss seismological institutes lead to a total number of about 100 seismic stations acquired in real time, which makes the OGS the reference institute for seismic monitoring of Northeastern Italy. Since 2002 OGS-CRS is using the Antelope software suite on several workstations plus a SUN Cluster as the main tool for collecting, analyzing, archiving and exchanging seismic data, initially in the framework of the EU Interreg IIIA project "Trans-national seismological networks in the South-Eastern Alps". SeisComP is also used as a real time data exchange server tool.
In order to improve the seismological monitoring of the Northeastern Italy area, at OGS-CRS we tuned existing programs and created ad hoc ones like: a customized web server named PickServer to manually relocate earthquakes, a script for automatic moment tensor determination, scripts for web publishing of earthquake parametric data, waveforms, state of health parameters and shaking maps, noise characterization by means of automatic spectra analysis, and last but not least scripts for email/SMS/fax alerting. The OGS-CRS Real Time Seismological website (RTS, http://rts.crs.inogs.it/) operative since several years was initially developed in the framework of the Italian DPC-INGV S3 Project: the RTS website shows classic earthquake locations parametric data plus ShakeMap and moment tensor information.
At OGS-CRS we also spent a considerable amount of efforts in improving the long-period performances of broadband seismic stations, either by carrying out full re-installations and/or applying thermal insulations to the seismometers: more examples of PSD plots of the PRED broad band seismic station installation in the cave tunnel of Cave del Predil using a Quanterra Q330HR high resolution digitizer and a Sterckeisen STS-2 broadband seismometer will be illustrated. Efforts in strengthening the reliability of data links, exploring the use of redundant satellite/radio/GPRS links will also be shown.