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MED-SUV Final Meeting

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ROME 6 | 7 APRIL 2016

Editors: Giuseppe Puglisi, Letizia Spampinato, Danilo Reitano





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Seismic data of Mt. Etna: the contribution of in situ data to MED-SUV Project

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In the context of main objectives of the MED-SUV Projects “Work Package 3”, one goal of the sub-task 3.2.4 is to provide already available in situ seismic data concerning Mt. Etna volcano. In particular, this sub-task envisages sharing data detected during the period 2005-2011. Three kinds of seismic data have been selected for sharing with MED-SUV users: i) raw continuous signals from broadband digital stations; ii) an earthquake catalogue, concerning local shocks hypocentres calculated by expert personnel at Osservatorio Etneo (INGV-OE) by means of off-line analysis of digital seismograms; iii) the RMS amplitude value of the continuous seismic signal. Regarding the first data type, starting from the original SUDS format seismic records (each 1-min long), stored as compressed files in the INGV-OE repository, we produced files, each 1-h long, in standard SAC format. Several working phases were performed to achieve the objective: copying data from the original repository to a temporary storage, decompressing data files, extracting the records of selected seismic stations, converting data from SUDS to SAC format, and finally moving the obtained SAC files in the MED-SUV repository. Overall, about 3.5E6 SUDS files were processed, obtaining about 2E6 SAC files, that overall amount to about 2.6 TB. If needed, raw continuous signals for sharing can also be provided in standard miniSEED format. The earthquake catalogue reports parametric information (e.g. latitude, longitude, depth, magnitude) on the hypocentres of ca. 800 earthquakes. This catalogue refers to shocks with magnitude greater than or equal to 2.0 and error threshold not greater than particular values (e.g. horizontal and vertical hypocentral errors less than or equal to 2.0 km, RMS travel-time residual less than or equal to 0.35s, etc.). These data are provided in ASCII format. Finally, RMS amplitude values of the continuous seismic signal have been calculated by an automatic tool, processing the on-line seismic signal received from remote stations. Amplitude data are calculated over 10s long time windows, in frequency bands, 1 Hz wide, between 0.5 and 15 Hz, as well as in the unfiltered continuous signal. Data format is ASCII. Appropriate metadata (such as technical specifications, geographical coordinates of sites, etc.) have also been defined for the three data types, enabling users to perform analysis and characterization of data. All data and metadata are shared with subscriber users in the MED-SUV Project portal.