



## The INGV Real Time Strong Motion Database

Marco Massa (1), Ezio D'Alema (1), Claudia Mascandola (1), Sara Lovati (1), Davide Scafidi (2), Antonio Gomez (1), Simona Carannante (1), Gianlorenzo Franceschina (1), Santi Mirena (1), and Paolo Augliera (1)

(1) Istituto Nazionale di Geofisica e Vulcanologia, sezione Milano, via Alfonso Corti 12, 20133 Milano (Italy) (marco.massa@ingv.it), (2) Università degli studi di Genova (DISTAV), Corso Europa 26, 16132 Genova (Italy)

The INGV real time strong motion data sharing is assured by the INGV Strong Motion Database. ISMD (<http://ismd.mi.ingv.it>) was designed in the last months of 2011 in cooperation among different INGV departments, with the aim to organize the distribution of the INGV strong-motion data using standard procedures for data acquisition and processing. The first version of the web portal was published soon after the occurrence of the 2012 Emilia (Northern Italy), Mw 6.1, seismic sequence. At that time ISMD was the first European real time web portal devoted to the engineering seismology community. After four years of successful operation, the thousands of accelerometric waveforms collected in the archive need necessary a technological improvement of the system in order to better organize the new data archiving and to make more efficient the answer to the user requests.

ISMD 2.0 was based on PostgreSQL ([www.postgresql.org](http://www.postgresql.org)), an open source object-relational database. The main purpose of the web portal is to distribute few minutes after the origin time the accelerometric waveforms and related metadata of the Italian earthquakes with  $ML \geq 3.0$ . Data are provided both in raw SAC (counts) and automatically corrected ASCII (gal) formats. The web portal also provides, for each event, a detailed description of the ground motion parameters (i.e. Peak Ground Acceleration, Velocity and Displacement, Arias and Housner Intensities) data converted in velocity and displacement, response spectra up to 10.0 s and general maps concerning the recent and the historical seismicity of the area together with information about its seismic hazard. The focal parameters of the events are provided by the INGV National Earthquake Center (CNT, <http://cnt.rm.ingv.it>). Moreover, the database provides a detailed site characterization section for each strong motion station, based on geological, geomorphological and geophysical information. At present (i.e. January 2017), ISMD includes 987 (121.185 waveforms) Italian earthquakes with  $ML \geq 3.0$ , recorded since the 1st January 2012, besides 204 accelerometric stations belonging to the INGV strong motion network and regional partner.