ESM DATABASE
ENGINEERING STRONG MOTION DATABASE
2.0

July 2025: New network codes for INGV temporary networks

The network codes for certain data have been updated following decisions made by the network operator (INGV). Specifically, data from several temporary stations previously assigned to the IV network have been reassigned to new network codes. The updated network codes are as follows:

- T12* stations moved to 8P (except for T1299);
- T1011-T1012 stations moved to 9K;
- T08* stations moved to 5G;
- T07* stations moved to 9N;
- T0401-T0402 stations moved to 3H;
- T05* stations moved to 2J;
- T01** and RM* stations moved to 8H (except for RM33);
- T020* stations moved to 5H;
- RE01 to RE08 stations moved to 2D.

The database has been updated accordingly, based on the operational periods of each network as defined by the FDSN.

May 2025: New seismic site characterisations

For the SL network (*Seismic Network of the Republic of Slovenia*), velocity profiles for 9 recording stations (DOBS, GOLS, GORS, GROS, KOGS, LEPN, PDKS, PERS, and ZAVS), including shear-wave (Vs) and compressional-wave (Vp) data, along with 20 geological maps (ADOM, BOJS, CADS, CEY, CRES, CRNS, DRZN, GBAS, GBRS, GCIS, JAVS, KNDS, LJU, MOZS, ROBS, SKDS, TRNT, VISS, VNDS, and VOJS) have been uploaded.

June 2023: The geometry fault schema has been changed

Is now available the possibility to have a multi-segment fault geometry. Each segment is described by the following parameters: coordinates of the corners, strike, dip, depths, and corresponding references. The source-to-site distances (Joyner and Boore, hanging-wall and foot-wall, and rupture distances) are computed as the minimum distance between the site and the segments.

June 2021: The Engineering Strong Motion database has been updated

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In ESM is now available a new tool called REXELweb for the automatic selection of accelerograms from the database via an online graphical user interface. REXELweb provides spectrum-compatible combinations of 1-, 2- or 3-component ground motion records, compatible - on average - with a target spectrum, for dynamic analysis of structures in engineering and geotechnical fields. The tool encompasses previous versions (i.e. the Mathworks-Matlab® ESM_REXELweb v1.0 and REXELite, both provided in the framework of ESM utilities) thanks to additional features and the availability of uniformly processed and high-quality waveforms.

July 2020: The new Engineering Strong Motion database has been released

The new release of the Engineering Strong Motion (ESM) database has been released. ESM is developed and maintained by the database WG of INGV-Milan under the general coordination of the ORFEUS strong-motion management committee, with the support of EPOS, SERA and NERA projects. ESM has been enriched with new and more accurate information available through a renewed website. In addition, new tools have been introduced for data consultation, selection and processing. The performance of the web-site has been also improved so that the Users can faster explore and access ESM Data and Services compared to the previous version.