

Fifteen years of loyal service to the seismic hazard community: the Database of Individual Seismogenic Sources, data and architecture

Umberto Fracassi, Roberto Basili, Pierfrancesco Burrato, Vanja Kastelic, Francesco Emanuele Maesano, Mara Monica Tiberti, Gabriele Tarabusi, Gianluca Valensise, and Paola Vannoli

Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy

In July 2001 the first public version of the Database of Individual Seismogenic Sources (DISS) was released by the DISS Working Group. The Database was initially released as a limited edition in print and on CD-ROM, but in the following few years it was fully migrated to the Internet.

Over the past 15 years the Database has continuously grown in breadth and depth, delivering an ever updated view of seismogenic faulting in the Italian territory and its surroundings.

Currently the core objects of DISS are:

- the Individual Seismogenic Source, a simplified and 3D representation of a rectangular fault plane. It is assumed to exhibit "characteristic" behaviour with respect to rupture length/width and expected magnitude;
- the Composite Seismogenic Source, a simplified and 3D representation of a crustal fault containing an unspecified number of seismogenic sources that cannot be singled out. It is not associated with a specific set of earthquakes or earthquake distribution;
- the Debated Seismogenic Source, a fault that has been proposed in the literature as a potential seismogenic source but was not considered reliable enough, or its parameters could not be constrained in order for it to be included in any of the other categories;
- the Subduction Zone, a simplified and three-dimensional representation of the complex subduction system, mainly identified by the depth contours of the subducted slab. It is not associated with a specific set of earthquakes or earthquake distribution.

At the time of writing the current version is #3.2.0, released in June 2015. It contains 126 Individual Seismogenic Sources, 167 Composite Seismogenic Sources, 35 Debated Seismogenic Sources, and three subductions. Notice that individual and composite seismogenic sources are two alternative models of crustal seismogenic faulting.

Each record in the Database is backed by a Commentary, a selection of Pictures, and a list of References, as well as fault scarp or fold axis data when available.

The Database can be accessed through an alphanumeric user interface or a map viewer in your web browser. Alternatively, users can download the main database files to display and navigate their content from within their own desktop GIS.

Depending on the version, DISS data are available in various GIS formats for seamless download. Most popular file formats currently available for download are MapInfo Interchange (mid/mif), ESRI Shape (shp) and Google Earth (KML), but customized formats can be provided on demand.

DISS presently contains information on seismogenic faulting in the Italian territory and its surrounding regions and seas, but it is suitable to include data from anywhere.