

## Changelog

### Version 3.5 beta:

- SIMBAD database was updated to v3.0.

### Version 3.4 beta:

- For Italian sites, it is now possible to select spectrum-compatible records based on disaggregation of seismic hazard for 0.5 sec and 1.5 sec spectral acceleration;
- For Italian sites, it is now possible to select spectrum-compatible records according not only to design spectrum, but also according to conditional hazard for PGV and a spectral shape proxy intensity measure, Np. It is recommended to refer to REXEL references for details.
- REXEL is now released under a Creative Commons license.

### Version 3.3 beta:

- It is now possible to define target spectra according to ASCE SEI 7/10 (2010);
- For Italian sites, it is now possible to also obtain disaggregation information in terms of 'epsilon' for PGA and 1 sec spectral acceleration on rock;
- It is now possible to select records according to 'epsilon' along magnitude and source-to-site distance;
- SIMBAD database was updated to v2.0 and about 80 records were added.

### Version 3.2 beta:

- It is now possible to select records from the SIMBAD database, which contains high-magnitude small-distance carefully processed records from international earthquakes including Japanese and US events.

### Version 3.1 beta:

- It is now possible to select sets of 30 spectrum-compatible records featuring one or two horizontal components of ground motion.

### Version 3.0 beta:

- It is now possible to select spectrum-compatible records based on ground motion intensity measures (PGA, PGV,  $I_A$ ,  $I_D$  – Cosenza and Manfredi index), besides magnitude and distance;
- For Italian sites, it is now possible to select spectrum-compatible records based on disaggregation of seismic hazard for PGA and 1 sec spectral acceleration;
- For Italian sites, it is now possible to select spectrum-compatible records according not only to design spectrum, but also according to conditional hazard for earthquake's cumulative damage potential expressed in terms of Cosenza and Manfredi index;
- It is now possible to search for a single spectrum-compatible record;
- ITACA records for earthquakes occurred in the 2005-2007 period have been added to the database.

### Version 2.61 beta:

- A revised and updated version of the ITACA database, including records with magnitude larger than 4, is now included in REXEL.

### Version 2.6 beta:

- It is now possible to check the displacement spectra compatibility for a combination selected to match an acceleration spectrum, this option is available from the 'output' menu;
- A revised and updated version of the ITACA database, including records with magnitude larger than 5, is now included in REXEL.

### Version 2.5 beta:

- It is now possible to select records from "any site class" for a given target spectrum. This should help to overcome some of the problems when for specific site conditions it is hard to find spectrum matching sets;
- It is possible to exclude, and repeat the search in the same conditions, an undesired record appearing in the results of a search;
- Eurocode Type 2 spectrum has been added (to be used in case of a design earthquake with surface wave magnitude lower or equal to 5.5);
- It is possible to perform a new search without having to re-enter the parameters defining the spectrum;
- It is possible to visualize on the target spectrum the tolerances and the compatibility period range selected;
- Spectra of the found combinations are now returned in the results along with the waveforms;
- A file summarizing the selection criteria is now returned with the results of a search;
- The tutorial has been expanded with many examples and possible selection strategies.

### Version 2.4 beta:

- The Italian accelerometric database (ITACA, <http://itaca.mi.ingv.it>) has been included in REXEL (last accessed Feb 2009, 3 x 591 records from events with magnitude larger than 4); the ITACA stations soil classification (according to Eurocode 8) refers to the results of the S4 project (<http://esse4.mi.ingv.it>) task 2 "Catalogazione geologico-geotecnica dei siti di ITACA"; the classification is based on 1:100000 geological map, except for those stations where  $V_{s,30}$  was available; classification maybe updated in the future;
- Faster and more reliable installation procedure.

### Version 2.31 beta:

- Now the software allows to preliminarily visualize the spectra corresponding to the chosen magnitude and distance bins before the search and to compare them to the reference spectrum;
- Now it is possible to repeat the vertical search without having to repeat the corresponding horizontal search.

**Version 2.3 beta:**

- **Now the software allows also to search for records on site classes D and E according to EC8 classification.**