
What is new?

Site characterization

The main updates of the **ITACA3.1** database concern the recording site characterizations carried out in the framework of the Agreement DPC-INGV (2019-2021), Annex B2:

- Update of the topographic classification of the recording stations archived in ITACA on the base of the Italian building code (NTC2018);
- 366 geological and lithological maps related to 183 recording stations belonging to the network IT;
- The results of the site characterization related to 10 stations belonging to the RAN and the RSN (IT.PAR, IT.SSU, IT.CSP, IT.TVL, IT.SULA, IT.PGN, IV.NEVI, IV.LNSS, IV.TRTR, IV.INTR): i) 10 geological maps, 10 lithotecnic maps and 4 lithologic maps, 9 S-waves velocity profiles, iii) 10 reports on geophysical and geological surveys, iv) 20 photos of the recording sites; v) 6 ambient noise measurements;
- 9 S-waves velocity profiles (IT.CNO, IT.PAN, IT.NRN, IT.MNF, IV.GUMA, IV.ATLO, IV.ATCC, IV.ATVO, IV.SACS) provided in the framework of the SIGMA2 project (Seismic Ground Motion Assessment project SIGMA-2 (<https://www.sigma-2.net/>));
- 9 ambient noise measurements, 134 S-phase HVSR (Horizontal-to-Vertical Spectral Ratio), 123 coda HVSR, 220 HVRS, computed on acceleration response spectra (5% damping) of records archived in ITACA;
- Updating metadata related to the installation type (housing, installation date) for about 50 recording sites.

Previous versions

A static archive of the previous versions of the ITACA database (v2.x) enables the Users only to access and download the correspondent data (waveforms and response spectra) and metadata without query the database. The former ITACA datasets are still maintained only for historical and reference purposes. Each version of ITACA is periodically revised by specialists to detect errors and inconsistencies, improving data and metadata quality. Therefore, it is recommended to use the latest version of ITACA (v3.1) which includes up to date information and provides a user-friendly interface to query the database for data and metadata access.

Webservices

ITACA3.1 provides machine-friendly access to data and metadata in the **Developed by team Quality S.r.l. for INGV**

database through Web Services (WSs). The specifications, the supported options, and some usage examples of each WS can be found at the Web services page.

The User may have access to **ITACA3.1** WSs as *Registered User* getting an *Access Token* (<http://itaca.mi.ingv.it/itaca31ws/generate-signed-message/1/>).

Tools

ITACA3.1 contains a new tool, **ITACA_REXELweb** v1.0 (Sgobba et al., 2019), which supersedes REXELite. ITACA_REXELweb implements all functionalities and options of REXEL (Iervolino et al., 2010) through web-services that are accessible by means of an executable application developed in MATLAB® environment. REXELite is available at this link (https://esm.mi.ingv.it/DYNA-stage/CadmoDriver?_action_do_menu=1&_page=REX_rexel_homepage&_rock=INVALID&_state=find&_tabber=5&_token=NULLNULLNULLNULL), connected to the Engineering Strong Motion database (ESM v1.0 (<https://esm.mi.ingv.it>)).

Products

A parametric table (*flat-file*) with metadata and intensity measures of accelerometric records contained in **ITACA3.1** can be downloaded from the *waveforms* (http://itaca.mi.ingv.it/ItacaNet_31/#/waveform/search) page. The User can customize the ITACA flat-file by using the key-fields of the waveforms search. The flat-file is distributed as TXT file; the complete list of the flat-file fields is available in the related *User manual*.

Bibliography

Sgobba, S., Puglia, R., Pacor F., Luzi, L., Russo, E., Felicetta, C., Lanzano, G., D'Amico, M., Baraschino, R., Baltzopoulos, G., Iervolino, I. REXELweb: a tool for selection of ground-motion records from the Engineering Strong Motion database (ESM). 7th International Conference on Earthquake Geotechnical Engineering (ICEGE) 17 - 20 June 2019, Roma, Italy

Iervolino, I., Galasso, C., & Cosenza, E. (2010). REXEL: computer aided record selection for code-based seismic structural analysis. *Bulletin of Earthquake Engineering*, 8(2), 339-362.