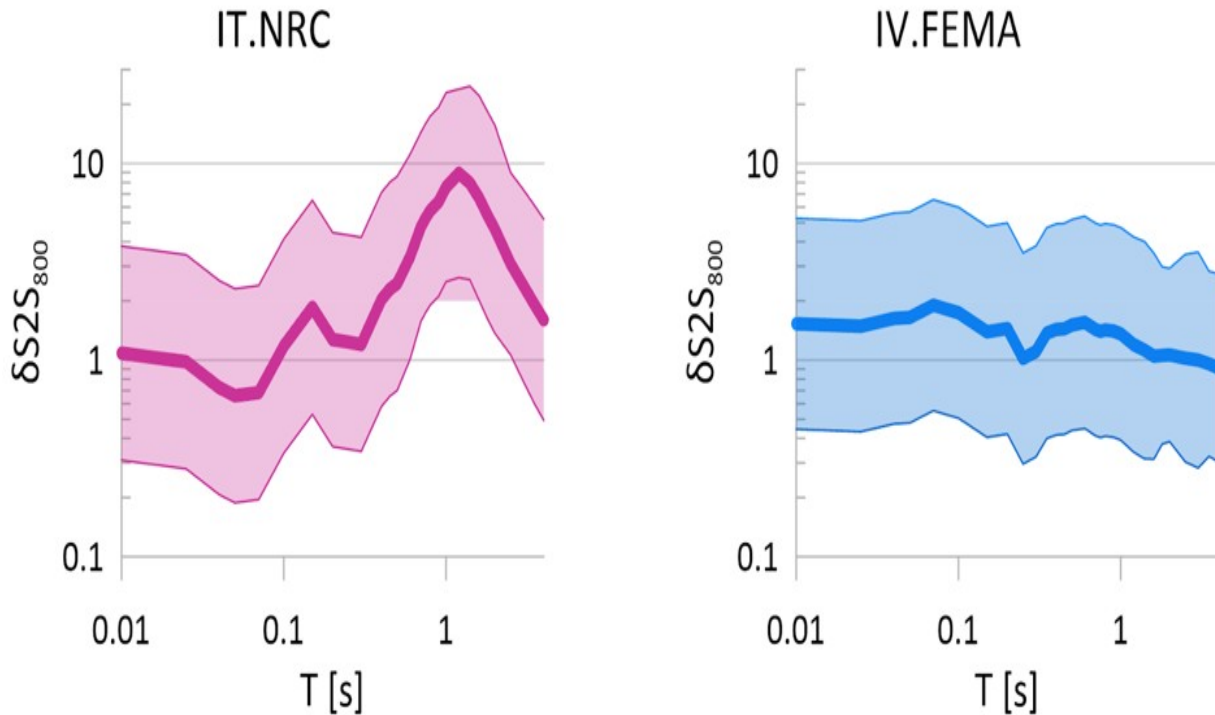# ITACAs2s flatfile: table of site response spectral curves of the Italian recording stations

The **ITACAs2s** flatfile is a parametric table containing the repeatable site terms $\delta S2S$ (Al-Atik et al., 2010) and the associated variabilities, evaluated with respect to the ITA18 ground-motion model (Lanzano et al., 2019) for acceleration spectral ordinates (SA, 5% damping). These terms quantify the systematic deviations between observed ground-motion and predictions at a site. They are estimated in two ways (Lanzano et al. 2020):

- $\delta S2S_{800}$: with respect to generic rock condition of ITA18-SA, i.e., $V_{S,30}$=800m/s;

- $\delta S2S_s$: with respect to the corresponding site condition of the recording station, given by the $V_{S,30}$ value.

The dataset used for this analysis is the ITACAext, composed of the data and metadata included in ITACA up to 2020 December 31st, integrated with some velocimetric waveforms.
The adopted ITA18 model is valid for the median of the horizontal component in the moment-magnitude range Mw [3.5-7.5] and rupture distance interval R [0-200km].

The computation of the site-to-site component is performed by applying the random-effect model (Bates et al., 2015), while the associated variability is evaluated by standard deviation of the aleatory residuals at the site.The flatfile includes 1,922 stations and can be exploited to have an overview of the amplifications and peculiar features of the Italian recording stations.

The zip file contains three parametric tables (*dS2S_800_SA.csv*; *dS2S_800_SA.csv*; *phi0_SA.csv*) in CSV format (semicolon separated) relative to the site residuals and variability. Each file contains the network code, the station code, the number of records used in the analysis, the preferred $V_{S,30}$

value and 36 residual values in natural-log unit, in the period range [0.01-10]s. Other information on the recording stations can be found on the ITACAext flatfile using the *network_code.station_code* field as identifier.

The **ITACAs2s** flatfile has been developed in the framework of the INGV-DPC Agreement (2012-2021) – Annex A and Annex B2.

md5 checksum: 9636e660b1e1ee353ed420cdc95072af

Citation

The **ITACAs2s** flatfile must be acknowledged as: : Lanzano G., Brunelli G., D'Amico M.C., Felicetta C., Luzi L., Mascandola C., Pacor F., Russo E., Sgobba S. (2022). ITACAs2s flatfile [Data set]. Istituto Nazionale di Geofisica e Vulcanologia (INGV). DOI: 10.13127/itaca32/itacas2s_flatfile.1.0

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Licence

Disclaimer

The current **ITACAs2s** flatfile has been extracted on January 27th, 2021. Although all the parameters have been checked by analysts, no warranty, implicit or explicit is attached to the data. Every risk due to the improper use of data or the use of inaccurate information is

assumed by the user. Network owners should be acknowledged according to the *International Federation of Digital Seismograph Networks (FDSN)*

Feedback

You can leave feedbacks writing to itaca@ingv.it. Thank You!