

Hai Sentito Il Terremoto (HSIT) - Macro seismic intensity database 2007-2024, version 3,
doi:[10.13127/HSIT/I.3](https://doi.org/10.13127/HSIT/I.3)

Macro seismic Intensities_2007-2024_HSIT_I.3.csv

File description

This database contains **macro seismic intensities** for Italian municipalities, derived from questionnaires collected by the "**Hai Sentito Il Terremoto**" (HSIT) system (<https://doi.org/10.13127/HSIT>) for earthquakes that occurred between June 15, 2007, and December 31, 2024 (Table 1).

Intensities were automatically estimated using the method described in Tosi P., Sbarra P., De Rubeis V., and Ferrari C. (2015), "Macro seismic intensity assessment method for web-questionnaires," Seismological Research Letters, 86, 985-990, [doi: 10.1785/0220140229](https://doi.org/10.1785/0220140229).

Important Note: These intensity values are based on voluntarily submitted reports and have not been reviewed by scientists. Therefore, the database may contain errors, potentially due to users incorrectly selecting an earthquake during submission, especially for events immediately following or preceding a major earthquake.

Municipal data (columns 5-8) were sourced from the National Institute of Statistics (ISTAT 2011). Earthquake parameters (columns 9-15) were obtained from the ISIDe Working Group (2007), Italian Seismological Instrumental and Parametric Database (ISIDe) <https://doi.org/10.13127/ISIDE>.

The database, created by the Istituto Nazionale di Geofisica e Vulcanologia, is licensed under a Creative Commons Attribution 4.0 International License. **Please cite as: Tosi, P., De Rubeis, V., Sbarra, P., and Sorrentino, D. (2025). Hai Sentito Il Terremoto (HSIT) - Macro seismic intensity database 2007-2024, version 3, <https://doi.org/10.13127/HSIT/I.3>.**

Differences from Version 2 (Macro seismic Intensities_2007-2021_HSIT_I.2.csv): In addition to including data for 2022-2024, some intensities for previous earthquakes have been slightly modified in this version due to:

- The addition of new questionnaires.
- The deletion or reassignment of questionnaires incorrectly attributed to other earthquakes.
- Minor changes in the processing method, including adjustments to the reference intervals for the percentage of people who felt the earthquake (Table 2) and the correction factor for not-felt reports quantity ([Sbarra et al., 2024](https://doi.org/10.1785/0220240001)).

Table 1. Column number and field explanation of the file.

Column number	Field Name	Field Explanation
1	IntensityMCS*	macro seismic intensity in Mercalli-Cancani-Sieberg scale
2	QuestsNumberMCS	number of questionnaires used for municipality MCS intensity estimation
3	IntensityEMS*	macro seismic intensity in European Macro seismic Scale EMS-98
4	QuestsNumberEMS	number of questionnaires used for municipality EMS intensity estimation

5	MunicipalityName	municipality in which the intensity is estimated (ISTAT 2011)
6	MunicipalityIstatCode	municipality ISTAT identifier (ISTAT 2011)
7	MunicipalityLatitude	latitude N WGS84 of the municipal office (ISTAT 2011)
8	MunicipalityLongitude	longitude E WGS84 of the municipal office (ISTAT 2011)
9	EventID	Italian Seismological Instrumental and Parametric Database ISIDe earthquake identifier
10	PreferredMagnitudeType	best quality earthquake magnitude type (ISIDe)
11	PreferredMagnitudeValue	best quality earthquake magnitude value (ISIDe)
12	EventDepth	earthquake hypocentral depth in km (ISIDe)
13	EventUTCDateTime	earthquake occurrence date and time UTC in ISO 8601 YYYY-MM-DD hh:mm:ss (ISIDe)
14	EventLatitude	latitude N WGS84 of the earthquake epicenter (ISIDe)
15	EventLongitude	longitude E WGS84 of the earthquake epicenter (ISIDe)

* The value -9 in columns 1 and 3 indicates that there are not valid questionnaires for the correspondent macroseismic scale (QuestsNumber=0) or that the intensity value, estimated with only 1 or 2 valid questionnaires, was discarded because of excessive discrepancy with the attenuation law (Tosi et al., 2015).

Table 2. Intervals of the percentage of people who felt the earthquake for estimating the intensity

EMS Felt percentage	min max	0.00 0.09	0.10 0.99	1.00 14.99	15.00 54.99	55.00 87.49	87.50 100.00
MCS Felt percentage	min max	0.00 0.09	0.10 12.49	12.50 37.49	37.50 62.49	62.50 87.49	87.50 100.00
Intensity estimated from felt/not-felt		I	II	III	IV	V	VI