

Reviewer #1

The manuscript presents a high-quality seismological dataset acquired within the DETECT experiment in the Irpinia fault system. The availability of dense seismic observations across an active fault zone provides a valuable resource for investigating earthquake source processes, microseismicity, fault-zone structure, machine learning applications, and high-resolution seismic monitoring. The dataset is particularly relevant given the tectonic complexity and significant seismic hazard of the Irpinia region, as highlighted by the occurrence of the 1980 Mw 6.9 earthquake. The efforts made by the authors to ensure that the dataset is FAIR-compliant and accessible through standard services are highly appreciated.

The paper is well written, clearly structured, and the topic is fully aligned with the aims and scope of the journal. Overall, the paper is suitable for publication after addressing a few minor points and providing some additional information:

We thank the Reviewer for the positive feedback and suggestions.

- While the data availability is adequately described, the quality-control methodology would benefit from further details, especially regarding gap detection procedures, timing accuracy assessment, and the criteria used to identify and handle problematic stations or time periods.

Quality control was carried out using Orfeus's wfcatalog web service, as indicated in the 'Data availability' section, where the full query is provided. For an explanation of wfcatalog, see: <https://www.orfeus-eu.org/data/eida/webservices/wfcatalog/>. The metrics are defined in Appendix I of Trani et. al (2016), https://www.orfeus-eu.org/documents/WFCatalog_Specification-v0.22.pdf. The references have been added to the manuscript in the Data availability section.

- Furthermore, some of the provided links should be verified, as they are currently not accessible (e.g., the links reported in Table 1).

We have checked the links, including those reported in Table 1, and they are now accessible.

Reviewer #2

The paper presents and makes available to the scientific community a rich dataset of seismological data for a very dangerous seismic area in Italy. Although the observation period is shorter than in similar large-array experiments and the earthquake magnitudes are rather low (maximum magnitude 3.1, with no significant seismic sequences), it provides the opportunity to follow in detail the intra-annual evolution of seismicity and to perform geophysical studies (e.g., seismic tomography) using both earthquake and noise recordings.

We sincerely thank Reviewer #2 for the careful evaluation of our manuscript and suggestions.

In addition, the organizational and design aspects of the survey are very important: site selection, coordination with local authorities and the population for authorizations and support in maintenance, data organization, and the rapid development of a seismic catalog with automatic methods are all critical issues. The approach adopted here can be used in similar future experiments. I suggest accepting the paper after minor changes.

From a seismological point of view, there are some issues that require consideration and possible correction:

- **line 37: even taking into account the 1930 Irpinia earthquake (Mw 6.7 according to the CPTI15 catalog), the 1980 Irpinia earthquake (Mw 6.8; see a specific comment below) is the strongest Italian earthquake of the last century, not just the last fifty years;**

We thank the reviewer for this comment. We corrected the mentioned time window in the manuscript.

- **line 47: the 1930 Irpinia earthquake is missing;**

We included the 1930 Mw 6.7 Irpinia earthquake in the list.

- **lines 46–48: the Mw magnitude of some earthquakes differs slightly from that reported in CPTI15 (e.g., Basilicata 1857, Messina 1908, Fucino 1915, and Norcia 2016). Please check;**

We aligned the reported Mw in the manuscript to those reported in the CPTI15.

- **line 47: here and later on, the reported magnitude of the 1980 Irpinia earthquake is Ms 6.9, whereas CPTI15 reports Mw 6.8. I suggest using the CPTI15 value for consistency (or citing the different catalog you used);**

We modified the 1980 Irpinia earthquake from Ms to Mw, reporting the value reported in the CPTI (Mw 6.8). Consistently, we refer to this magnitude throughout the manuscript.

- **line 48: references for the CPTI15 catalog. According to the CPTI website, the following citation should also be added:**

Rovida A., Locati M., Camassi R., Lolli B., Gasperini P., Antonucci A. (2022). Catalogo Parametrico dei Terremoti Italiani (CPTI15), versione 4.0 [Data set]. Istituto Nazionale di Geofisica e Vulcanologia (INGV). <https://doi.org/10.13127/cpti/cpti15.4>

We added the suggested reference to the manuscript.

- **line 157: the theoretical battery life estimated from the power consumption of your devices is of interest (I suppose you used this value to plan the deployment and maintenance of the network described below);**

The expected battery life depends on several factors, such as the condition of the battery at the time of purchase and environmental conditions such as humidity and temperature. As the average expected lifespan was around six months, the batteries were replaced halfway through the experiment (<https://www.gfz.de/en/section/geophysical-imaging/infrastructure/geophysical-instrument-pool-potsdam-gipp/pool-components/powercalculation/cube-power>). We specified this point in the manuscript.

- **line 200: the webpage is not reachable;**

We checked the link and it is accessible.

- **lines 202–203: “The 1 Hz sensors clearly resolve the second microseismic peak” is rather cryptic. Please rewrite it for non-experts;**

We rephrased the sentence as: “The 1 Hz sensors clearly resolve the secondary microseismic peak (McNamara and Buland, 2004) which is located around 5 s. Above 10 s, the sensors exhibit increased noise due to instrumental limitations”

- **line 248: please, add the minimum and the maximum magnitude of the catalog;**

We integrated the values in the manuscript.

- **lines 348–350: please rewrite to improve readability;**

We rephrased the sentence as “Furthermore, as the evaluation of source parameters from standard monitoring networks is hindered by the effect of the anelastic attenuation, which filters out the high-frequency source radiation, we believe that the dense, near-fault networks recording at high sampling rates, as tested in DETECT, can help to disentangle source and propagation contributions”.

- **line 365: the supplementary material does not appear to be available on the ESSD revision page.**

The supplementary material was removed from the editorial support during the submission “as it contained regular figures and tables of the main manuscript.”

22 Jun 2026

Uploaded files validated

by Mario Ebel

Notification to the authors:

I removed your supplement .pdf file as it contained regular figures and tables of the main manuscript. Please note that the separate figures files are only needed at a later stage as production files (you will be prompted to upload these files when they are needed). The supplement file should only contain supplementary material that is not part of the main manuscript (if there is any such supplementary material).

I also note some typographical errors:

- **line 45: “countries” instead of “country”;**
- **line 105: “km²” instead of “km2”;**
- **line 266: check and rewrite the DOI;**
- **fom line 277: check the links, some webpages are not reachable;**
- **line 294: I suggest replacing “stationXML format metadata” with “Metadata in stationXML format”.**

We thank the reviewer for highlighting these typos. We corrected them in the manuscript.