



2nd SPB Workshop

23–26 Jan 2023 @Thiessen Wineries, Maastricht, Netherlands

WD1 status and document preparation

L. Naticchioni – INFN

S. Shani-Kadmiel - KNMI

23 January 2023

SPB WD1

Physical Variables & Characterization

WP 1.1 – Seismic noise

Chairs: C. Giunchi & S. Shani-Kadmiel

WP 1.2 – Gravimetry, Geodesy & Geodynamics

Chairs: R. Devoti & R. Hanssen

WP 1.3 – Magnetic noise

Chairs: R. De Rosa & TBD

WP 1.4 – Other environmental noises

Chairs: T. Bulik & S. Shani-Kadmiel

WD1: Expected output

What we expect from the division, in a few words:

- Definition of the **needed physical variables** for the site characterization and for their possible impact on the detector performances (*link with ISB*);
- Definition of **surface and underground** (and/or borehole) accurate **noise measurements**, with procedures and standards;
- **Coordination of the measurements campaigns** at the candidate sites (ongoing and planned) → *interaction with the host teams* to have comparable long/short-term, active/passive measurements;
- Definition of **standard data formats**, repository and (open) **analysis tools**.

WD1: path followed

- Characterization activities at the two sites started before the establishment and start of the SPB: *need to standardize and coordinate the activities ex post*;
- First SPB workshop in Nuoro, Oct. 2021;
- SPB structure and division chairs defined in mid-2022;
- WD1 activities started just few months ago (Q3 2022);
 - WP chairs appointed;
 - Milestones defined;
 - Preparation of ET wiki pages:
 - <https://wiki.et-gw.eu/SPB/WebHome> , <https://wiki.et-gw.eu/SPB/PhysicalVariables>
 - 3 division meetings (kickoff WP1.3 and WP1.4) + dedicated WP meetings;
 - Division meeting timeslot: Wednesday 4pm CET/CEST (antiphase with SPB meeting);
 - Preparation of the output documents related to the division milestone (see next slides).

Division Milestones:

- M1.1: physical variables needed for the site characterization and for the evaluation of their impact on the detector performances; ➤ Q1 2023
- M1.2: measurements recommendations and standards (setup, sensors, procedures, best practices...). ➤ Q1 2023
- M1.3: data format standards and analysis tools. ➤ Q1 2023



Division Deliverables:

- D1.1: quantification of noise sources impacting ET performances. ➤ Q3 2024?

NB: M1.1 and M1.2 are urgent

WD1: Documents

Documents prepared by the WP co-chairs + WD1 chairs. First draft ready after the Christmas break. Code reserved on ET TDS:

ET-0013A-23		SPB-WD1-M1.2 Report: Measurement standards and procedures for the characterization of the ET candidate sites	16/01/23	L. Naticchioni, S. Shani-Kadmiel, C. Giunchi, R. Devoti, R. Hanssen, R. De Rosa, T. Bulik
ET-0012A-23		SPB-WD1-M1.1 Report: Physical variables and measurements required for the characterization of the ET candidate sites	16/01/23	L. Naticchioni, S. Shani-Kadmiel, C. Giunchi, R. Devoti, R. Hanssen, R. De Rosa, T. Bulik

quasi-final version frozen in the last week:

M1.1 document:

https://docs.google.com/document/d/1S0CMMu5S7UILvHU3c_itETOO260qipTV/edit?usp=sharing&oid=116470962385544364948&rtpof=true&sd=true

M1.2 document:

<https://docs.google.com/document/d/1iWP0QXoxXpksKM2y1uuET1DFu1wnB5rO/edit?usp=sharing&oid=116470962385544364948&rtpof=true&sd=true>

WD1: Documents

WD1 - M1.1 Report:

Physical variables and measurements required for the characterization of the ET candidate sites.

- Definition of the physical variables and measurements that must be acquired in order to fully characterize the site that will host the Einstein Telescope (ET).
- Document is divided into four sections reflecting the work package organization of division 1 within the Site Preparation Board.

WD1 - M1.2 Report:

Measurements standards and procedures for the characterization of the ET candidate sites.

- Definition of measurement standards and procedures that must be carried out in the characterization of the Einstein Telescope candidate site.
- Document is divided into four sections reflecting the work package organization of division 1 within the Site Preparation Board.

WD1: Documents

- The output of this workshop should be the final version of these documents, so please have a look and comment.
- We plan to freeze the two documents on Wednesday 25 (afternoon WD1 session).
- At that point, the documents will be uploaded on the ET TDS.
- M1.3 report requires more time. Open issues: formats, data repositories.

WD1: next sessions

- Tuesday 24 morning, 9:00 - 11:10
 - Topics: environmental impact on KAGRA and Virgo, study of local sources of noise at EMR and Sardinia, infrasound studies.
- Wednesday 25 afternoon, 14:00 - 15:00
 - Topics: WPs status, open issues, finalization of M1.1 and M1.2 documents.

See you tomorrow!