DMP of project "Understanding, using and mitigating seafloor seismological noise"

Plan de gestion de données créé à l'aide de DMP OPIDoR, basé sur le modèle "ANR - DMP template (english)" fourni par Agence nationale de la recherche (ANR).

Plan Details

Plan title	DMP of project "Understanding, using and mitigating seafloor seismological noise"
Deliverable	D1.2
Version	First version
Plan purpose/scope	This DMP primarily concerns software developped for the project, as the project will only be generating data in two tasks (4.1 and 5.4).
Fields of science and technology (from OECD classification)	Earth and related environmental sciences, Biological sciences (Natural sciences)
Language	eng
Creation date	2022-10-05
Last modification date	2022-10-12
Identifier type	local identifier
License	Creative Commons Attribution 4.0 International
Associated documents (publications,reports, patents, experimental plan...), website	• Project website : http://www.bruit-fm.org

Project Details

Project title Understanding, using and mitigating seafloor seismological noise

Acronym BRUIT-FM

Abstract We propose to model, separate and use seafloor seismological noise to improve Earth and Environmental science studies. Seafloor seismological noise is generated by a combination of local, regional and global sources including waves, currents, storms, landslides, earthquakes, the polar cryosphere, marine fauna and human activities. We propose a three-pronged approach to quantify and exploit these sources: 1) Modelling of the global seafloor noise “climate”, 2) Separating/removing local sources using advanced signal processing and cutting edge instruments; and 3) Identifying and tracking sources of the seafloor “soundscape”. The project will leverage the growing library of publicly available broadband seafloor seismological data, supplemented by a few embargoed datasets that we have access to in regions of particular interest. An ERC proposal is envisioned based on the results of this study.

Funding

- French National Research Agency : ANR-21-CE01-0031

Start date 2022-02-01

End date 2026-01-31

Partners

- Institut Français de Recherche pour l'Eploitation de la Mer (201122297T)
- iXBlue / Seismic Rotation Sensors ()

Produits de recherche :

1. Seafloor Rotational seismometer experiment (Dataset)
2. SEIS-ADELIE Antarctic seismological data (Dataset)

Contributeurs

Nom	Affiliation	Rôles
Barruol Guilhem		• Personne contact pour les données (SEIS-ADELIE)
Crawford Wayne - https://orcid.org/0000-0002-3260-1826	Institut de Physique du Globe de Paris	• DMP manager • Personne contact pour les données (ROT-SEIS)
CRAWFORD Wayne	Institut de physique du globe de Paris	• Project coordinator

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1. Data description and collection or re-use of existing data

1a. How will new data be collected or produced and/or how will existing data be re-used?

The data will be submitted to the RESIF Marine A-node for storage/distribution on the RESIF data center.

1b. What data (for example the kind, formats, and volumes), will be collected or produced?

Seismological data (miniSEED format) and metadata (StationXML format).

2. Documentation and data quality

2a. What metadata and documentation (for example the methodology of data collection and way of organising data) will accompany the data?

StationXML metadata will be generated as well as provenance information using the obsinfo and SDPchain protocols.

2b. What data quality control measures will be used?

The marine A-node performs automatic and visual (verified by the park manager and the principal scientist) quality control. The latter is performed using the visualQC software

3. Storage and backup during the research process

3a. How will data and metadata be stored and backed up during the research?

Data and metadata will be assembled by the OBS facilities, which have an automatic storage/mirroring system. Once the data are delivered to the RESIF marine A-node, the A-node will store backed up copies of the data and metadata. The A-node will then deliver to the RESIF data-center, which has an industry-standard backup system.

3b. How will data security and protection of sensitive data be taken care during the research

We do not plan to use sensitive data. If we use meta/data from experiments not yet available at international data centers, we will not distribute or

share this meta/data ourselves.

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4. Legal and ethical requirements, code of conduct

4a. If personal data are processed, how will compliance with legislation on personal data and on security be ensured?

No personal data will be processed

4b. How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

We know of no issues of this type for the data.

4c. What ethical issues and codes of conduct are there, and how will they be taken into account?

We know of no ethical issues.

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5. Data sharing and long-term preservation

5a. How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?

Data will be delivered to the RESIF A-node. Once they are on the RESIF data center they will have an embargo period of 3 years, after which they will be openly available. Data on the RESIF data center are open access under a CC-BY international license (currently 4.0)

5b. How will data for preservation be selected, and where data will be preserved long-term (for example a data repository or archive)?

All data will be preserved long-term at the RESIF data center.

5c. What methods or software tools are needed to access and use data?

There are many tools to access and use data, one of the simpler toolsets is the FDSN client of obspy. Once read, obspy can be used to display and process the data

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5d. How will the application of a unique and persistent identifier (such as a Digital Object Identifier (DOI)) to each data set be ensured?

The RESIF data center creates a DOI for each data set. The A-node helps the principal scientist to create datacite information in order to properly

cite people creating the data.

6. Data management responsibilities and resources

Seafloor Rotational seismometer experiment

6a. Who (for example role, position, and institution) will be responsible for data management (i.e. the data steward)?

Wayne Crawford, CNRS research director, IPGP-CNRS

6b. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

Both datasets will use the SDPchain protocols (developped by the RESIF marine A-node) to specify the entire processing chain. The RESIF data center uses the FAIR-compliance FDSN webservice standards and is active in ensuring FAIR meta/data.

SEIS-ADELIE Antarctic seismological data

6a. Who (for example role, position, and institution) will be responsible for data management (i.e. the data steward)?

Guilhem Barruol, CNRS research director, Univ Grenoble Alpes

6b. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

Same response as for ROT-SEIS.