Data Management Plan

NASPMON

Following the Horizon 2020 DMP Template v2.0

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Based on: *Common DSW Knowledge Model, 2.3.0 (dsw:root:2.3.0)*

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Data Management Plan created in Data Stewardship Wizard «ds-wizard.org»

Projects

We will be working on the following projects and for those are the data and work described in this DMP.

Natural Seismicity as a Prospecting and Monitoring tool for geothermal energy extraction

Acronym: *NASPMON*

Start date: *01/2021*

End date: *04/2024*

Funding: *Technology Agency of the Czech Republic, www.tacr.cz/en/ and EEA Grants: TO01000198 (granted)*

Objectives a) to create new knowledge of the physical processes that cause earthquakes with special

emphasis on the role of fluids, geothermal operations and tectonic plate movements; b) apply the

results to develop guidelines for underground operations in seismically active areas; c) test and

develop seismic methods as a prospecting tool in geothermal exploration; d) increase and strengthen

the scientific capacity of research entities in the participating countries. The target area in Iceland

has intensive seismicity due to variety of geodynamic processes and human activities, such as plate

movements in rift segments, volcanos, active hydrothermal areas with production/reinjection. The

results are transformable to other areas with potential geothermal sources and micro-earthquake

activity.

1. Data Summary

Instrument datasets

The following instrument datasets will be acquired in the project:

- **REYKJANET seimic recordings**

  This dataset will be collected by experts in the project, with our own equipment.

  The equipment is very well described and known.

  Other researchers working in the same field of research could be interested in using this data.

Re-used datasets

We will use the following reference datasets:

- **Seismic velocity model for Reykjanes** (https://pubs.geoscienceworld.org/bssa/article-pdf/83/3/696/2707638/BSSA0830030696.pdf)

We will use the following already existing non-reference datasets:

- **REYKJANET seismic recordings**

  We already have a copy of this dataset.

Data formats and types

We will be using the following data formats and types:

- **Standard for the Exchange of Earthquake Data**

  It is a standardized format. This is a suitable format for long-term archiving. We expect to have 7000 GB of data in this format.

2. FAIR Data

2.1. Making data findable, including provisions for metadata

There are the following 'Minimal Metadata About ...' (MIA...) standards for our

experiments:

- [Standard for the Exchange of Earthquake Data](#)
-

We will use an electronic lab notebook to make sure that there is good provenance of the data analysis.

We made a SOP (Standard Operating Procedure) for file naming. We will be keeping the relationships between data clear in the file names. All the metadata in the file names also will be available in the proper metadata.

2.2. Making data openly accessible

We will be working with the philosophy *as open as possible* for our data.

The data cannot become completely open immediately because of:

- we want to publish a paper first

Data that is not legally restrained will be released after a fixed time period, unconditionally.

We have a consortium agreement that arranges Intellectual Property.

For the reference and non-reference data sets that we reuse, conditions are as follows:

- **Seismic velocity model for Reykjanes** – freely available for any use (public domain or CC0).
- **REYKJANET seismic recordings** – available under specific restrictions, which we will follow in our project.

2.3. Making data interoperable

We will be using the following data formats and types:

- **[Standard for the Exchange of Earthquake Data](#)**

    It is a standardized format.

2.4. Increase data re-use (through clarifying licenses)

As explained in Section 2.2, our data cannot become completely open immediately.

We do not plan to be archiving data (using so-called *cold storage*) for long term preservation already during your project.

To validate the integrity of the results, the following will be done:

- We will use independently developed duplicate tools or workflows for critical steps to reduce or eliminate human errors.
- We will run part of the data set repeatedly to catch unexpected changes in results.

3. Allocation of resources

FAIR is a central part of our data management; it is considered at every decision in our data management plan. We use the FAIR data process ourselves to make our use of the data as efficient as possible. Making our data FAIR is therefore not a cost that can be separated from the rest of the project.

None of the used repositories charge for their services.

We have a reserved budget for the time and effort it will take to prepare the data for publication.

Jana Doubravova is responsible for implementing the DMP, and ensuring it is reviewed and revised.

Egill Árni Guðnason is responsible for reviewing, enhancing, cleaning, or standardizing metadata and the associated data submitted for storage, use and maintenance within a data centre or repository.

To execute the DMP, additional specialist expertise is required and we have such trained support staff available.

We do not require any hardware or software in addition to what is usually available in the institute.

4. Data security

Project members will not store data or software on computers in the lab or external hard drives connected to those computers.They will not carry data with them (e.g. on laptops, USB sticks, or other external media). All data centers where project data is stored carry sufficient certifications. All project web services addressed via secure http (https://...). Project members have been instructed about both generic and specific risks to the project.

The risk of information loss in the project or organization is acceptably low. The possible impact to the project or organization if information is leaked is small. The risk of information vandalism in the project or organization is acceptably low.

We are not using any personal information.

5. Ethical aspects

We don't need any consent for collected data because those are not personal.

6. Other issues

We use the [Data Stewardship Wizard](#) with its *Common DSW Knowledge Model* (ID: dsw:root:2.3.0) knowledge model to make our DMP. More specifically, we use the https://researchers.ds-wizard.org DSW instance where the project has direct URL: https://researchers.ds-wizard.org/projects/f837c497-1a04-45f7-9b8e-30eb18767391.