Plan Overview

A Data Management Plan created using DMPonline

Title: Paradigm Shift of Landslide-Tsunami Characterisation and Prediction

Creator: Valentin Heller

Affiliation: University of Nottingham

Template: University of Nottingham generic Data Management Plan

Project abstract:

Tsunamis caused by subaerial landslides (subaerial landslide-tsunamis (SLTs)) reached hundreds of meters in height and resulted in thousands of fatalities. At present, SLT prediction is largely empirical; there is a significant need to establish new ways for their characterisation/prediction. We will identify currently neglected dominant/dangerous wave components in SLTs with a new theoretical method. We will apply this method to available laboratory experiments and real SLT events and develop a physical-based, superior SLT prediction method based on these dominant components. This project could therefore bring about a step change in our ability to predict catastrophic SLTs and other wave phenomena.

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End date: 31-12-2023

Last modified: 23-04-2021

Copyright information:

Paradigm Shift of Landslide-Tsunami Characterisation and Prediction

Data description

What data will you create?

The main output of this work will be a MATLAB code consisting of an implementation of the Korteweg-deVries and Kadomtsev-Petviashvili partial differential equations. The files containing this code will be m-files (.m format) and be accompanied by a brief User Guide in .txt format. All these files will have a size of less than 1 MB.

We will validate this MATLAB code and apply it to available laboratory experimental data from the PI (e.g. from Heller et al., 2019; Heller and Spinneken, 2015) and others in .txt format. This will generate project-specific output data in text (.txt) format with a size of less than 10 MB.

Data collection / generation

What are your methodologies for data collection / generation? How will you ensure data quality? What data standards will you use?

No new data collection will be necessary within this project. We will generate data through the re-analysis of available experimental laboratory data from previous projects of the PI (e.g. Heller et al. (2019) (a HYDRALAB+ funded project) or Heller and Spinneken (2015) (a NERC funded project)) and others in .txt format with a new MATLAB code implemented within this project. This re-analysis of available data with our MATLAB code will create new project-specific data such as wave amplitudes and frequencies of individual (decomposed) wave components. We will ensure the quality of the generated data by comparing them with the corresponding data (e.g. wave profiles) from the available laboratory experiments mentioned above. The content of the generated data will be explained in .txt files.

Data storage and security

Where and how will data will be stored, backed-up, transferred, and secured during the active phase (short to medium term) of research?

We will use UoN-provided storage for our working data. UoN licenses Microsoft OneDrive, an ISO 27001 information security management compliant service that allows secure and controlled sharing of data amongst the research team. The UoN OneDrive encrypts data both in transit and at rest and is approved against the University's Handling Restricted Data Policy. The service provides continual failover support. This service provides up to 5TB free-at-point-of-use, and as we will generate significantly less data than 5TB, we will not require any additional costs for the use of this service.

Data management, documentation, and curation

What are your principles, systems, and major standards for data management and creation? What metadata and documentation will you keep?

A brief User Guide on how to apply our MATLAB code will be made available at the same location as our MATLAB code and complement comments in the MATLAB code itself. Input and output files will all be based in the same directory. Text files will also be written to describe the .txt data generated by re-analysing available experimental data.

Ethics & Privacy

Are there any ethical or privacy related issues associated with your data?

There are no ethical or privacy related issues associated with our data.

Data preservation

How will you ensure the long term storage and preservation of data?

All research data created by the project will be deposited in the UoN research data archive, https://rdmc.nottingham.ac.uk/. This UoN data archive is underpinned by a commercial digital storage which is audited on a twice-yearly basis for compliance with the ISO 27001 standard. UoN will retain and preserve research data in line with The Leverhulme Trust requirement for a minimum of 7 years, but data will be retained for longer periods of time where it is of continual value to users. No cost has been charged to this project for data archiving as we anticipate that the amount of data generated for long-term retention will be significantly lower than 50GB (the capacity provided free by the University). The MATLAB code along with a link to https://rdmc.nottingham.ac.uk/ will also be made available via the PI's personal research website www.drvalentinheller.com.

Data sharing and access

How will the data generated be shared and published?

Our dataset does not contain any personal or commercially sensitive information and thus will be shared via the UoN data archive under a MIT license. There will be no need to update the data past the project period. All published outputs will contain a Data Availability Statement including the DataCite DOI which directs to the relevant data set. Data will be released at the same time as any published

outputs which are underpinned by the data or by 1 year from the end of the project at the latest.

Roles & responsibilities

Who will be responsible for managing data, data security, data quality, and data security both during the award and post-award?

The PI will be responsible for managing all data, data security and data quality both during and post-award. A research fellow will be working on the project and the PI will ensure that this researcher reads and understands the DMP.

Relevant policies

What are the relevant institutional, departmental or study policies on data sharing and data security?

We will ensure that our research aligns with the requirements of the University's Research Data Management Policy, Information Security Policy, Code of Research Conduct and Research Ethics. All third-party commercial data or new data that may be suitable for commercial exploitation will be protected by the University's Intellectual Property policy.

IPR

Who will own the copyright and IPR of any data that you will collect or create? Will you create a licence(s) for its use and reuse? If you are planning to use existing data as part of your research, do any copyright or other restrictions determine its use?

The PI's existing data will be used which he collected while working at Imperial College London and UoN. This data has no copyright and can be used free of charge by the PI and the project team. The data use from others is highly flexible such that we will select data which is accessible for free and has no copyright restrictions.

Budgeting

What are the costs or funding required for capturing, processing, storing, and archiving your data?

The use of the UoN research data archive (https://rdmc.nottingham.ac.uk/) is free of charge for this

project as the data size will be small (approximately 10 MB). Our MATLAB code will also be releases on the PI's personal research website (www.drvalentinheller.com) which will be paid for by the funder for the project duration. The UoN licenses Microsoft OneDrive, which will be used during the project.

Further Help

Would you like your plan to be reviewed by specialists in Libraries?

Saving this plan after checking the "Yes" box will immediately notify Libraries DMP review service, please only do this when you are ready for review.

- Yes

Under "Roles & Responsibilities" I am unsure who is responsible at our organisation/within our consortia for: (i) study-wide data management, (ii) metadata creation, (iii) data security and (iv) quality assurance of data.