FAIR Data Science

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1 Experiment overview

The research question lays in a field of Civil Engineering, precisely in a Hydraulic Processes of Coastal Soft Engineering Solutions.

Data collections allows the researcher to analyze the impact of Managed Realignement on a study side located at Selsey Bill in Chichester, West Sussex, England.

This project look at set of data collected by specific apparatus at the mentioned site, of which the depth of water is measured and stored and then transferred to University of Brighton research unit. The details of data collection can be found in Input Data Folder under Medmerry sub-folder.

Second set of data that is used is obtained from Coastal Channel Observatory Website which is an open access collection of coastal monitoring data. For the purpose of analysis, the tide gauge data was obtained in a period of years 2014-2019.

As a result, the output data contains of processing of data sets mentioned above, in general data was splitted into periods of interest, then accordingly verified and discussed. Main focuses are hydroperiod, tidal conditions and tidal curves change through the years. The resulting graphs helps to understand the impact of events such storms on the study site and to predict the response in the future.

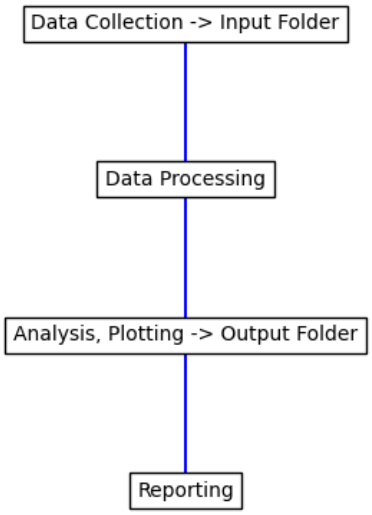

Figure 1: Diagram Explaining the Experiment

2 How the research process aligns with the requirements

2.1 Data Management Plan

As a part of the primary requirement it has been written a document under name of Data Management Plan. For this purpose we used a tool provided by TU Wien - DMP Tool. The result of usage of the tool can be found under name 'IntroRDM - DMPs' on Zenodo platform. The DMP has been build in a way to comply with Science Europe guidelines and hence following FAIR principles which we discuss in the following subsection.

This is s Version 1 of DMP and the updates will be performed through the research if that's required.

2.2 FAIR Principles

One of the aim for valuable DMP is to help understand the researcher what are and how to follow FAIR principles. In order to assess this, ARDC FAIR assessment tools has also been used and the changes such to accessibility and foundability had been made. At this stage we realize, more work need to be put into interoperability and reusability with focus on machine readability. This shall be a focus for the updated and improved versioned of DMP in the future.

3 Additional notes

At this stage the researcher realized, the data description is not sufficiently extensive and that additional work need to be put for example into folders structure for better readability. This changes will be implemented so the reuse of data can be more convenient for future researchers.

Additionally, we realize that data set under folder Medmerry is not sufficiently recognized by specific identifier and that will be addressed by accessing the repository of which data is stored. At now, the data is only accessed from research unit of University of Brighton. That will be done for the purpose of future reuse of the data.

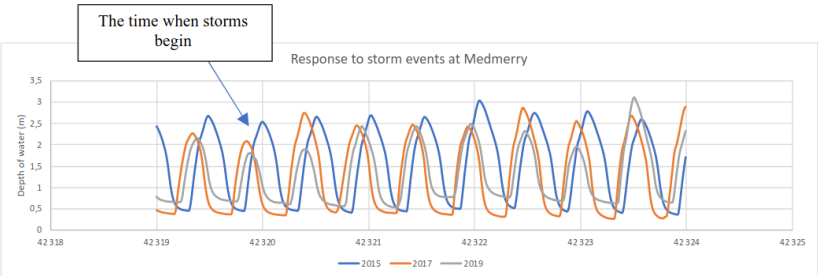

Figure 55 Plot of depth of water corresponding to three different heavy storm events

Figure 2: Example of data analysis

4 Further Explanations to the Experiment

Above can be seen an example of the plot that has been build from analyzed data set in this experiment.