



PASS-SWIO – Portagauge And Satellite Sea Level monitoring System for the South-West Indian Ocean

Data Processing Training 12,18 October 2023

Initial Laptop Preparation Instructions

Introduction

As part of the PASS-SWIO project, we are providing training to DGM staff on processing and validating satellite altimeter and tide-gauge sea level data. To participate in the training, staff will require access to a laptop and an internet connection.

In this document we provide a list of instructions on what software and applications will be needed to be installed on laptops in preparation for the training. Please do this in advance of the training days and contact us if you have any difficulties.

Configuration

We are assuming that DGM staff will have access to laptops with Windows OS installed. Please tell us which version you are using, or which OS if you are not using windows.

An internet connection will be needed.

You can use your browser of choice but be aware not all browsers will display in the same way.

Software

Software and documentation for tide gauge data analysis

We will be using TASK software for the Tide Gauge data analysis. You will need the TASK software installed and used during C-RISe, and the dongle provided by NOC to run the software.

Software for satellite altimeter data processing

For processing satellite altimeter data it will be necessary to install python (3.6), either using miniconda or anaconda. We are using the same set up that was used for the online C-RISe training from December 2020 – January 2021.

Python Environment

To install the necessary python environment, please follow the instructions below:

- Install Anaconda python 3 www.anaconda.com/products/individual
- Open Anaconda-Navigator application
- Select “Environments”
- Select “Create”
- Give it a name, e.g. pass-swio
- Under package select python 3.6 and then click “create”
- On the right is the installed package listing
- Select “Not installed” at the top
- In the “Search Packages” box enter “scipy”
- Check the box to the left of “scipy” and select “Apply”
- Select “Apply” in the “Install Packages” window
- Repeat the last 3 steps for “netcdf4”, “matplotlib”(use these specific named versions)



Python Code

The python routines are available in a zip file (python_code) that can be copied from the training page on the PASS-SWIO website (<https://www.satoc.eu/projects/pass-swio/training.html>).

Please download this file and copy onto your laptop.

The code is written assuming the software is copied to your laptop under the C: Drive, at C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation

If you save software into a different directory, you will have to edit the python code to match.

Data

Please download the training data sets as detailed below.

Tide Gauge data

We have generated an updated Tide Gauge data for the old Toamasina Tide Gauge, which includes data from 01/01/2010 to 30/03/2022.

This is available as a zip file (HA_112_000001_058741_GS_02_TS_Toamasina.t2k.zip) from the training page on the PASS-SWIO website (<https://www.satoc.eu/projects/pass-swio/training.html>).

Please download this file and copy the unzipped file into the directory C:\Shared\Data\TideGauge\C-RISe_TG_Validation\C-RISE_IOCCLMF

Satellite Altimeter data

The satellite altimeter data set to be used are L3 along-track time series sea level products, in netcdf format.

These data are available as a zip file (altimetry_along_track.zip) from the training page on the PASS-SWIO website (<https://www.satoc.eu/projects/pass-swio/training.html>).

Please download this file and copy the unzipped data files into the directory C:\Shared\Data\C-RISe\altimetryByPass

Note that the software assumes that the data files have been copied into a directory named directly under the C: Drive, as follows:

Tide Gauge data - C:\Shared\Data\TideGauge\C-RISe_TG_validation\C-RISE_IOCCLMF

Satellite altimeter data - C:\Shared\Data\C-RISe\altimetry_along_track

If you save the data in a different directory structure, you will have to edit the python code to match.

If you have any questions about the software or access to the other data sets, please send an email to d.cotton@satoc.eu