

## Downloading and pre-processing CMEMS Satellite Altimeter Data

Objectives:

- To be able to download Satellite Altimeter L3 data from CMEMS (Copernicus Marine Environment Monitoring Service.
- To pre-process these data into along track time series of Sea Level Anomalies for use with the validation and analysis code.



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You will need to register for a CMEMS login id

### Goto <a href="https://marine.copernicus.eu">https://marine.copernicus.eu</a>, and REGISTER



Copernicus Ocean State Report 7 Release

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The seventh issue of the Copernicus Ocean State Report and its summary is now available online, coordinated by Mercator Ocean International, the implementing entity of the Copernicus Marine Service. It provides a comprehensive overview on the state, variability and change of the global ocean for scientists, members of the blue economy, decision makers and the public. The latest edition of the Ocean State Report details several unusual patterns across ocean systems, including, among

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## You can search for the L3 data on the web interface

- Click Access Data > Ocean Products
  - Under Main Variables select Sea Surface Height
  - Under Area select Global Ocean •
  - Under Source select Satellite observations •





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i Description Notification

\* Data access

User Manual

Document

Overview Licence

How to cite

10.48670/mc

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- We want Global Ocean Along Track L3 Sea Surface Heights Reprocessed...
- **Don't** click on view product (it doesn't display)
- Click on the download data icon for more information
- Scroll down on the Data Set ID list
- The data sets we want are
  - cmems\_obs-sl\_glo\_phy-ssh\_my\_j3-l3-duacs\_PT1S
  - cmems\_obs-sl\_glo\_phy-ssh\_my\_s3a-l3-duacs\_PT1S
  - cmems obs-sl glo phy-ssh my s3b-l3-duacs PT1S
  - cmems\_obs-sl\_glo\_phy-ssh\_my\_s6a-lr-l3-duacs\_PT1S
- It is possible to download from here, by clicking on browse, but you have to select individual files and it is slow.
- Better to use an ftp application (e.g. filezilla)







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#### Downloading Altimeter Data from CMEMS (4) - Filezilla





- Host is my.cmems-du.eu
- Input your username and password
- On the left select the location where you want to put the data
- On the right select /Core/SEALEVEL\_GLO\_L3\_MY\_008\_062







dcotton@my.cmems	-du.eu - FileZilla Pro
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1 directory	Selected 1 directory.

 Select and open the directory of the source data you want (here my\_s3al3)





#### Downloading Altimeter Data from CMEMS (4) - Filezilla



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	07	Directory	08/03/2022	drwxrwsr	ftp ft
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- Select the year folders on the local and remote sites
- Then drag over the monthly folders





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- Copy the downloaded CMEMS L3 data into the correct directory on the laptop
  - code assumes C:/Shared/Data/SEALEVEL\_GLO\_PHY\_L3\_MY\_008\_062
- Create a directory for the output data
  - C:/Shared/Data/C-RISe/NewFiles







- Open Anaconda-Navigator application
- Select "Environments"
- Choose pass-swio and "Open Terminal"
- Install xarray and dask
- Choose "Open Terminal"
- Change directory to the location of the code
  - > cd C:/ Shared/Software/Windows/SeaLevel/SeaLevelValidation/python\_code







• Python software to subset and pre-process the cmems L3 data into the format needed by the python analysis software

extract\_CMEMS\_L3\_by\_satellite\_and\_year

combine\_trackfiles\_test.py







• Python software to subset and pre-process the cmems L3 data into the format needed by the python analysis software

Run *extract\_CMEMS\_L3\_by\_satellite\_and\_year* 

- > python extract\_CMEMS\_L3\_by\_satellite\_and\_year.py
- > answer questions to select satellite and year
- Generates along-track data files in C:/Shared/Data/C-RISe/NewFiles
- e.g. j1j2j3\_cmems\_P0005\_2022.nc







- Routine to combine the new data with the previous files: *combine\_trackfiles\_test*
  - > python combine\_trackfiles\_test.py
  - > answer questions to select satellite and year
  - Generates new along-track data files in C:/Shared/Data/C-RISe/NewFiles
  - e.g. j1j2j3\_cmems\_P0005\_*upto*\_2022.nc
- These files should then be renamed and replace the old files in C:/Shared/Data/C-RISe/AltimetryByPass
  - Keep the originals in case of any problems!







# Questions ?

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