

Essential Copernicus Marine Data Service (EUMETSAT) links:

- CODA for download of data from last 365 days: <https://coda.eumetsat.int>
- CODAREP (Reprocessed historical data): <https://codarep.eumetsat.int>
- CODA user manual: <https://coda.eumetsat.int/manual/CODA-user-manual.pdf>
- Data centre (for older data):
<https://www.eumetsat.int/website/home/Data/DataDelivery/EUMETSATDataCentre/index.html>
- Batch scripting for CODA download: <https://coda.eumetsat.int/manual/CODA-user-manual.pdf> (page 34)
- Video tutorial for CODA downloads:
https://www.youtube.com/watch?v=l4oeRYj6_5U&list=PLOQg9n6Apif2Qw_gLhwzhJb3XUoAiUkoq&index=2
- Video for OLCI data download and visualisation in SNAP:
https://www.youtube.com/watch?v=V3NAuafvIFM&index=3&list=PLOQg9n6Apif2Qw_gLhwzhJb3XUoAiUkoq
- Video for SLSTR data download and visualisation in SNAP:
https://www.youtube.com/watch?v=IKyUeN3uS0Q&list=PLOQg9n6Apif2Qw_gLhwzhJb3XUoAiUkoq&index=4
- Video for SRAL data download and visualisation in BRAT:
<https://www.youtube.com/watch?v=vucr65nIUfI>
- Video on NETCDF formats: <https://www.youtube.com/watch?v=XqoetylQAIY>
- Sentinel 3 technical documentation:
<https://www.eumetsat.int/website/home/Satellites/FutureSatellites/CopernicusSatellites/CopernicusResources/index.html>
- OLCI handbook:
http://www.eumetsat.int/website/wcm/idc/idcplg?IdcService=GET_FILE&dDocName=PDF_DMT_907205&RevisionSelectionMethod=LatestReleased&Rendition=Web
- SLSTR handbook:
https://www.eumetsat.int/website/wcm/idc/idcplg?IdcService=GET_FILE&dDocName=PDF_DMT_921927&RevisionSelectionMethod=LatestReleased&Rendition=Web
- SRAL handbook:
<https://www.eumetsat.int/website/home/Data/CopernicusServices/Sentinel3Services/Altimetry/index.html>

Useful links for other types of ocean satellite data you may want to use alongside CMDS:

- CMEMS (Level 3 and 4, merged, model products): <http://marine.copernicus.eu/>
- NASA ocean colour (for MODIS and VIIRS, and other historical sensors, plus some in situ data): <https://oceancolor.gsfc.nasa.gov/>
- GHRSSST - centre for the SST community: <https://www.ghrsst.org/>
- AVISO - level 2 to level 4 and higher altimetry products but also information, explanations and news on altimetry: <https://www.aviso.altimetry.fr>
- Ocean colour CCI (similar to product in CMEMS, but portal access here for smaller downloads/analysis): <http://www.oceancolour.org/>

Useful general Python links:

- Beginners (general) python tutorials: <https://wiki.python.org/moin/BeginnersGuide/Programmers>
- Working with marine data: <https://oceanpython.org/>
- For those who work with/wish to work with more GIS based applications, consider GDAL: <https://pcjericks.github.io/py-gdalogr-cookbook/>
- Installing Jupyter notebooks (comes with Anaconda) <http://jupyter.org/install.html>
- Installing netCDF4: type 'conda install -c anaconda netcdf4' in to the command line (if you have used anaconda install)

Useful STEP forum topics/Links to SNAP development:

- Some further SNAP tutorials here:
- <https://www.youtube.com/channel/UCPnL3aynCQxTOjPttxMiS3Q/search?query=SNAP>
- Using SNAPS graph processing tool for batch processing: <https://senbox.atlassian.net/wiki/spaces/SNAP/pages/70503475/Bulk+Processing+with+GPT>
- SNAP github: <https://github.com/senbox-org/snap-engine>
- Using the C2RCC processor in SNAP (applicable to multiple sensors)
 - <https://github.com/bcdev/s3tbx-c2rcc>
- For atmospheric correction that will be available as SNAP plugins in future:
 - <http://www.brockmann-consult.de/c2x/index.php/home/>

BRAT:

- Altimetry processing software, overview and tutorials: <http://www.altimetry.info/toolbox/>
- Altimetry tutorial using BRAT: <https://www.youtube.com/watch?v=vucr65nIUfl>

DEDOP

- DeDop is processing software for SARM altimetry (e.g. that from SRAL) <http://dedop.org/>

Links to other software you may want:

- Panoply - a quick viewer for NetCDF data; enables to see metadata, plot maps, curves, arrows, compare two datasets, animate... <https://www.giss.nasa.gov/tools/panoply/>
- NCview - useful to quickly look at netcdf files and check formats: http://meteora.ucsd.edu/~pierce/ncview_home_page.html
- ESOV - to view satellite overpasses: <https://eop-cfi.esa.int/index.php/applications/esov>
- EO browser - nice quick look visualisation: <https://sentinel-hub.com/explore/eobrowser>

Wider data sources/organisations:

CODA: <https://coda.eumetsat.int/>

CMEMS: <http://marine.copernicus.eu/>

Sentinel 3 Validation Team: <https://www.s3vt.org>

Ocean Colour: <http://www.oceancolour.org/>

NASA: <http://oceancolor.gsfc.nasa.gov/cms/>

GHRSSST: <https://www.ghrsst.org/> (global SST co-ordination group)

MUR: <https://mur.jpl.nasa.gov/> (blended SST)

IOCCG: <http://ioccg.org/> (global OC co-ordination group)

OSTST (Ocean Surface Topography Science Team -- team discussing on everything linked to altimetry): <https://www.aviso.altimetry.fr/en/user-corner/science-teams/ostst-swt-science-team.html>

<https://sealevel.jpl.nasa.gov/science/ostscienceteam/>

Interesting coastal altimetry projects: Pistach, CoastALT, ALES

ESA Sentinel-2: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-2>

USGS Landsat8: <https://earthexplorer.usgs.gov/>

ESA Sentinel-1: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1>

KNMI: <http://climexp.knmi.nl/start.cgi?someone@somewhere>

Other processing tools to note:

Polymer - python code for atmospheric correction - can be used on data from multiple sensors: <https://www.hygeos.com/polymer>

ACOLITE - for ocean processing of Sentinel 2 and Landsat 8 - includes Chl and TSM estimation: <https://odnature.naturalsciences.be/remsem/software-and-data/acolite>

RADS: Radar Altimeter Database system - <http://rads.tudelft.nl/rads/rads.shtml>,
<https://github.com/remkos/rads>

Other collections of satellite data resources:

Awesome Sentinel: <http://krstn.eu/awesome-Sentinel/>

Useful reading:

<http://www.oceanopticsbook.info/view/introduction/overview>