

COPERNICUS EARTH OBSERVATION

DATA VISUALISATION WORKSHOP SERIES



PROGRAMME OF THE
EUROPEAN UNION



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Oceans and Sea Ice

Practical Examples: Tools and approaches for visualising Copernicus ocean data

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Marine EO scientist and EUMETSAT Copernicus Marine Training Service manager

- Part 1: Quick viewing and sharing ocean variables with **EUMETView**
- Part 2: Contextualising WMS layers with **QGIS**
- Part 3: Refined image processing with **SNAP**
- Part 4: Visualisation customisation with **Python**

 No
code Opt.
code Opt.
code All
code!

Part 1: Quick viewing and sharing ocean variables with **EUMETView**

No
code

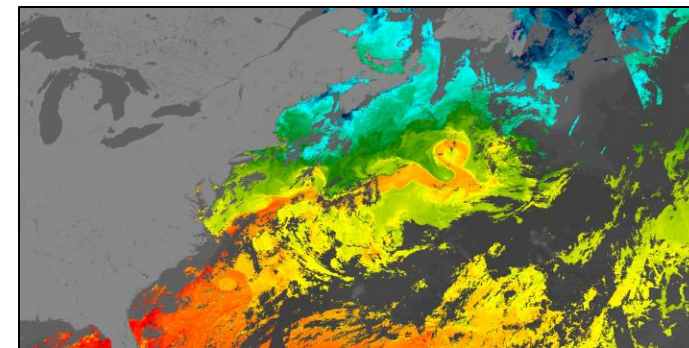
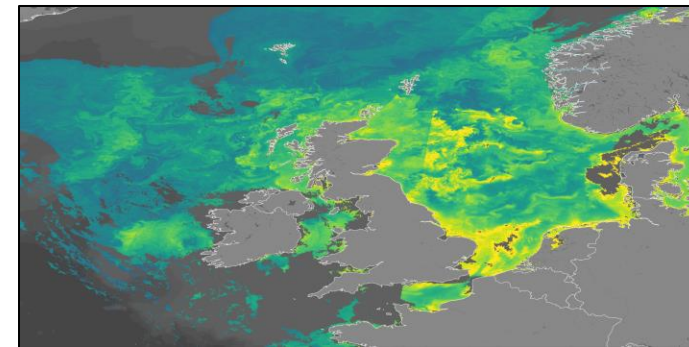
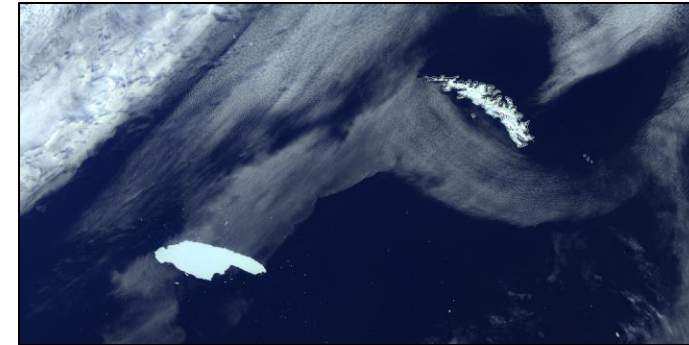
Available at: <https://view.eumetsat.int/>

...Quick viewing RGBs*, chlorophyll and sea surface temperature (SST) **images**

...Making images and animations

...Creating and sharing views;

- <https://view.eumetsat.int/productviewer?v=4772> (A68a from S3 OLCI)
- <https://view.eumetsat.int/productviewer?v=36933> (North Sea Chlorophyll from S3 OLCI)
- <https://view.eumetsat.int/productviewer?v=22854> (Gulf Stream SST from S3 SLSTR)



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(Note: more to come on EUMETView in the final webinar session!)



Part 2: Contextualising WMS layers with QGIS



Opt.
code

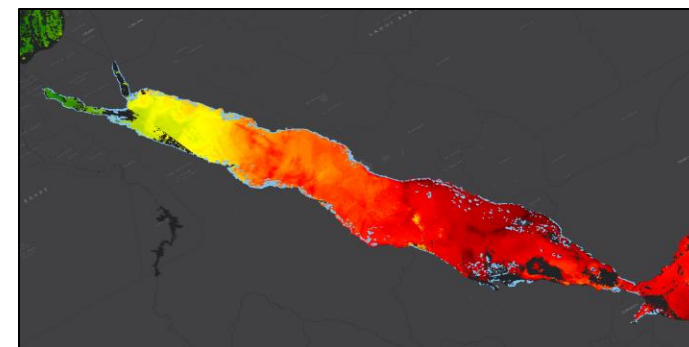
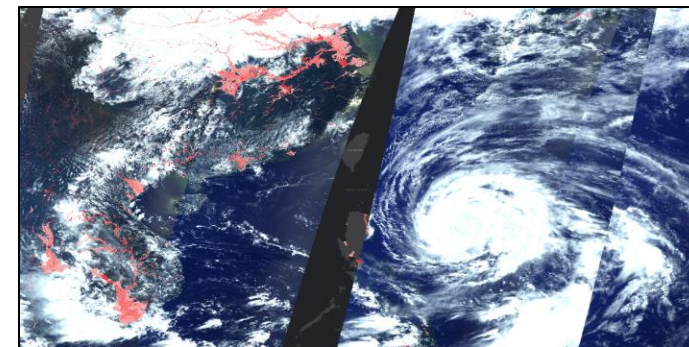
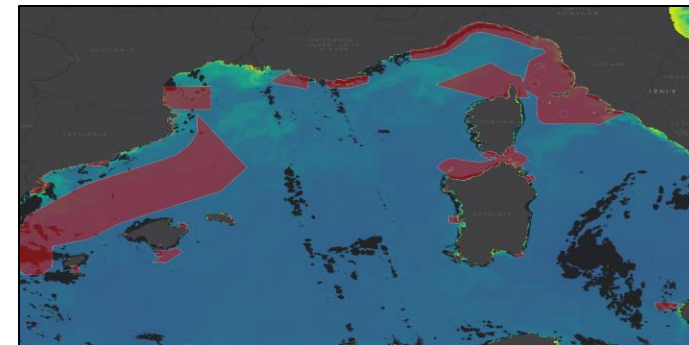
Available at: <https://qgis.org/>

...Importing WMS **image** layers

...Contextualising EO information

...Customising projections

*Note: WMS (Web Map Service) are services that distribute **images** derived from products. WMS layer are **not** the data itself. Some data access is provided by related services WCS and WFS.*



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Part 3: Refined image processing with **SNAP**

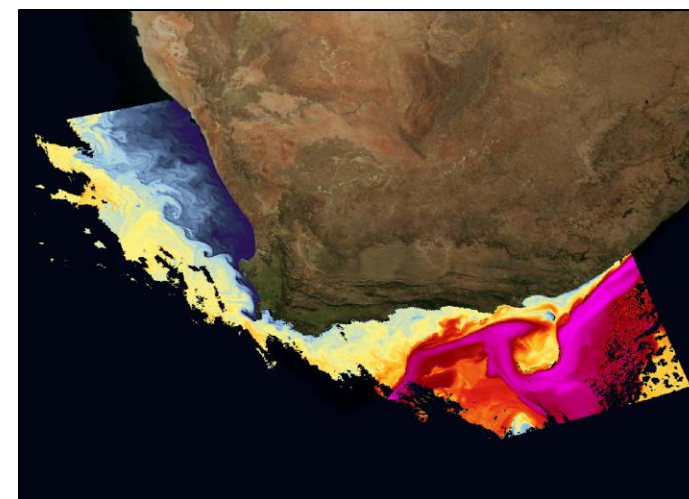
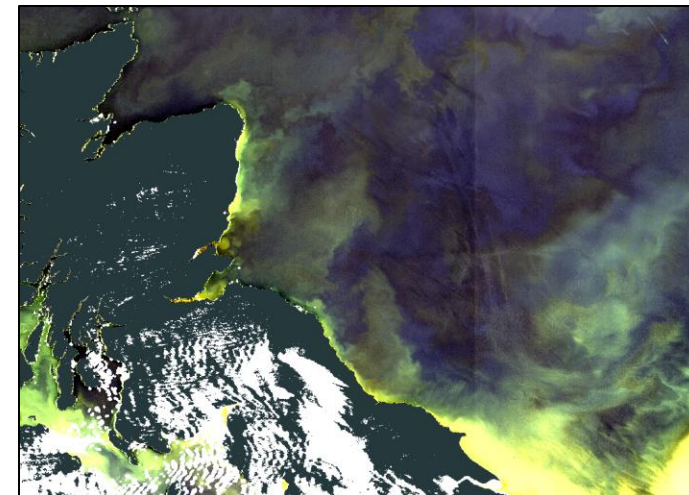
Opt.
code

Available at: <https://step.esa.int/>

...Level 1B RGB **data** (True/Natural/False colour??)

...Removing atmospheric signals (with the ocean in mind!)

...working with level-2 data (SST and Ocean colour)



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Part 4: Visualisation customisation with **Python**

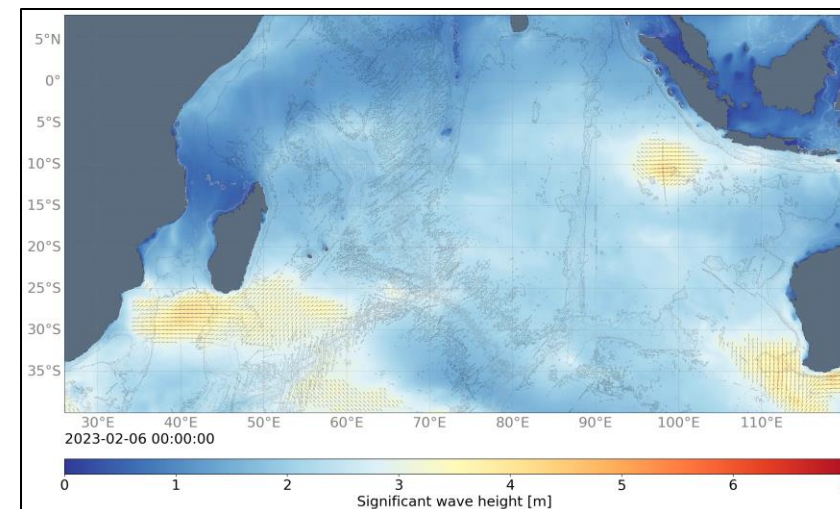
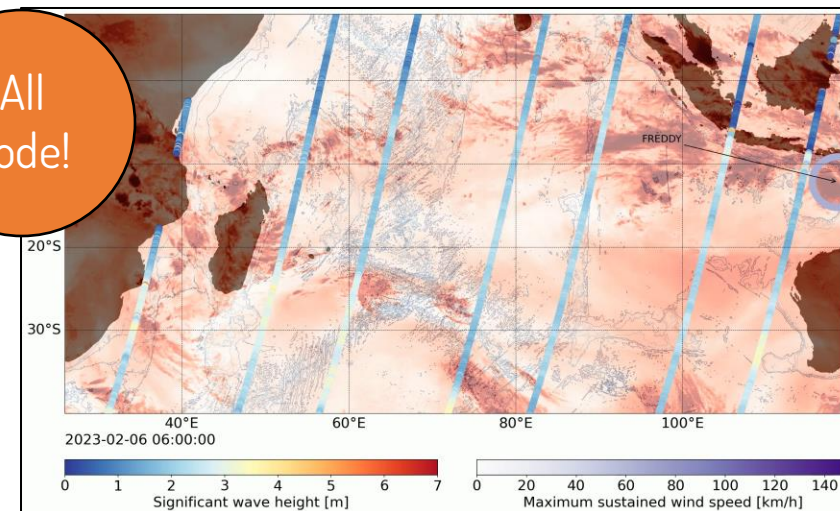
Available at: <https://github.com/wekeo/wekeo4oceans>

...Jupyter Notebook repositories

...Manipulating imagery and ocean products

...Case study examples; altimetry and more

All
code!

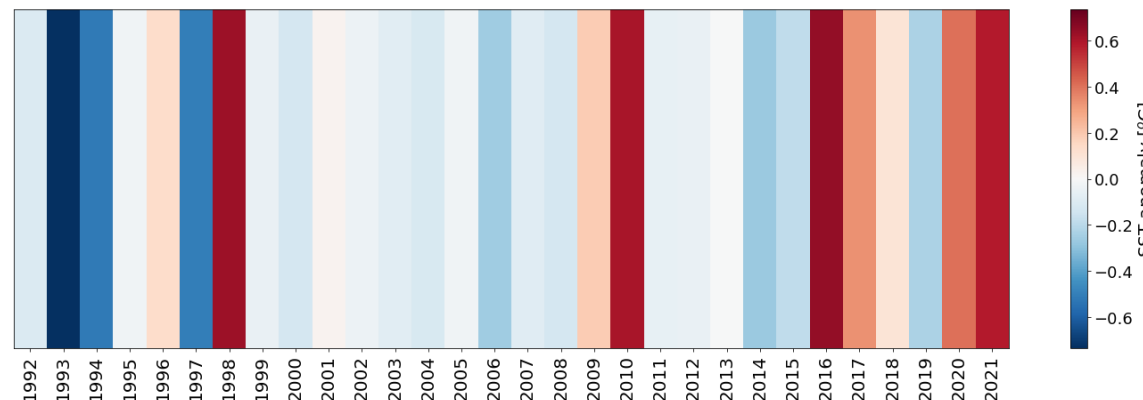
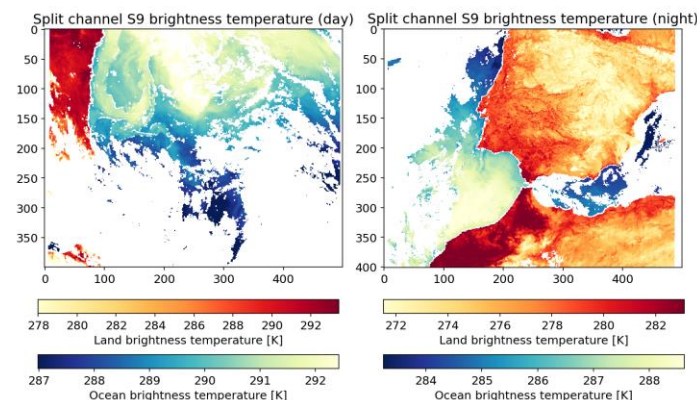
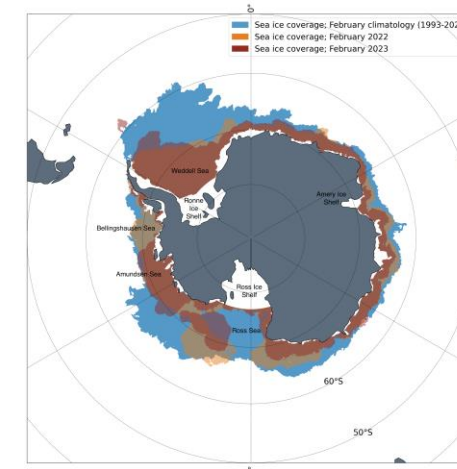
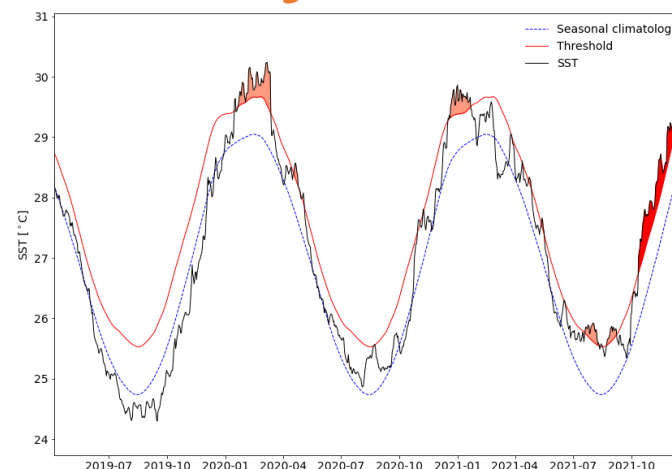
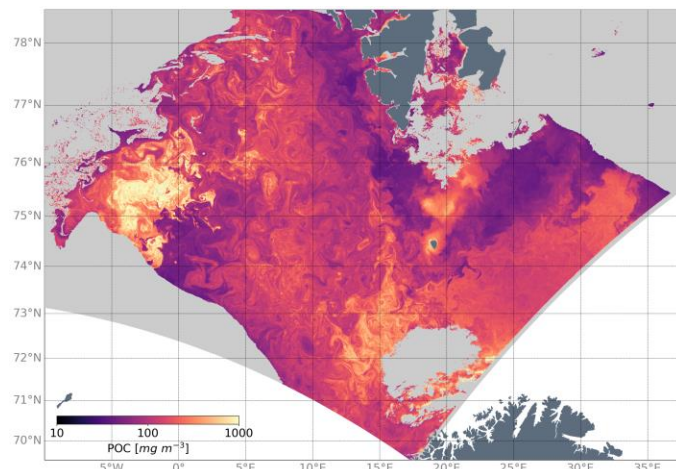


....continued >>!

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Part 4: Visualisation customisation with Python



Thanks for listening!

Want to know more?

- EUMETSAT Helpdesk:
 - ops@eumetsat.int
- Upcoming training events on EUMETSAT Copernicus marine EO data:
 - <https://training.eumetsat.int/>
- Code resources for working with EUMETSAT Copernicus marine EO data:
 - <https://gitlab.eumetsat.int/eumetlab/oceans>
 - <https://github.com/wekeo/wekeo4oceans>
- Examples of data in use:
 - <https://www.eumetsat.int/case-studies>

- My Twitter:
 - [@brloveday](https://twitter.com/brloveday)



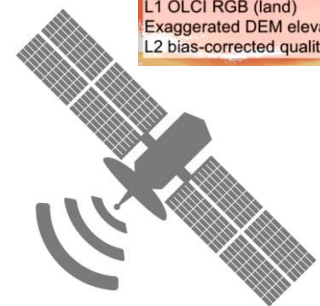
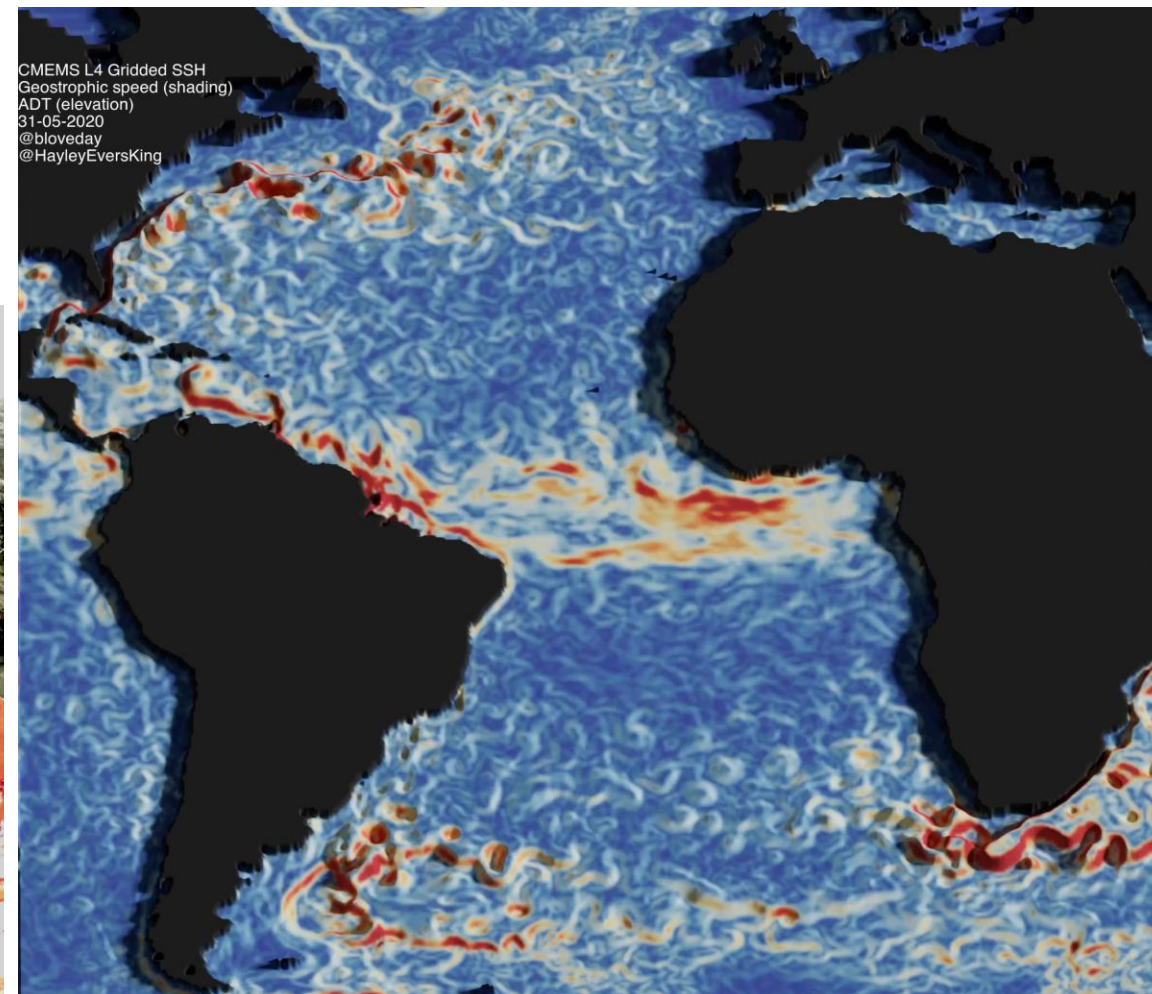
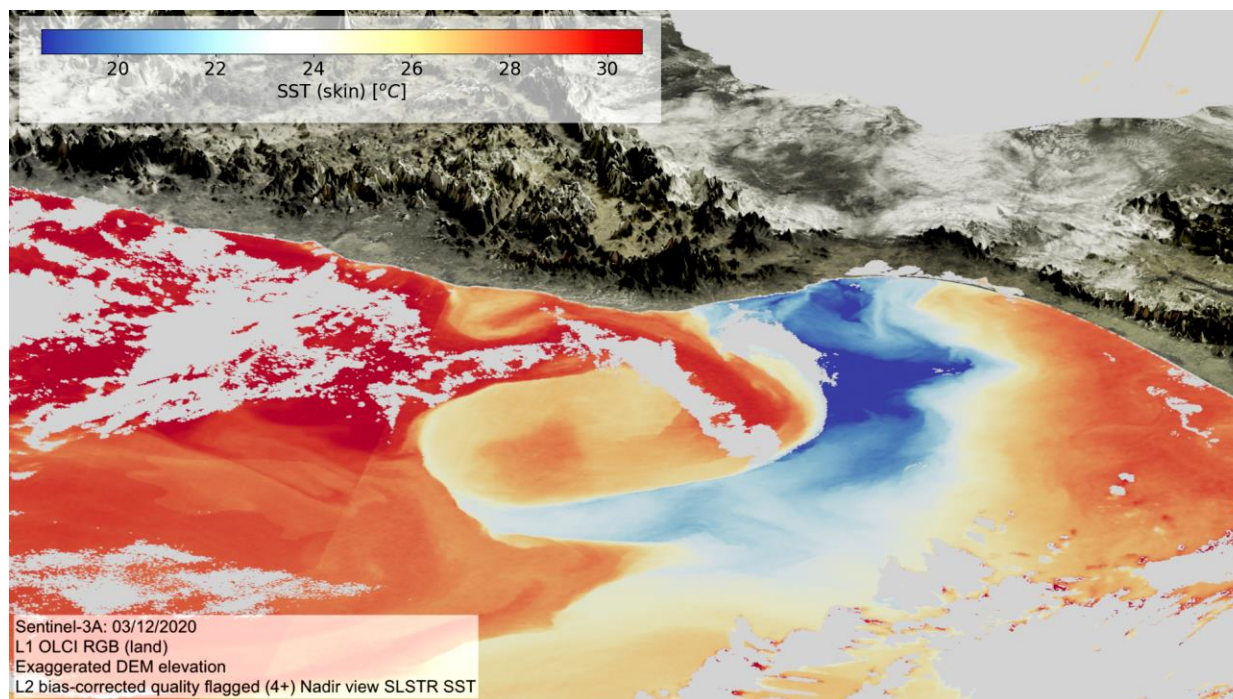
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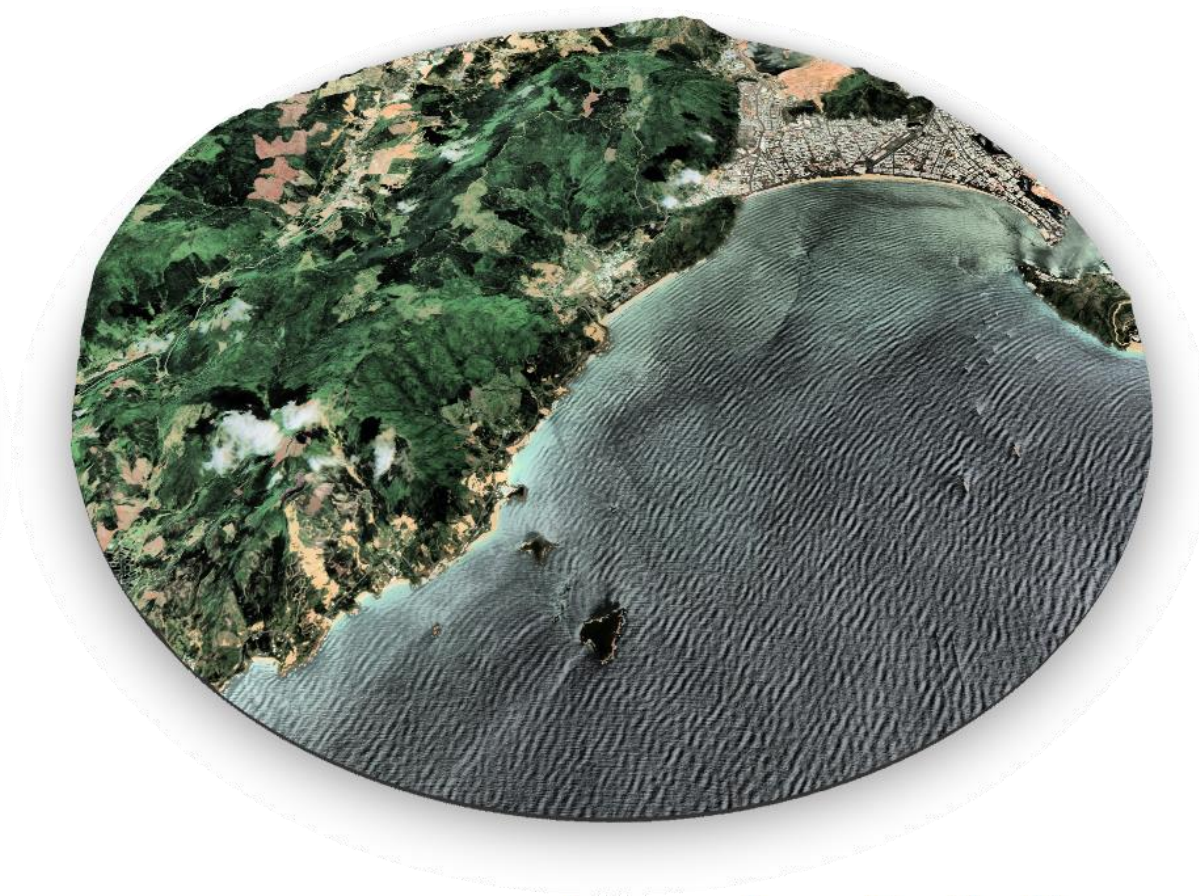
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Extra example 1: Python + Blender >> DEM and surface relief



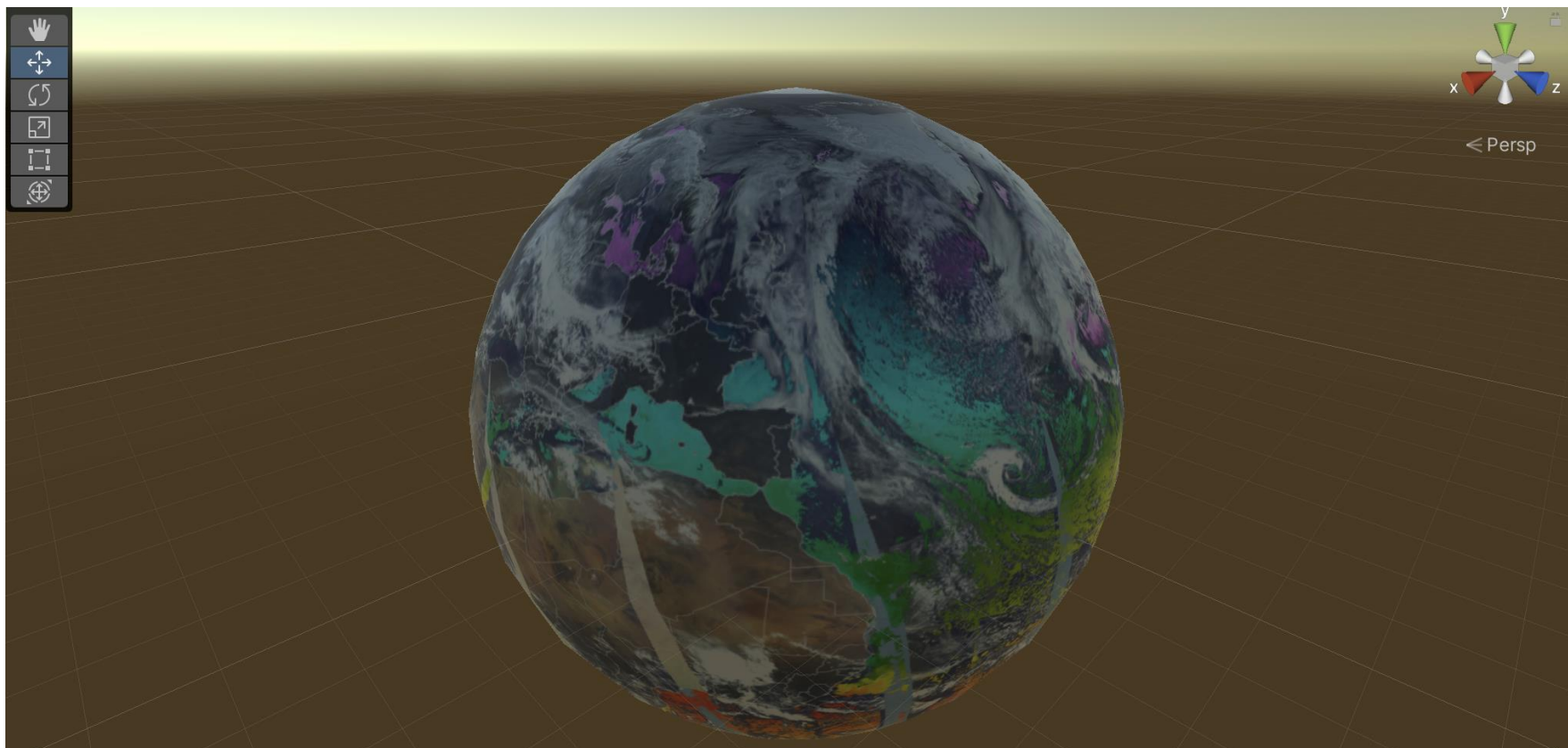
Extra example 2: Python + Rayshader



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Extra example 3: Python + Unity >> App-based VR rendering!



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