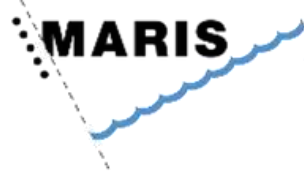


27-29 May 2024 



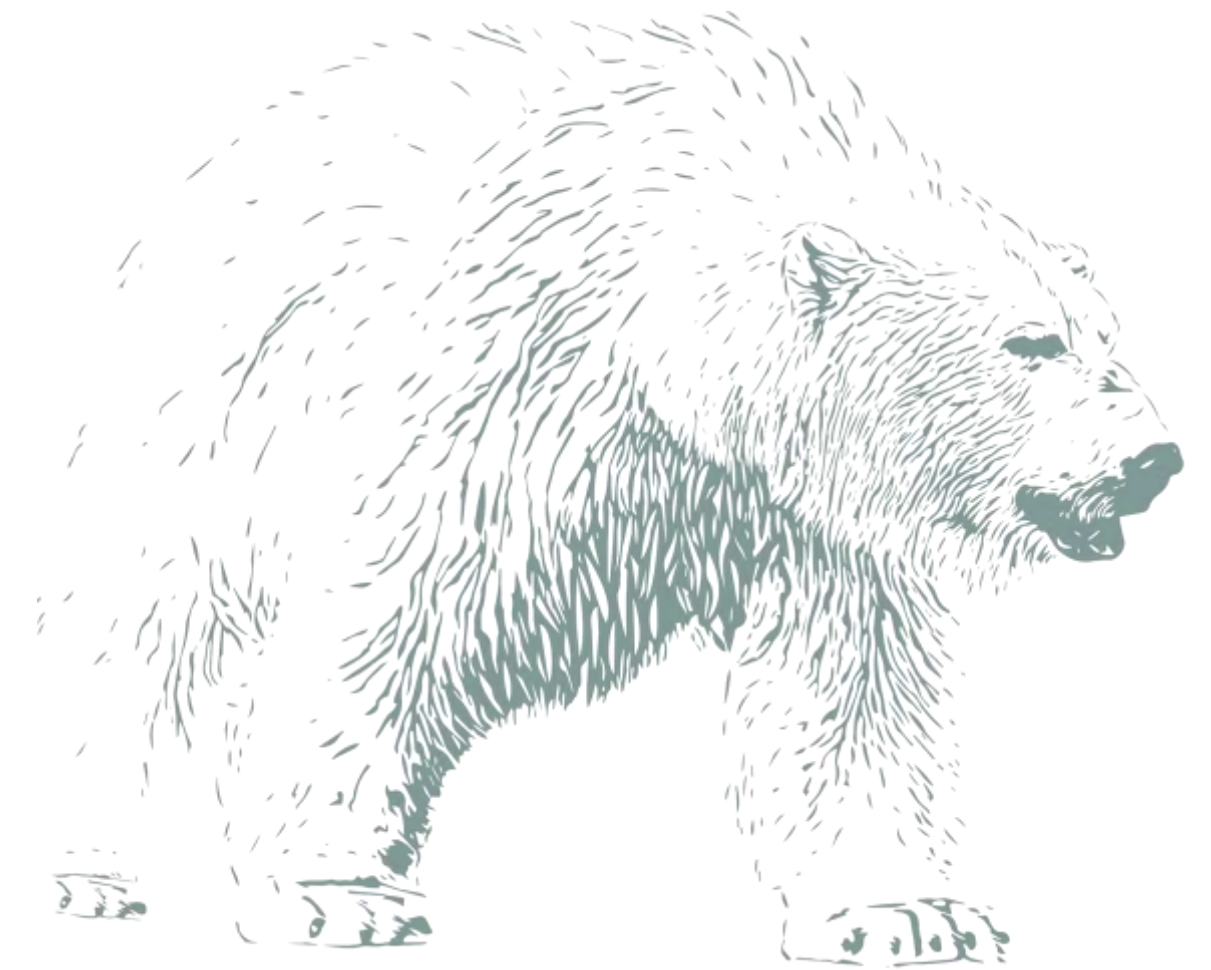
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International conference on Marine Data and Information Systems



NERSC ARctic VirtuAl Laboratory (NARVAL)

- A. Perrin, J. Johannessen, A. Bonaduce



NERSC
NANSEN ENVIRONMENTAL
AND REMOTE SENSING CENTER
THE NANSEN CENTER • BERGEN • NORWAY

- IMDIS 2024 - Bergen (Norway), 27-29 May 2024

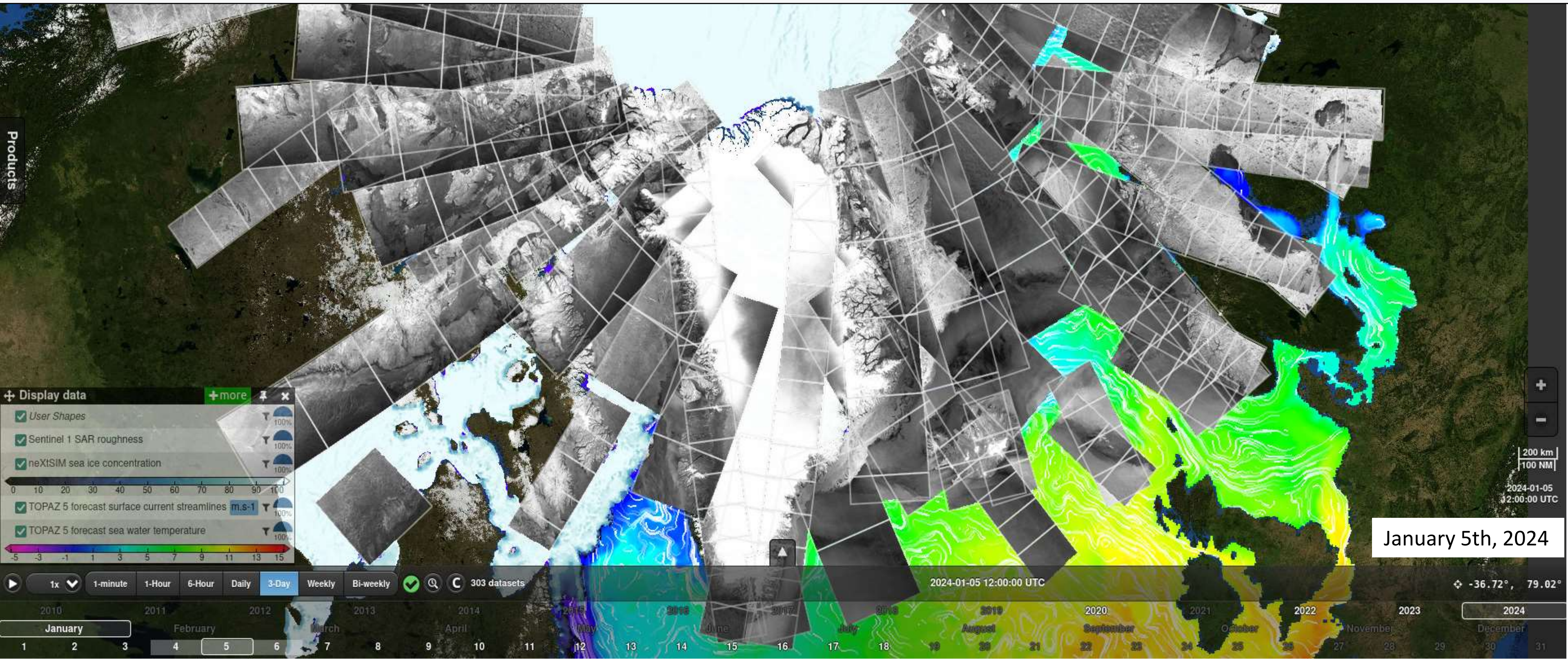
Outline



- What is NARVAL?
- Components and Functionalities
- Use Cases: EOs, in-situ data and numerical models
- Take-home messages

What is NARVAL ?

NARVAL is a web visualisation portal with easy-to-use functionalities to display, overlay and collocate Earth Observation data and model fields from multiple sources



NARVAL Components

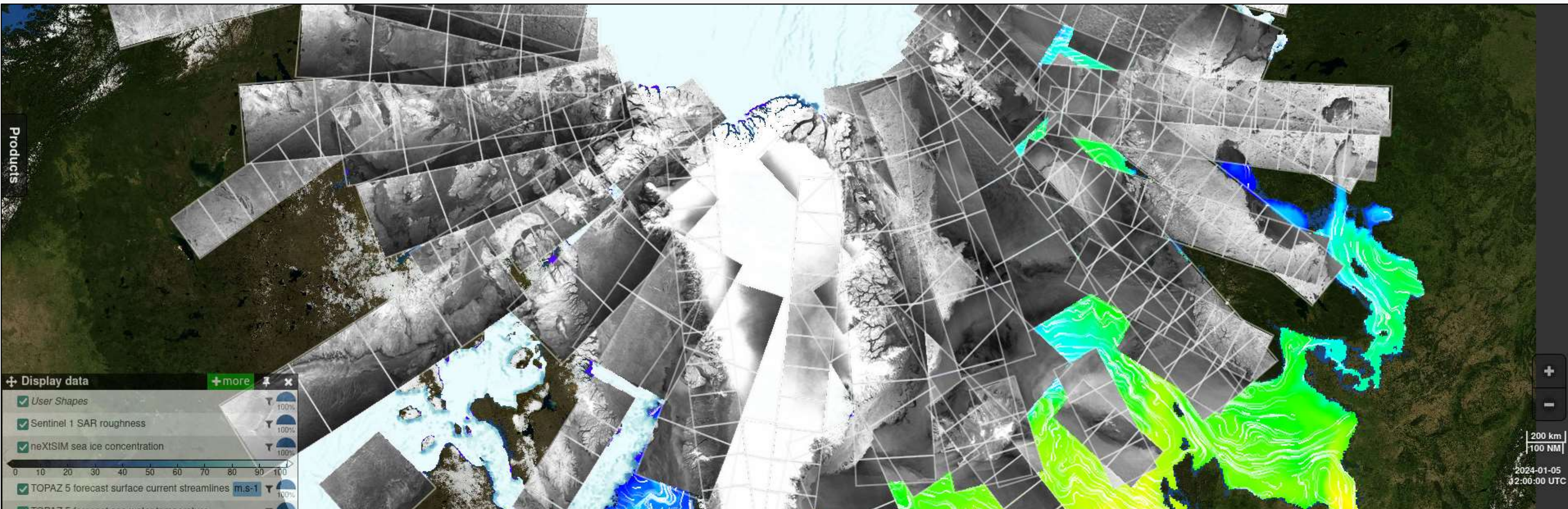


Processing chain based on [GeoSPaaS](#) developed at NERSC

- Python framework for Earth data cataloguing and processing

Interface: [Syntool](#) developed at OceanDataLab

- Web portal for Earth data visualisation



Interface Functionalities



Test Syntool portal

fram:8082/?date=1592697609000×pan=3d&extent=-8458119.7542126_-4510997.2022467_8458119.7542126_3744480.0995211&zoom=2&prod...

NERSC IT GrayLog NERSC To read GitHub Travis CI Coveralls Docker Hub Python Doc Data providers Tools TOPVOYS data Index of /odl/syntool/ Other Bookmarks

Syntool example portal

powered by Syntool web

Display data

Hotspots Share

Shortcuts How To

+ Display data +more

- ARGO profilers 100%
- CMEMS 008_046 geostrophic current 100%
- Sentinel 1 EW GRD HH denoised 100%
- Sentinel 3A OLCI Chlorophyll_a 100%
- neXtSIM sea ice concentration 100%
- TOPAZ reanalysis sea water temperature raster 100%

Products

500 km
200 NM

2020-06-21 00:00:09 UTC

1x 6-Hour Daily 3-Day Weekly BI-weekly

No datasets

2020-06-21 00:00:09 UTC

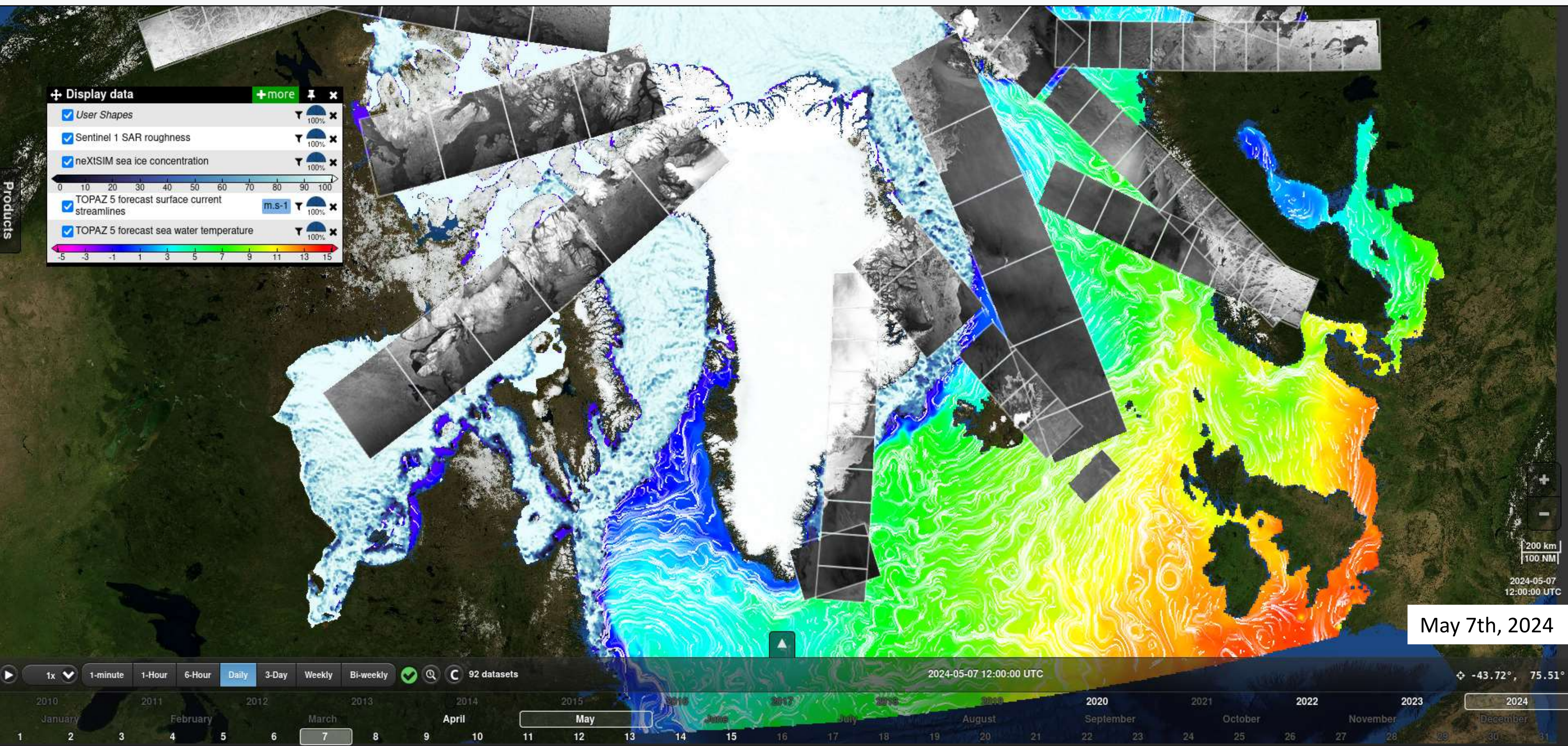
-45.00°, 86.46°

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

January February March April May June July August September October November December

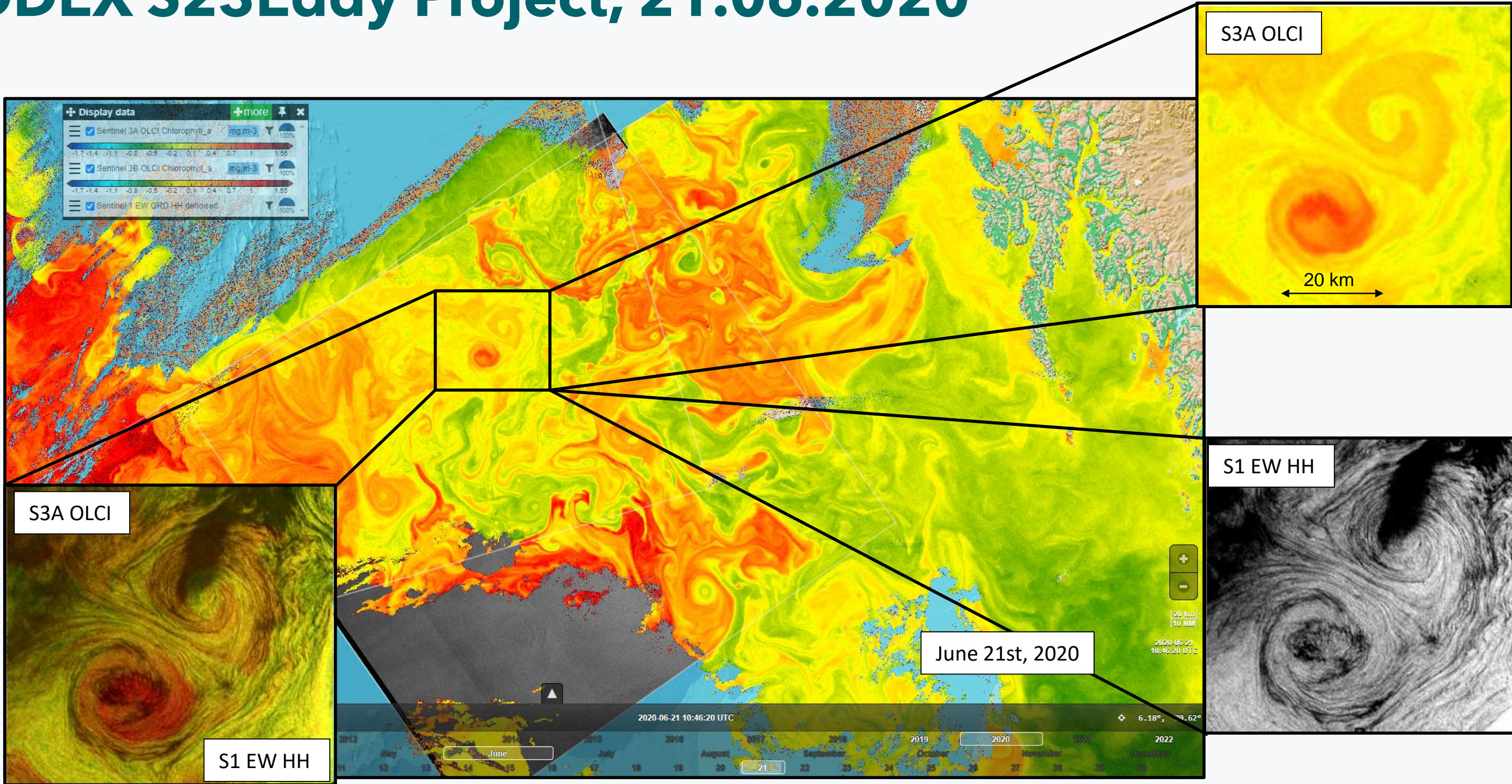
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Use Case: NeXtSIM, Sentinel-1 and TOPAZ, 07.05.2024



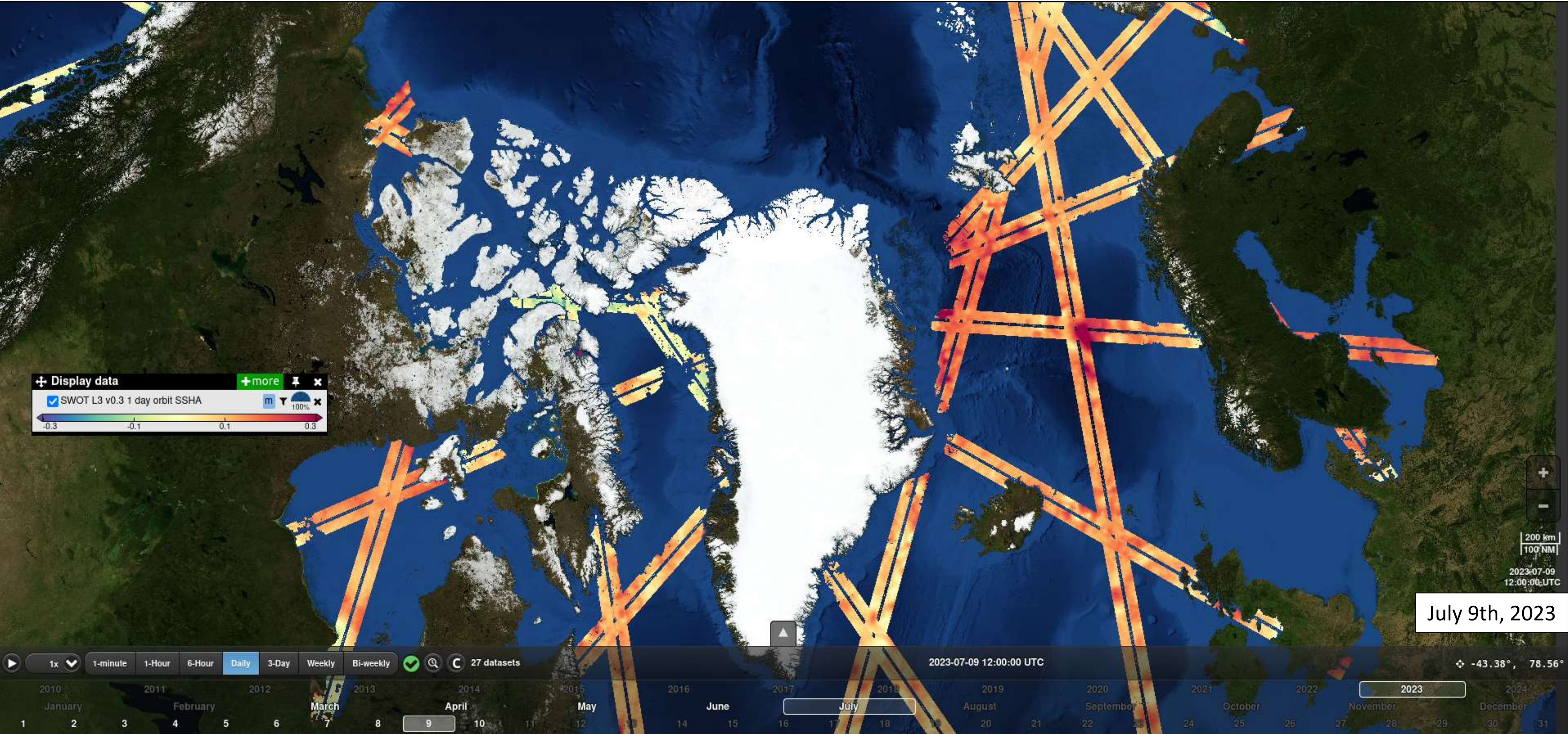
May 7th, 2024

Use Case: ESA PRODEX S23Eddy Project, 21.06.2020

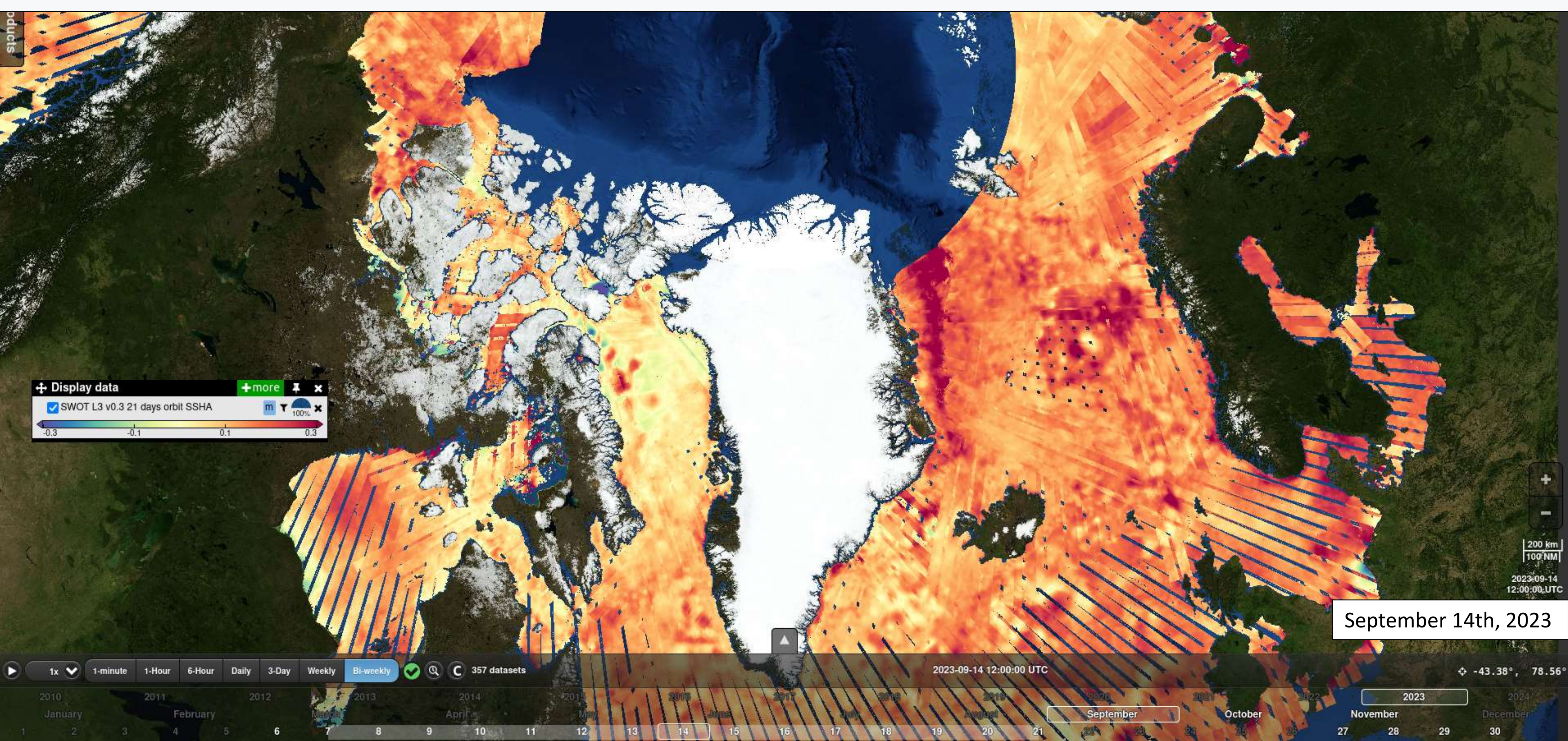


- Multi-sensor synergy: surface expression of mesoscale eddies in the Lofoten Basin

Use Case: SWOT SSHA at the high-latitudes: 1 day orbit, 09.07.2024

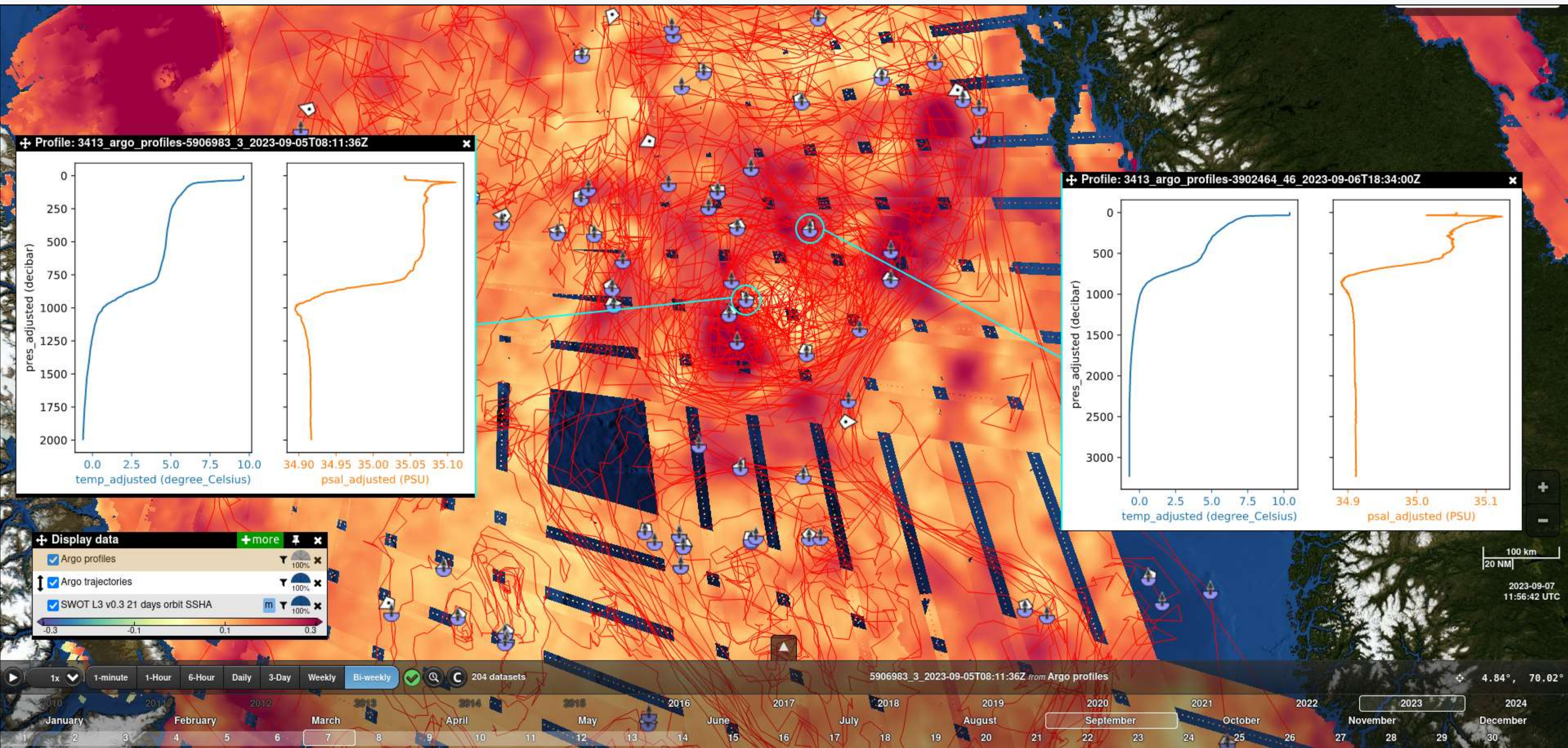


Use Case: SWOT SSHA: 21 days orbit centered on, 14.09.2023

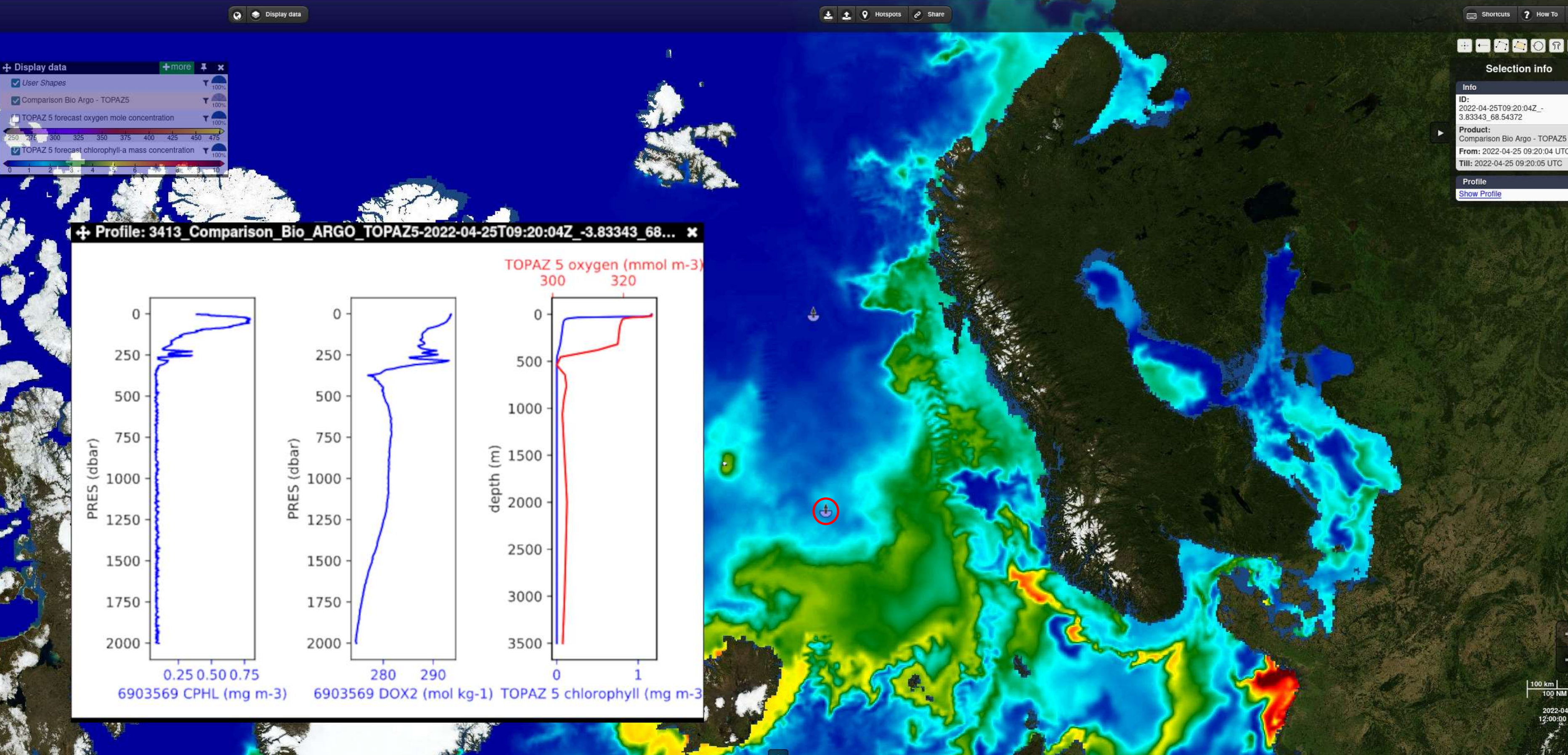


Use Case:

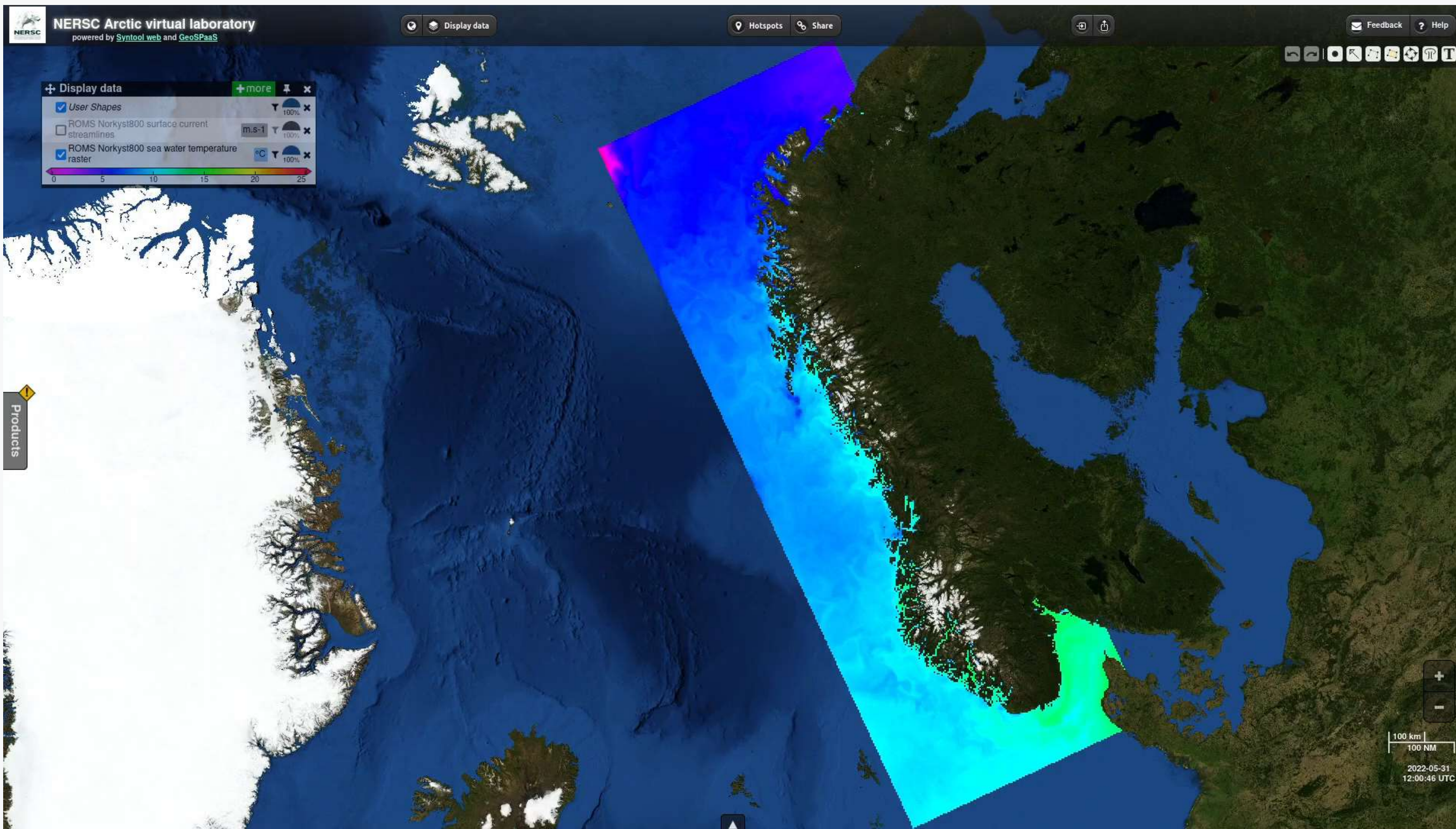
ARGO profile + SWOT Sea Surface Height Anomaly, 07.09.2023



Use Case: BGC Argo and TOPAZ, 25.02.2022



Use Case: NorKyst800, Sea Surface Temperature & Current, 31.05.2022



Take-home messages



- NARVAL is a web visualisation portal for Earth data:
<https://narval.nerisc.no/>
- Multi-sensor synergy and collocation with multiplatform data
- Several products updated daily, retention window: 1 month + 10 days forecast
- Great value for building an interactive layer to enhance the Digital Twin precursors
- Funded by the Research Council of Norway (SIS) and ESA's [Arktalas project](#)



Thank you!

27-29 May 2024 



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