Interreg Baltic Sea Region
Co-funded by the European Union
BLUE ECONOMY Baltic Sea2Land
NACIONĀLAIS ATTĪSTĪBAS PLĀNS 2020
EIROPAS SAVIENĪBA Eiropas Reģionālās attīstības fonds
IEGULDĪJUMS TAVĀ NĀKOTNĒ
Līguma Nr. 23-11.17e/20/246
CE2COAST

Klimata izmaiņas un Rīgas jūras līča modeļaprēķini mūsu gadsimtam (Ce2Coast projekta rezultāti)

Institute of Numerical Modelling
UNIVERSITY OF LATVIA
Uldis Bethers, LU Skaitliskās modelēšanas institūts

Jūras TP koordinācijas grupa, Zvejniekciems, 24-Aug-2023

Saturs

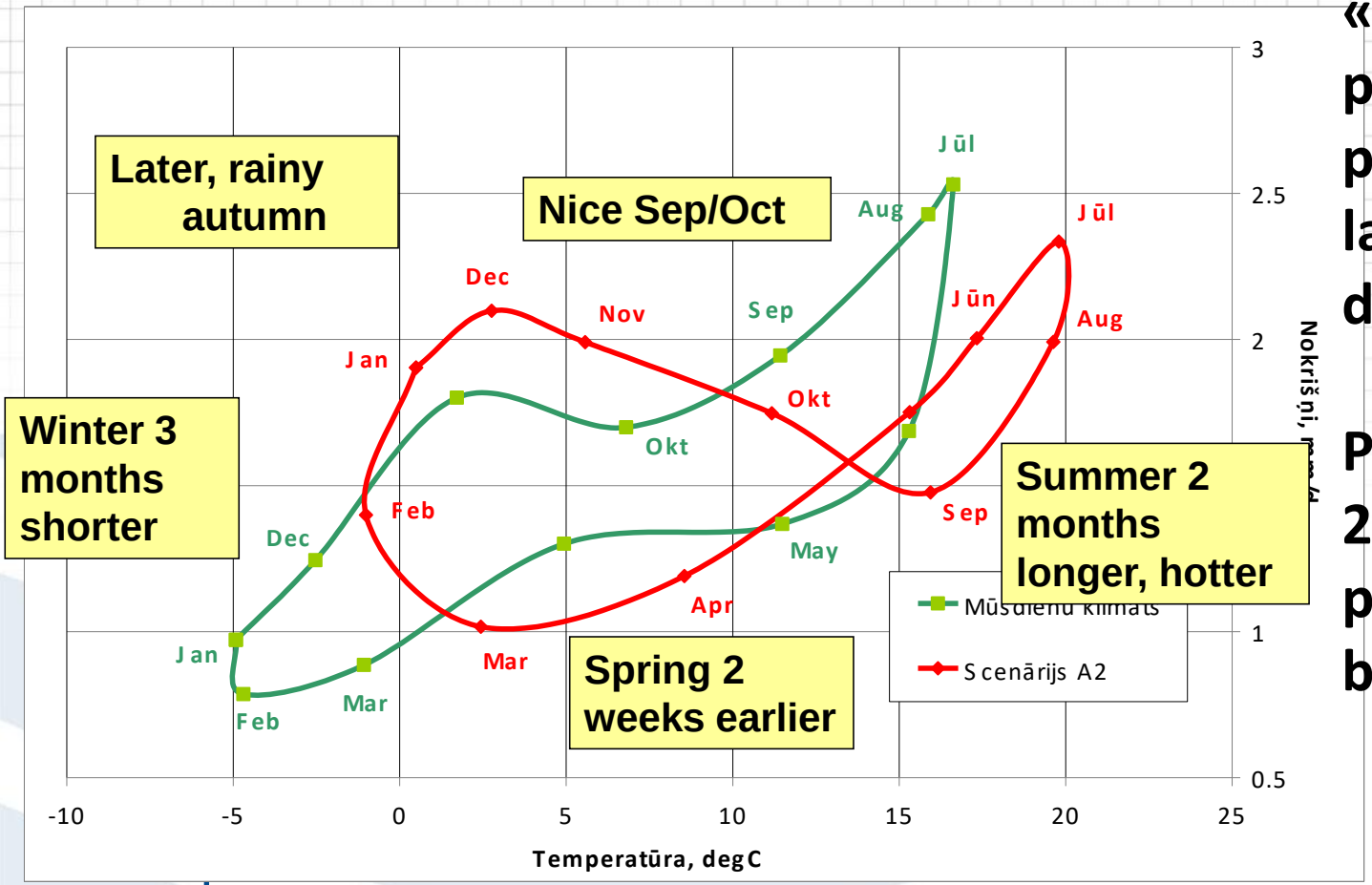
1. Ce2Coast projekts
2. Rīgas līča reanalīze un nākotnes projekciju modeļaprēķini
3. Modeļaprēķinu rezultāti
4. KO ar to darīt?
5. …. citi jaunumi – HywasPort attīstība

1. Ce2Coast

2020/23 JPI Climate & JPI Ocean projekts «Ce2Coast: Downscaling Climate and Ocean Change to Services: Thresholds and Opportunities»

WP1: DATA
WP2: Earth System Models (CMIP6)
WP3: Hindcast (Feb 2022) and Projections (Feb 2023)
LU: RJL klimatiskie aprēķini pagātnei un nākotnei
WP4: Pressures on services
WP5: Science and society

1. Ce2Coast



Ja par klimatu viss «sen skaidrs», tad par JŪRAS klimata projekcijām nav labu skaitlisku datu

Piemērs – 2009.gada klimata projekcijas gs beigām Dobelē

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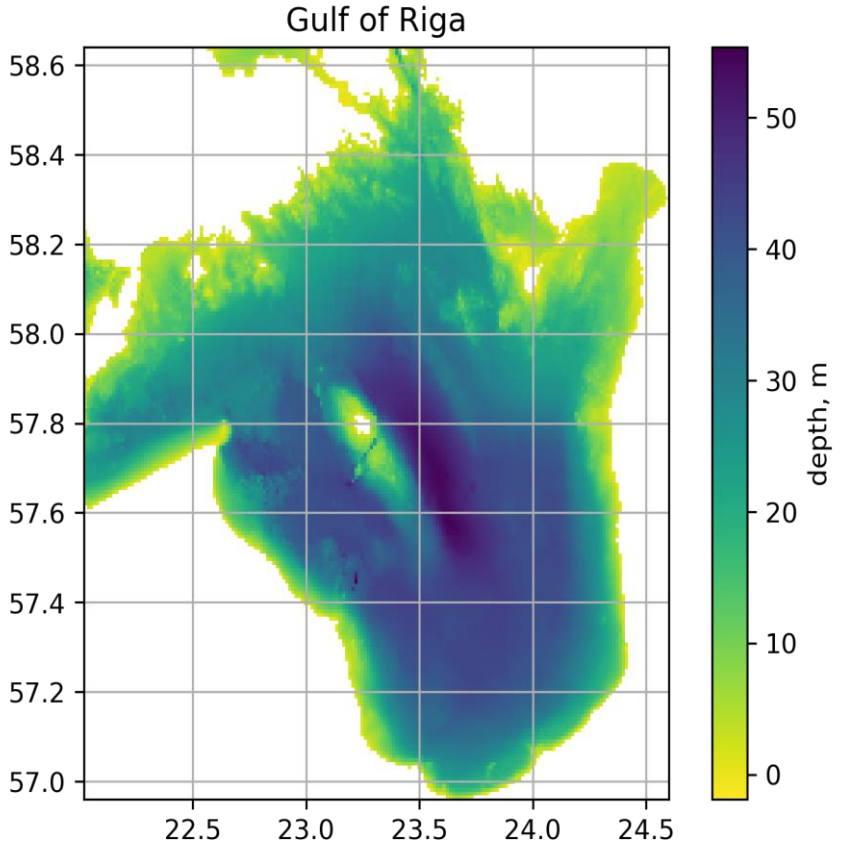
2. Reanalysis for GoR

Time period: 1993-2021 (29 yrs)
Domain: Gulf of Riga (Lon 22°-24.6°E, Lat 56.96° - 58.64°N)
Software: HD Hiromb-BOOS model, UL setup
Waves SWAN, UL setup
Resolution: 1x1 km (187x203 nodes), 20 layers, 10 minutes
Parameters: velocity, waterlevel, T, S, ice, waves

Bathymetry: Emodnet (2018)
BC: HD CMEMS climatic (SMHI NEMO)
Waves FMI reanalysis
River runoff: E-HYPE (SMHI) reanalysis
Atmosphere forcing: ERA5 hourly reanalysis
Tides: astronomic calculations

Output: daily in all nodes, hourly in surface nodes
Performance: 1 year/day
Production: 1st iteration Jul/Aug-21
Final iteration Jan/Feb-22



2. Projection for GoR

Time period: 2021-2100 (80 yrs)

Domain: Gulf of Riga (Lon 22°-24.6°E, Lat 56.96° - 58.64°N)

Software: HD Hiromb-BOOS model, UL setup

Waves SWAN, UL setup

Resolution: 1x1 km (187x203 nodes), 20 layers, 10 minutes

Parameters: velocity, waterlevel, T, S, ice, waves

Bathymetry: Emodnet (2018)

BC: Bias corrected downscaled NorESM2-MM_ssp585_r1i1p1f1

Waves LU fetch setup

River runoff: E-Hype climatological model

Atmosphere forcing: Bias corrected corrected downscaledNorESM2-MM_ssp585_r1i1p1f1

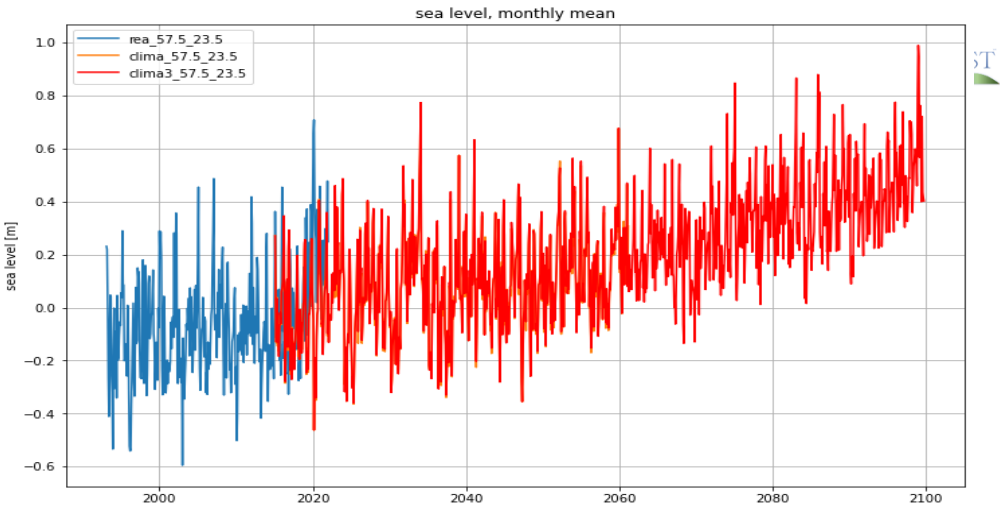
Tides: astronomic calculations

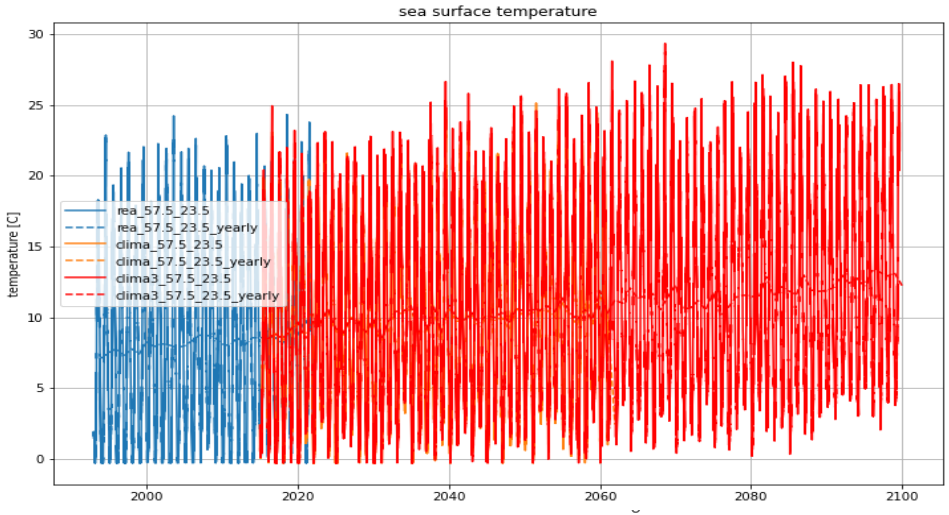
Output: daily in all nodes, hourly in surface nodes

Performance: 1 year/day

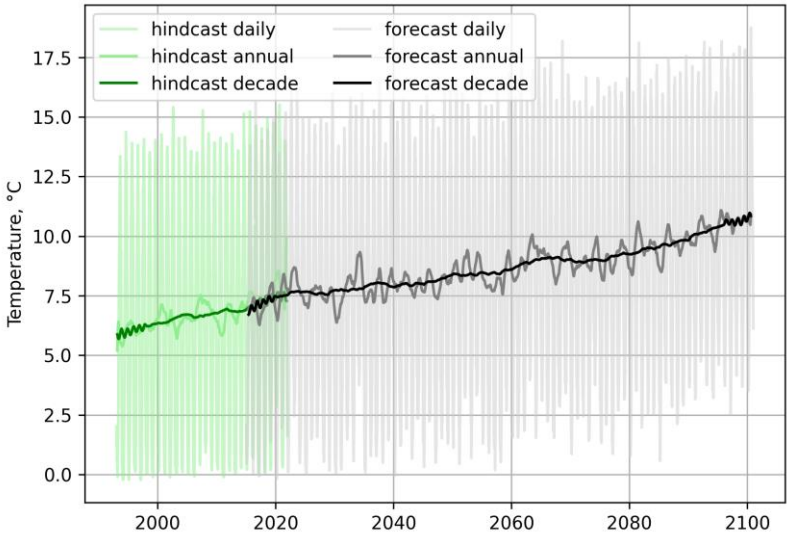
Production: 1st iteration Dec-22

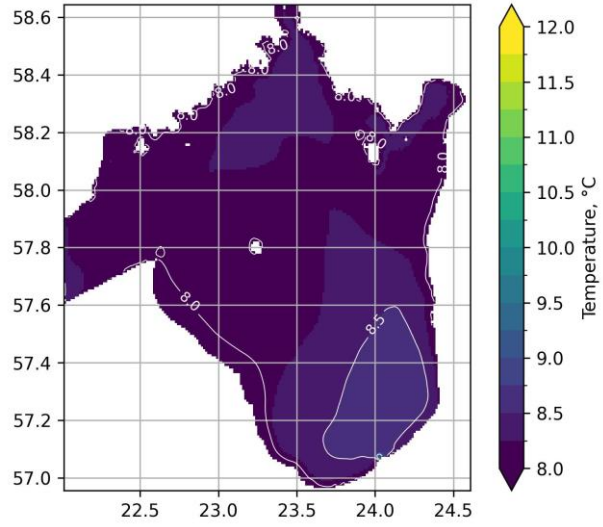
Final iteration Jan/Feb-23

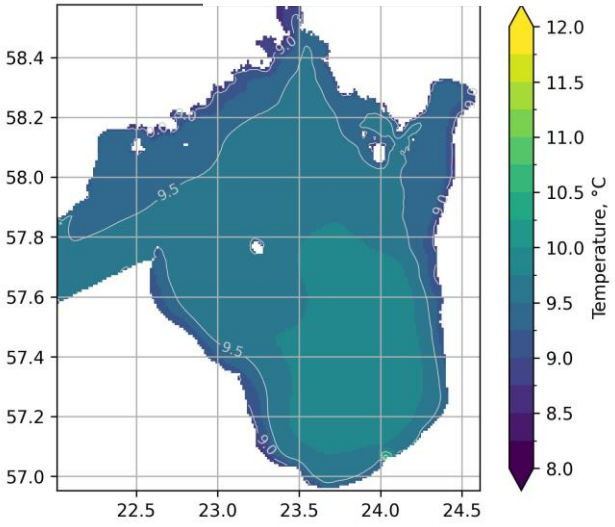


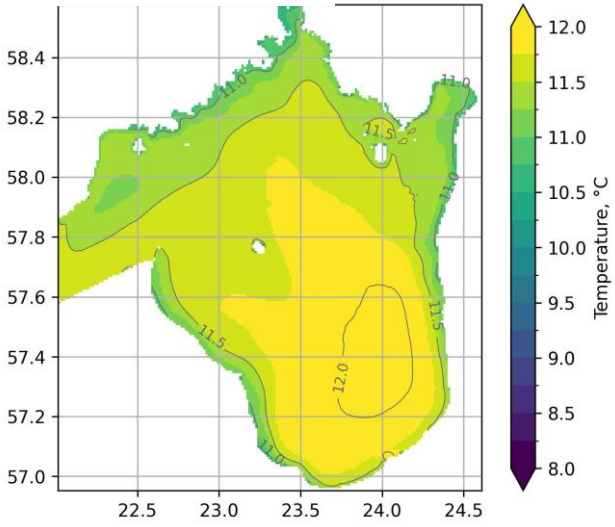


3. Few results - T

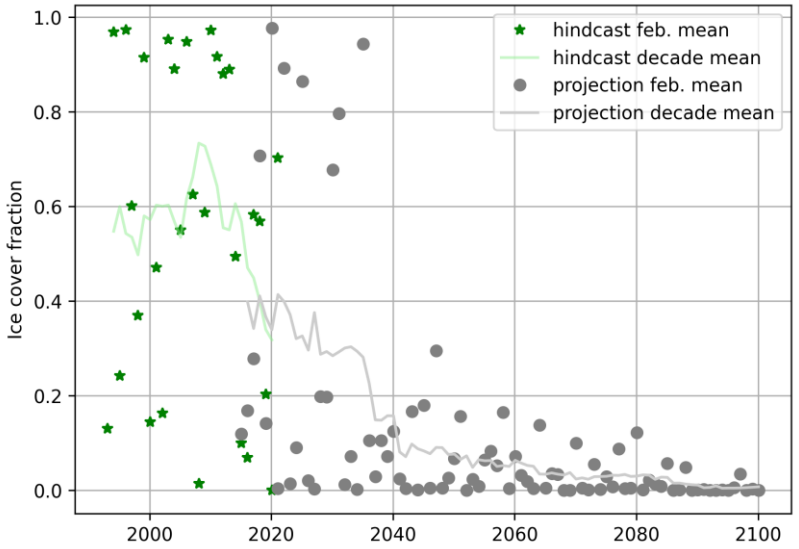


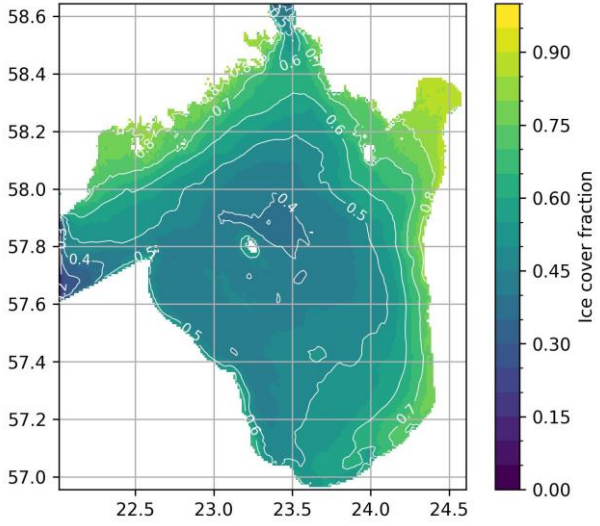


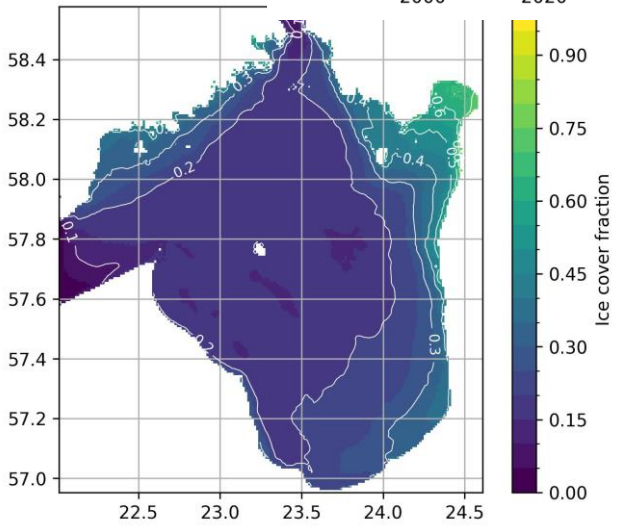


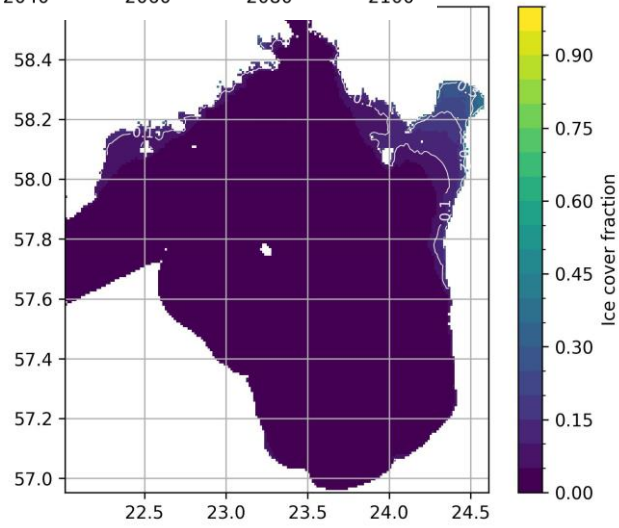


3. Few results – FEB ice

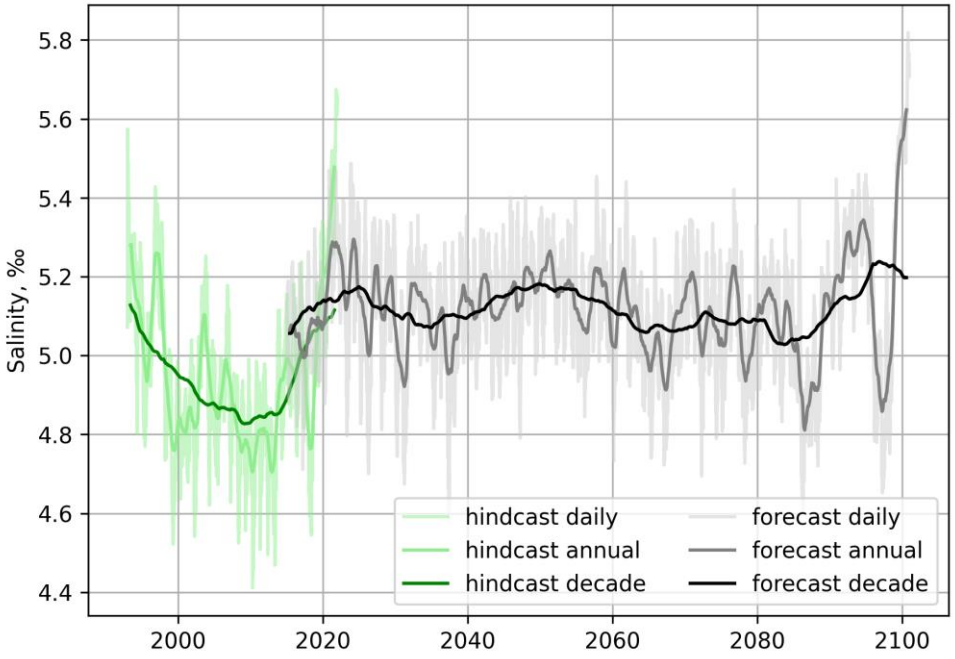


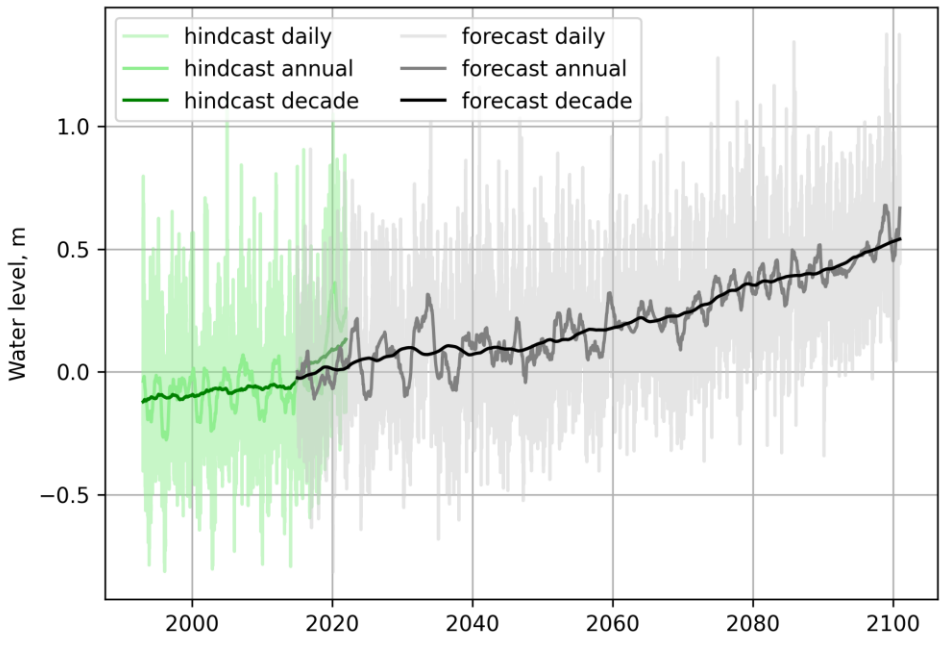




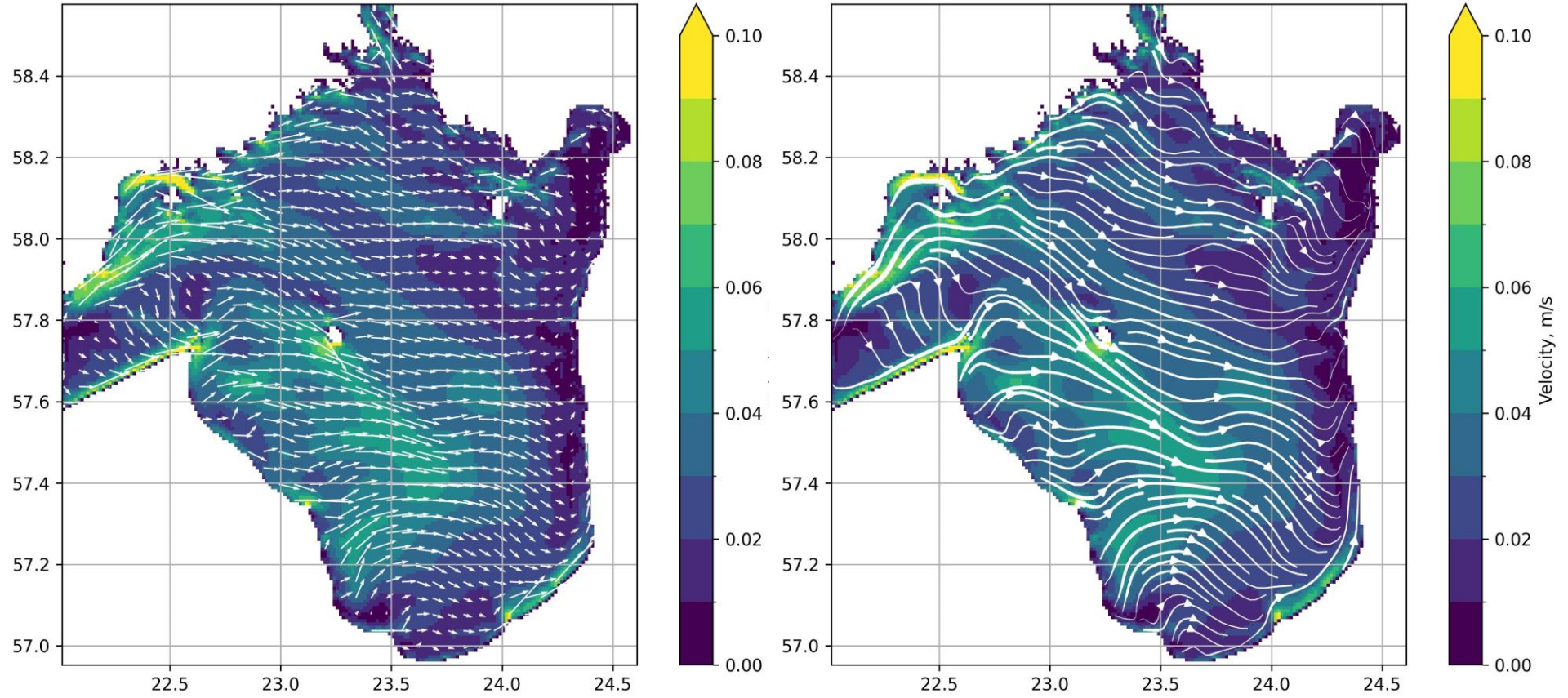


3. Few results – Salinity and Waterlevel

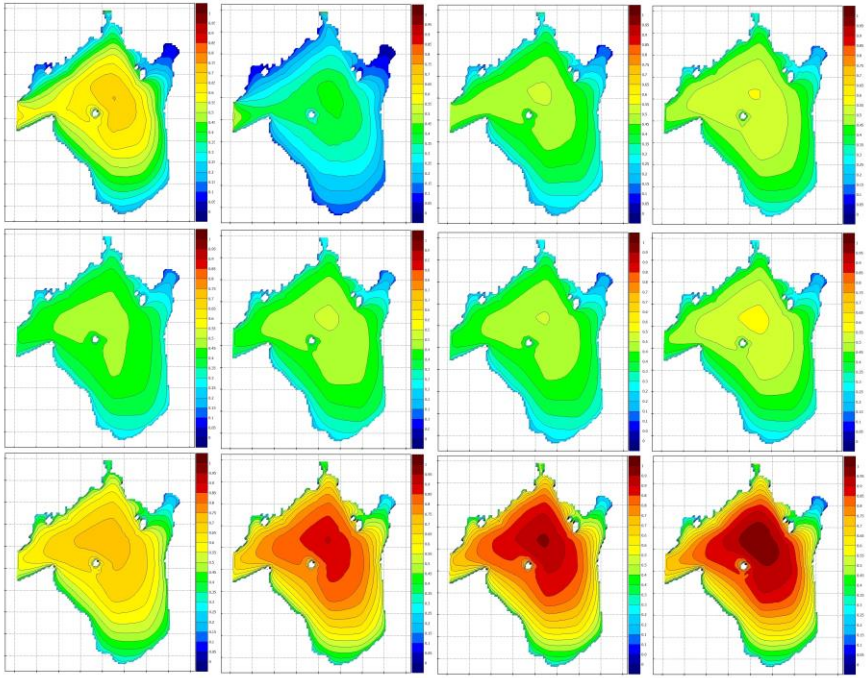


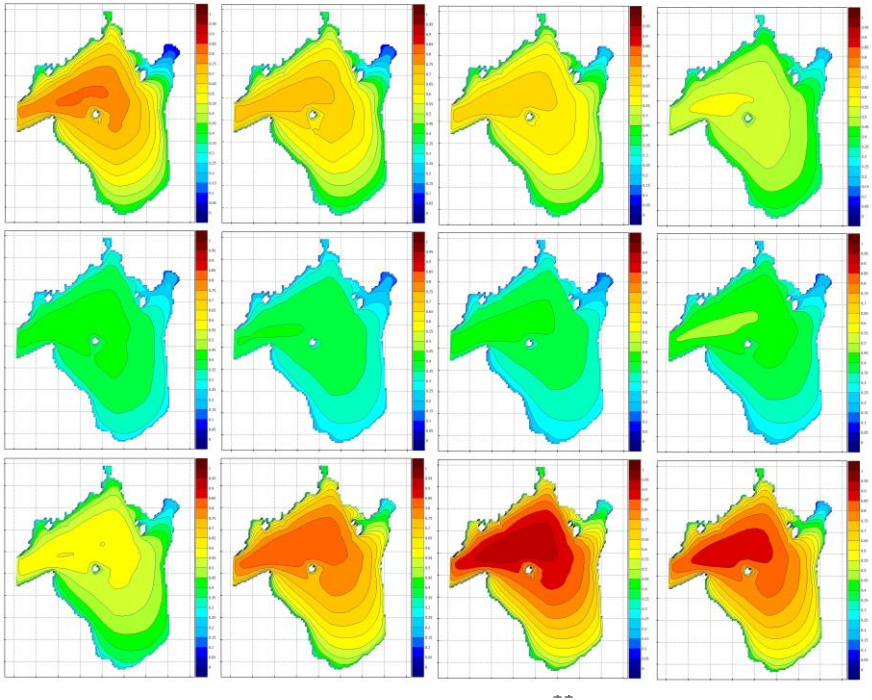


3. Few results – surface velocity and streamlines

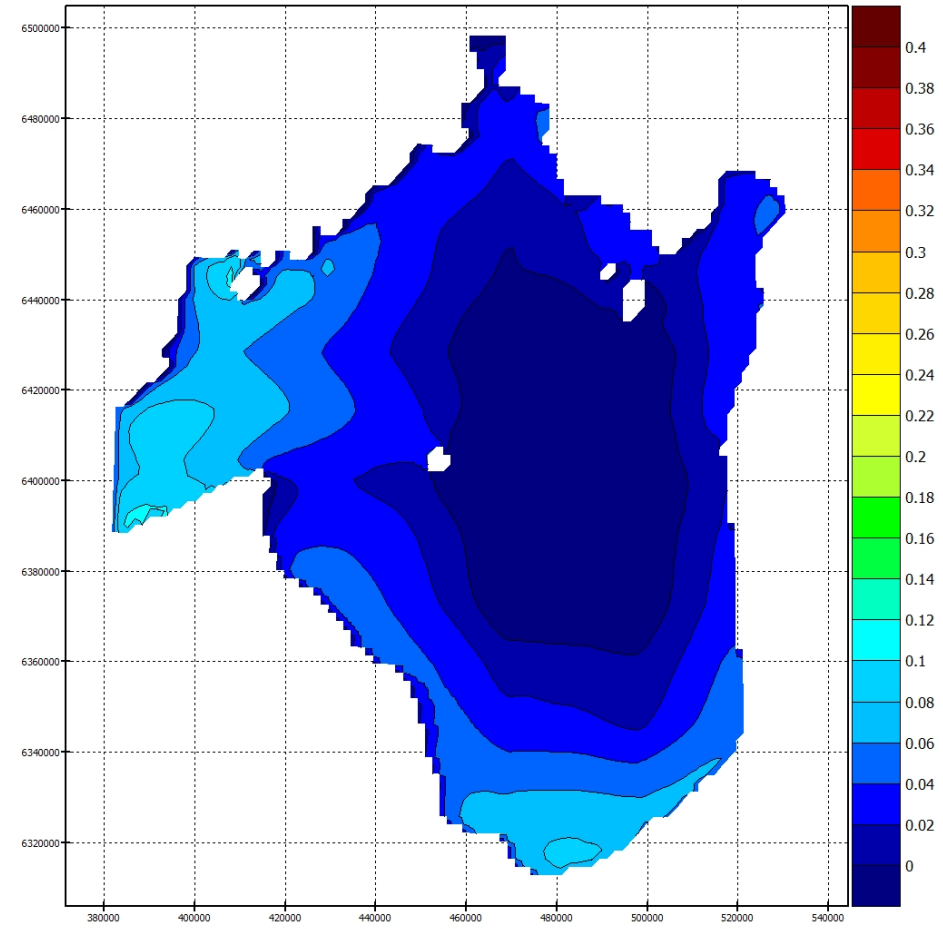


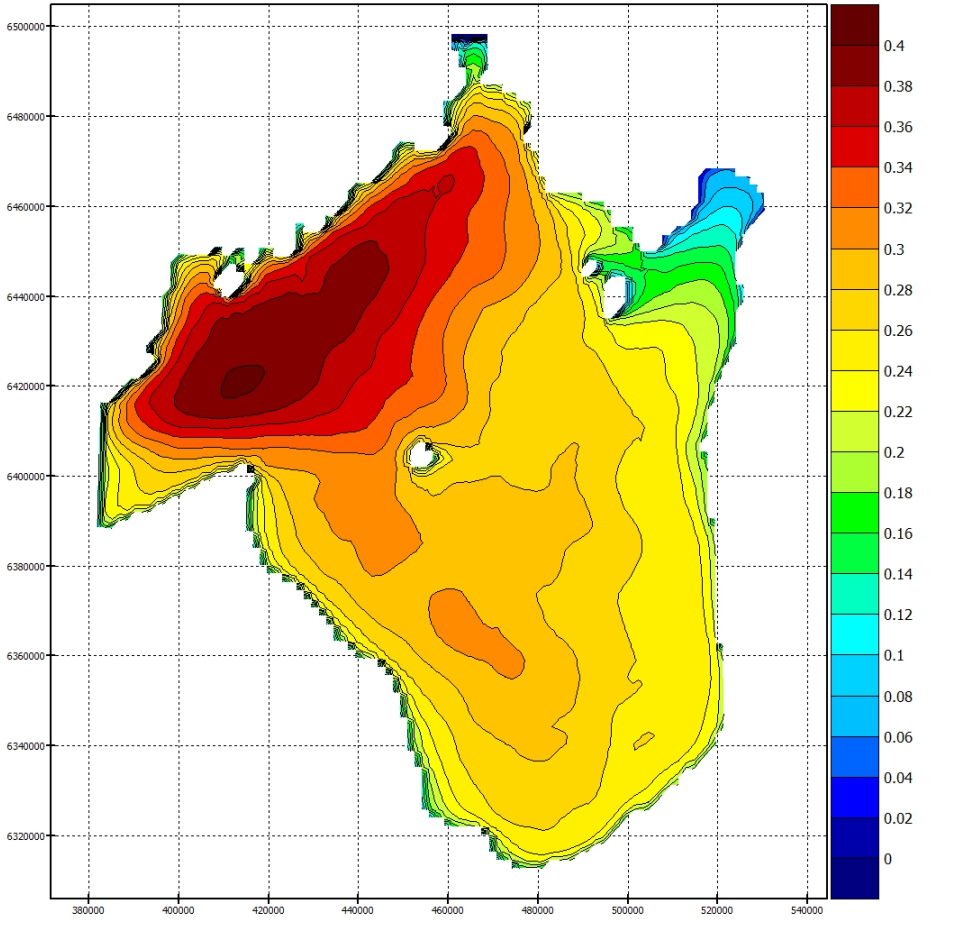
3. Few results – waves (monthly, reanalysis/projection)





3. Few results – waves (annual and FEB increase)



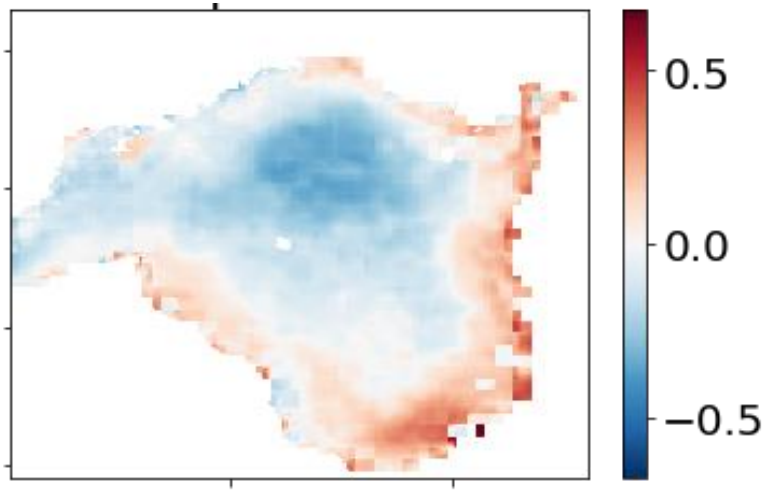


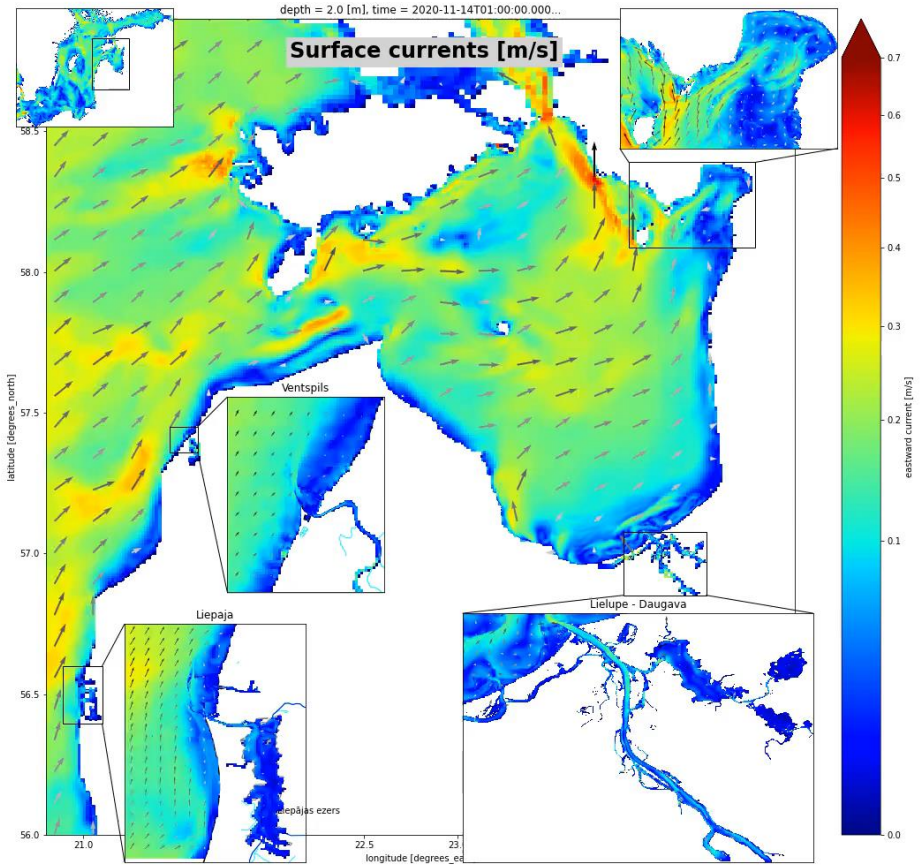
4. KO ar to darīt?

Aprēķini veikti –jāizmanto (bet aprēķinātājiem nav intereses)

- **Izvietots ZENODO**
- **Projekti datu analīzei (attēls – satelītcaurspīdības/sāļuma korelācija)**
- **WEB lapa = jūras klimata portāls**
- **Dot 3.pusēm**

Visam vajag resursus…





5. Citi jaunumi - HywasPort attīstība

PAIC uzvarēja MERCATOR konkrsā par CMS lietojumiem. 2023-2025

2 jauni servisi

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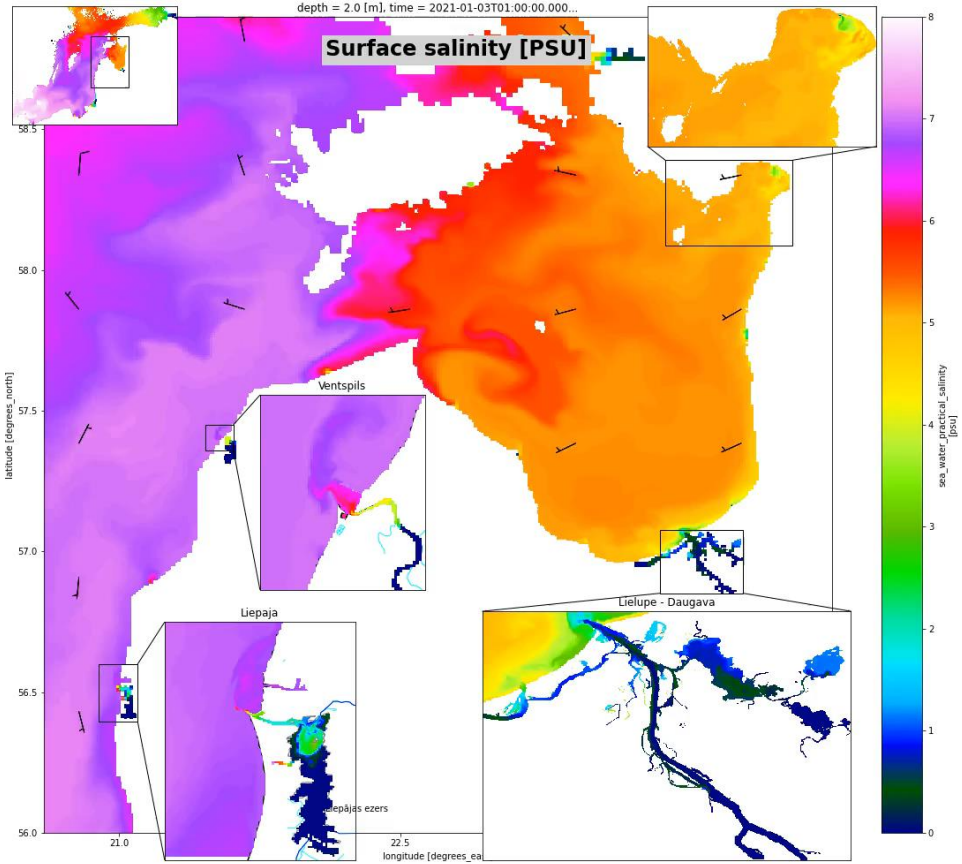

5. Citi jaunumi - HywasPort attīstība

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