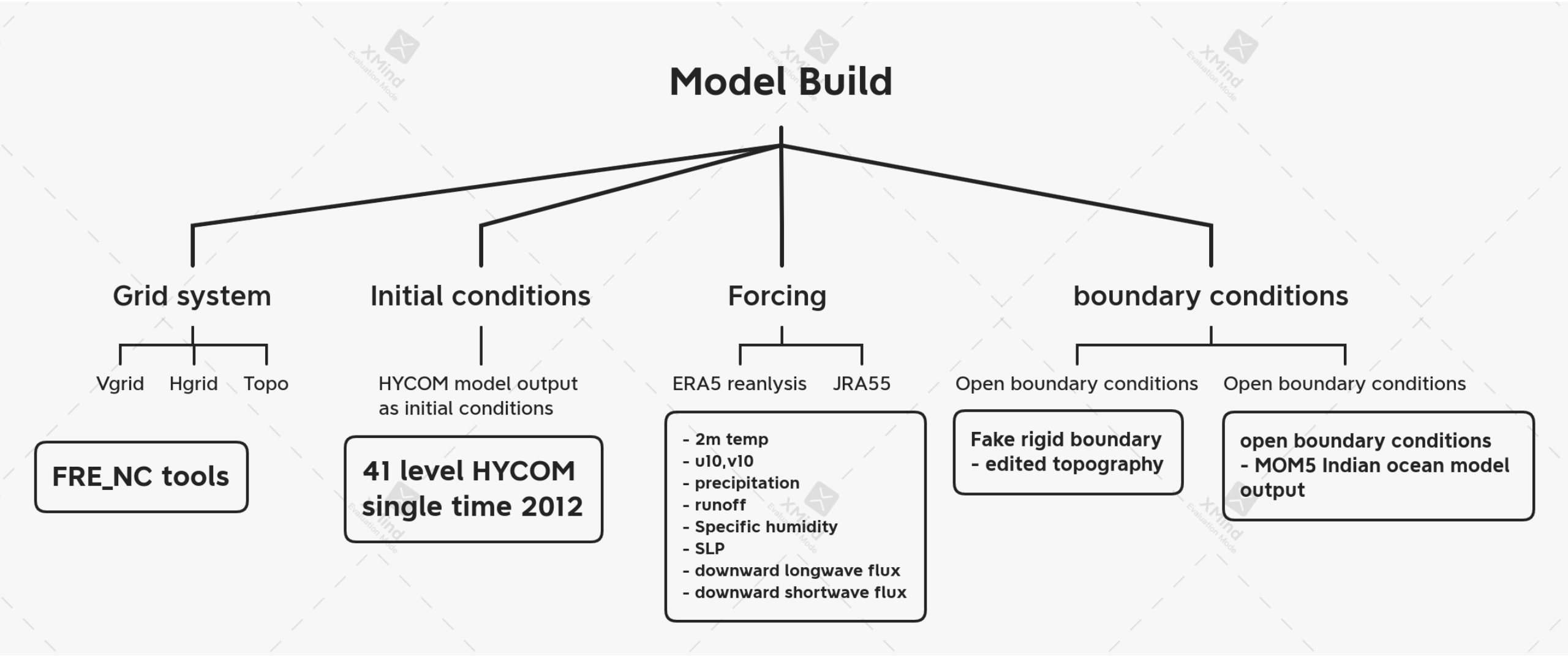
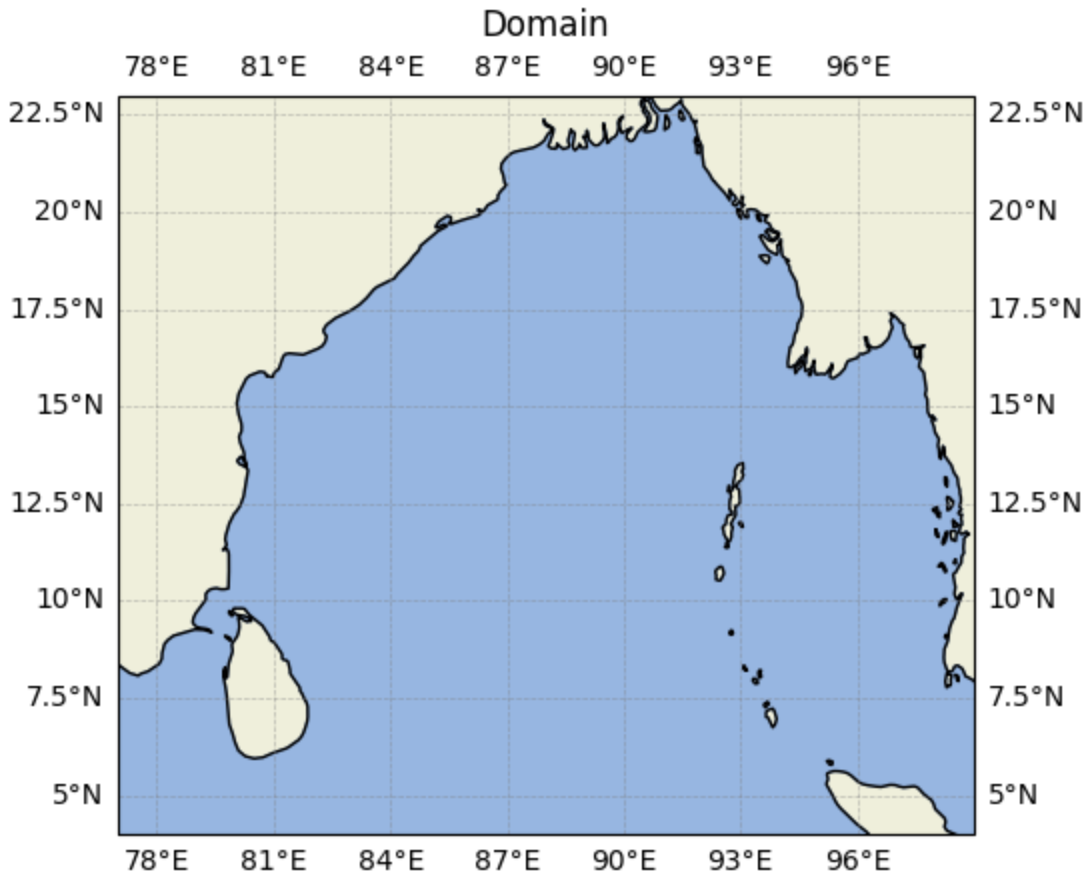
Aim

- Configure and setup high-resolution ocean model for bay of bengal region

Model overview

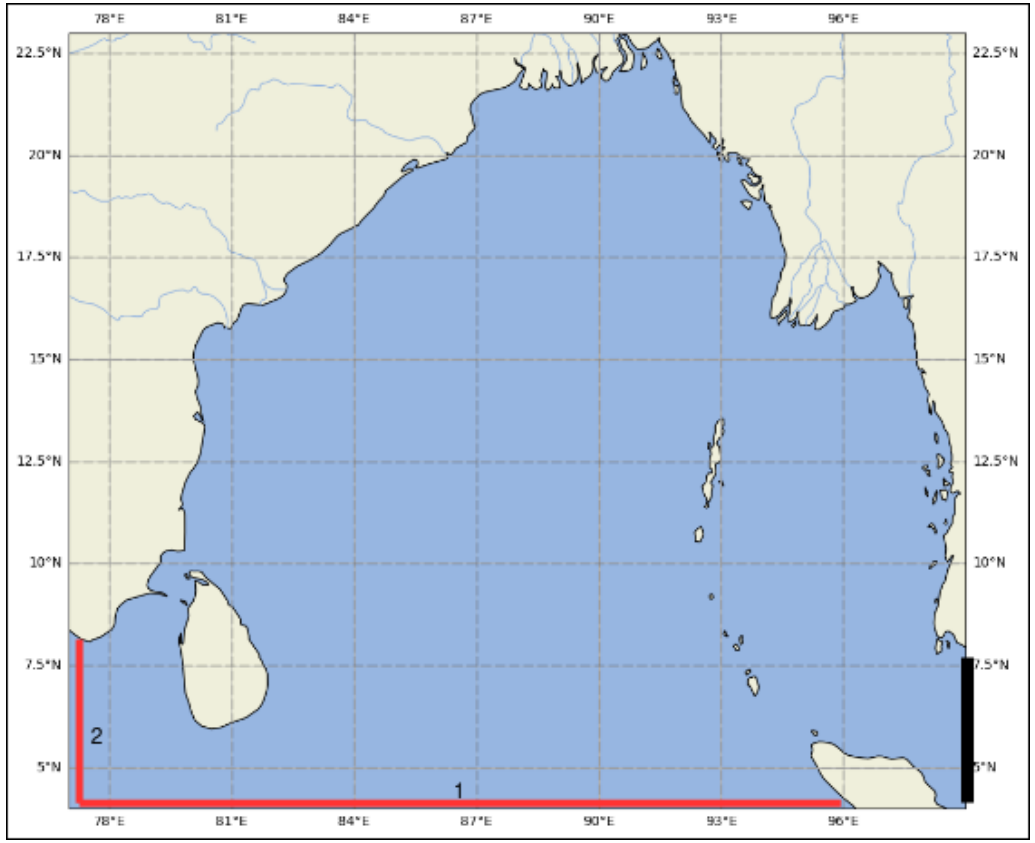
- **Geophysical Fluid Dynamics Laboratory (GFDL) MOM6**
- publicly available in the NOAA-GFDL public domain. (GIT)
- Modular ocean model version 6 (MOM6) is a hydrostatic, primitive equation, free surface,Boussinesq ocean model with **ALE vertical grid remapping** to use any kind of vertical coordinates and generalized orthogonal horizontal coordinates.
- Equations governing ocean dynamics and thermodynamics are discretized on a fixed eulerian grid, with **Arkawa C grid** defining the horizontal arrangement of model variables


Model Build
Grid system
Initial conditions
Forcing
boundary conditions
Vgrid
Hgrid
Topo
HYCOM model output as initial conditions
ERA5 reanlysis
JRA55
Open boundary conditions
Open boundary conditions
FRE_NC tools
41 level HYCOM single time 2012
- 2m temp
- u10,v10
- precipitation
- runoff
- Specific humidity
- SLP
- downward longwave flux
- downward shortwave flux
Fake rigid boundary
- edited topography
open boundary conditions
- MOM5 Indian ocean model output



Domain

- 0.062 degrees resolution
- 4N , 25N and 77E to 99E
- 1-min ETOPO1
- 41 levels vertical resolution (HYCOM)
- max depth of 5000m



Boundary Conditions

- 3 boundaries were considered
- One closed and two open boundaries
- The input data for boundaries are from Indian ocean model simulation (MOM5)

Track and progress

main · 2 branches · 1 tag · Go to file · Add file · Code

nmathewa present — 25e5d6d 15 minutes ago — 584 commits

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post	present	15 minutes ago
prepro	obc_west	3 days ago
references	obc2_pynotes	2 months ago
scripts	Merge pull request #20 from nmathewa/dependabot/pip/scripts/mom6n…	7 days ago
summs	present	15 minutes ago
wiki	prepro.md	7 days ago
.gitignore	update	3 months ago
README.md	Update README.md	8 days ago
Screenshot from 2021-11-17 07-57-…	map upadete	2 days ago

README.md

About

MOM6 development

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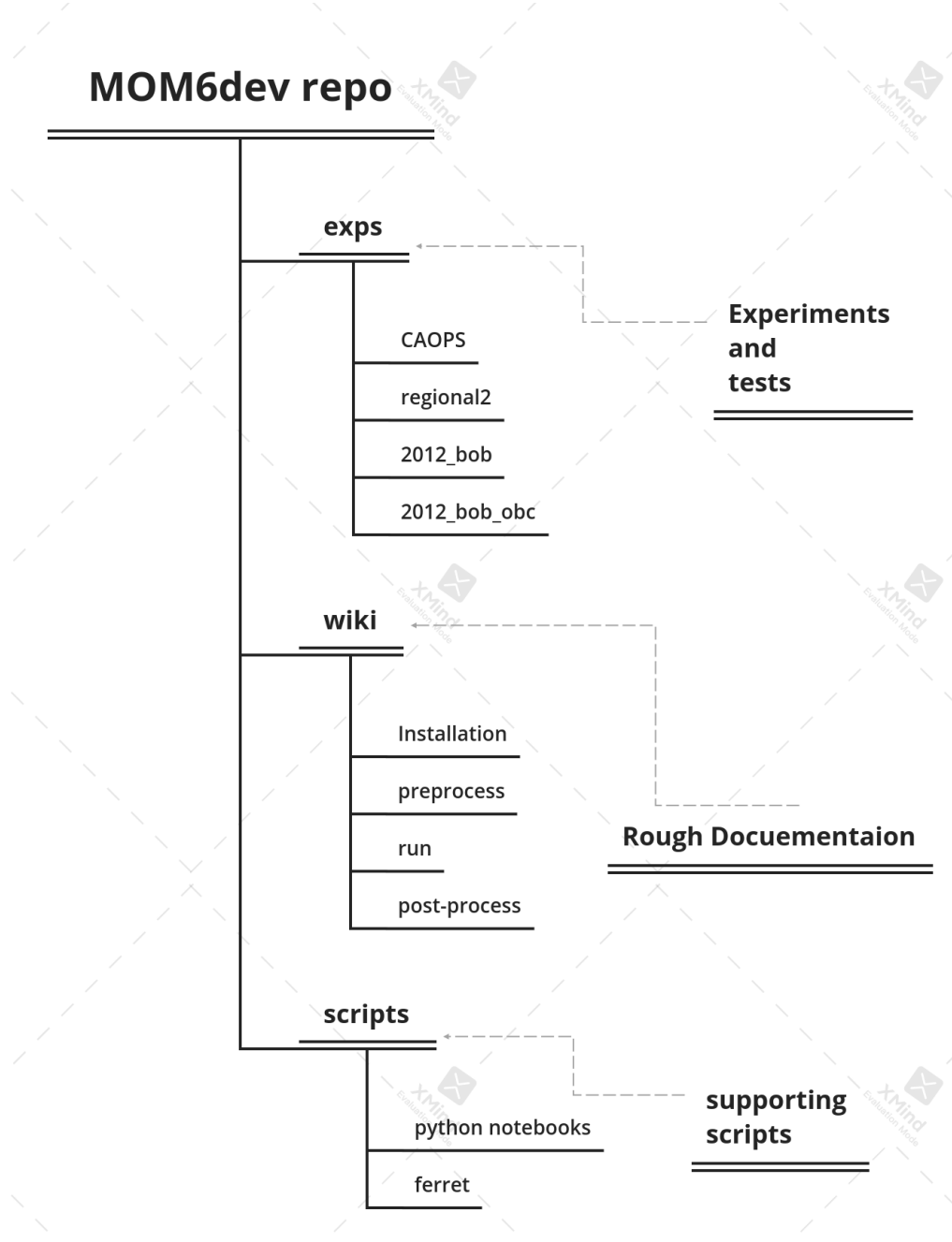
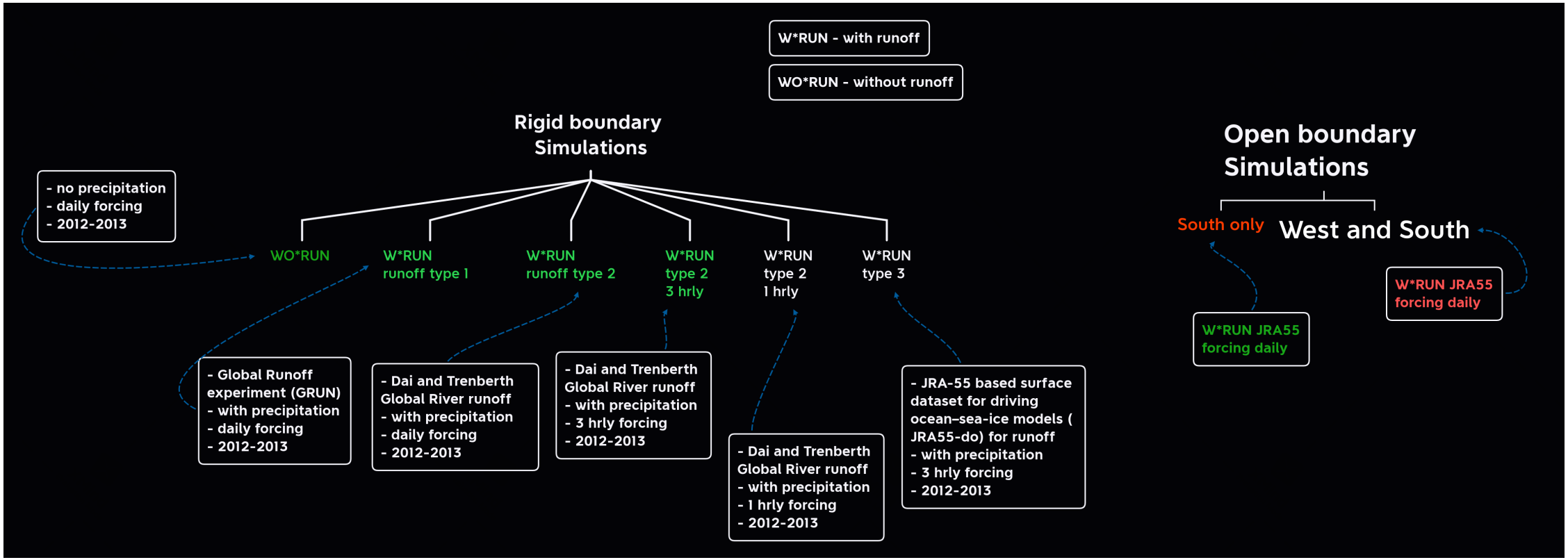
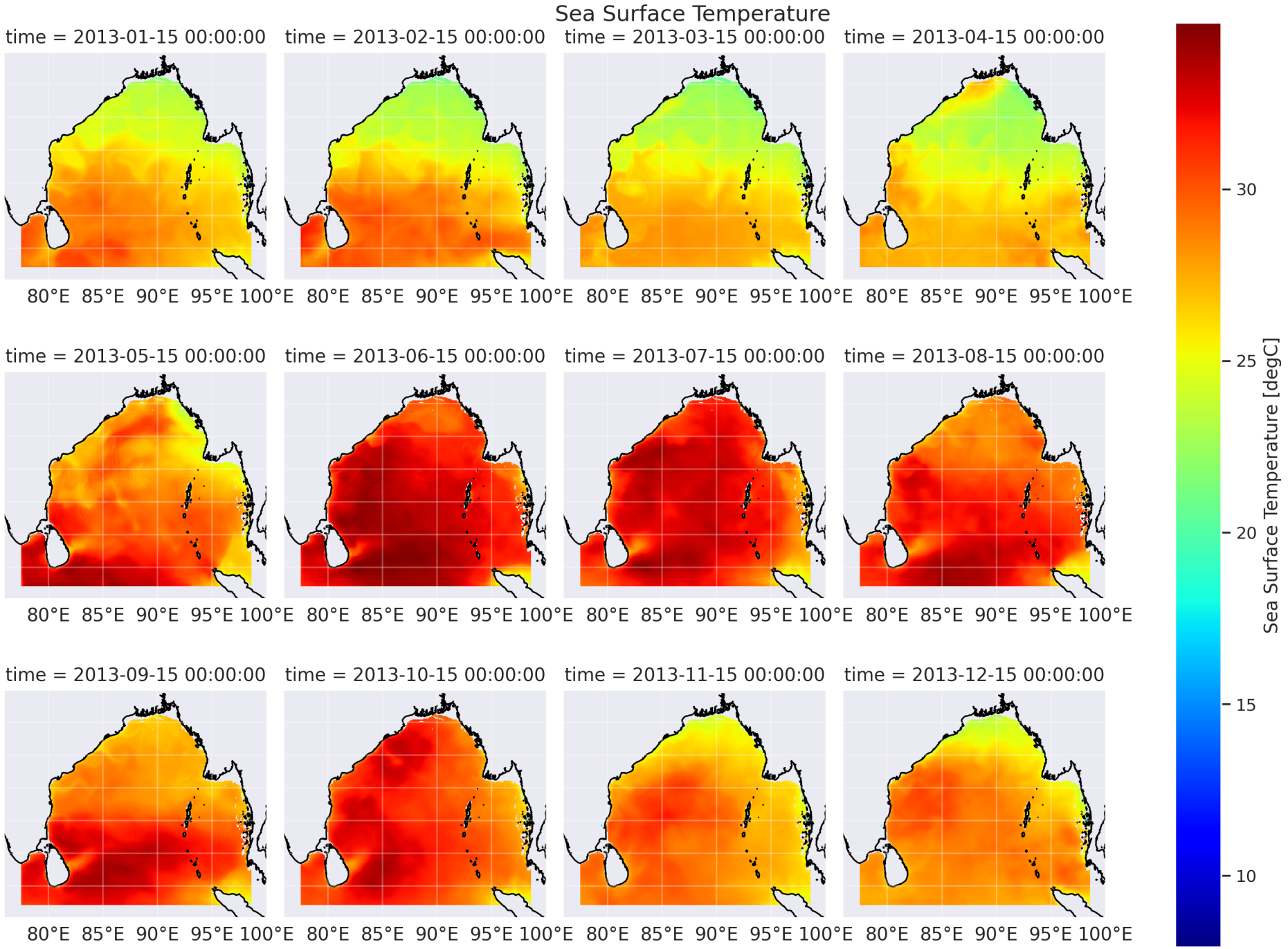

MOM6dev repo
exps
CAOPS
regional2
2012_bob
2012_bob_obc
Experiments and tests
wiki
Installation
preprocess
run
post-process
Rough Docuementaion
scripts
python notebooks
ferret
supporting scripts

Overview of simulations

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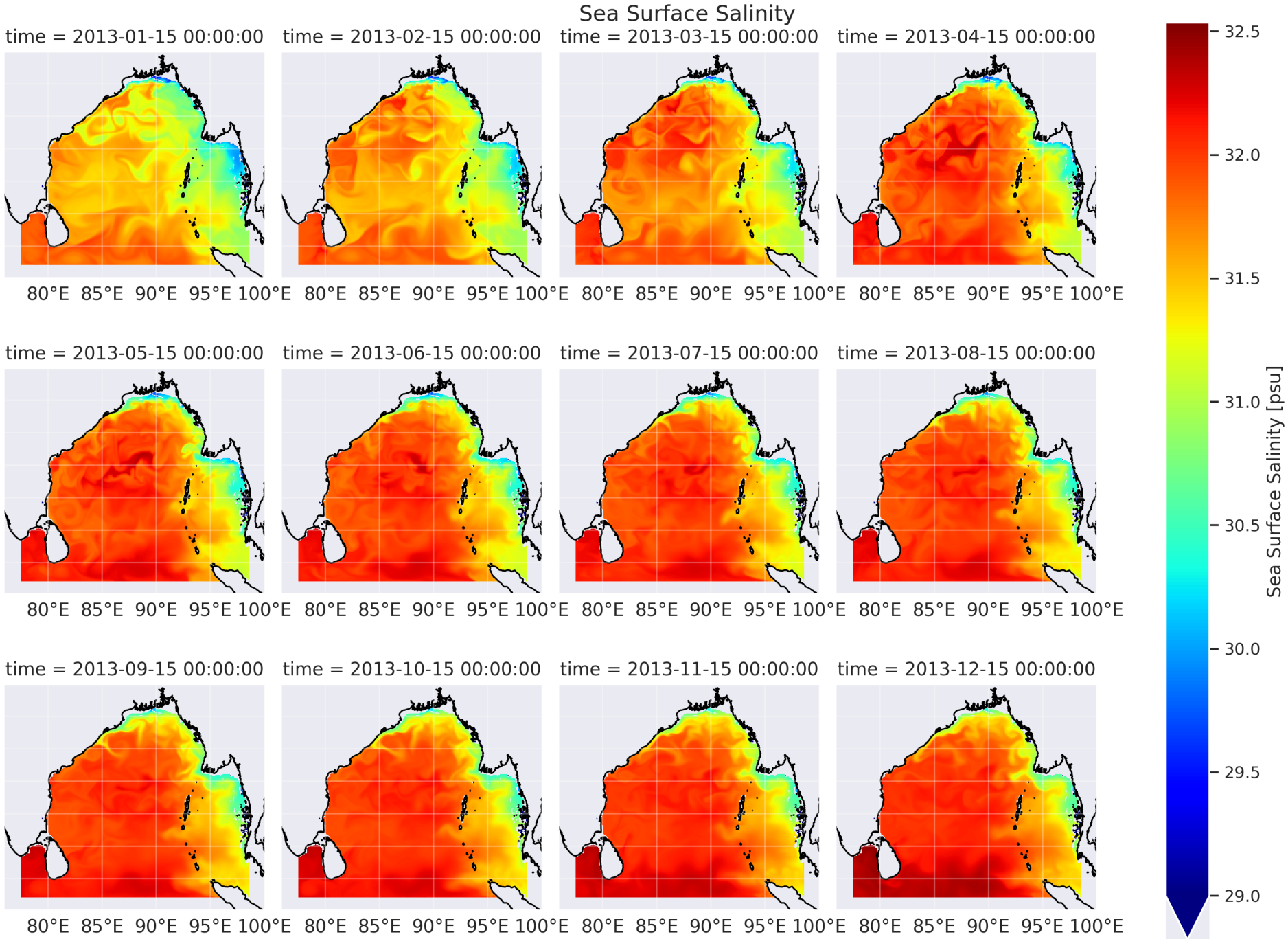
time = 2013-04-15 00:00:00
time = 2013-05-15 00:00:00
time = 2013-06-15 00:00:00
time = 2013-07-15 00:00:00
time = 2013-08-15 00:00:00
time = 2013-09-15 00:00:00
time = 2013-10-15 00:00:00
time = 2013-11-15 00:00:00
time = 2013-12-15 00:00:00
80°E 85°E 90°E 95°E 100°E
Sea Surface Temperature [degC]
30
25
20
15
10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time = 2013-07-15 00:00:00
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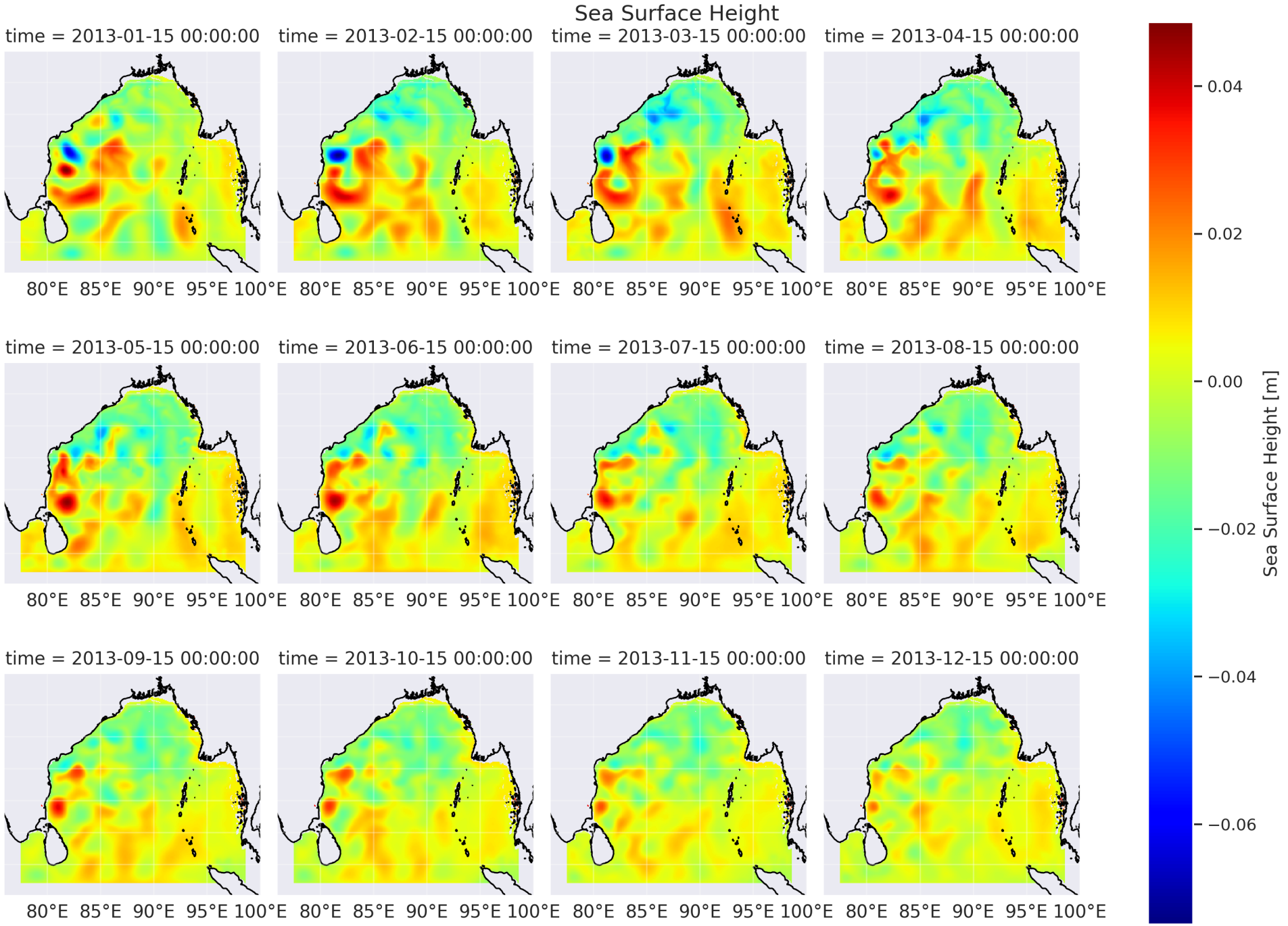
time = 2013-09-15 00:00:00
time = 2013-10-15 00:00:00
time = 2013-11-15 00:00:00
time = 2013-12-15 00:00:00
80°E 85°E 90°E 95°E 100°E
32.5
32.0
31.5
31.0
30.5
30.0
29.5
29.0
Sea Surface Salinity [psu]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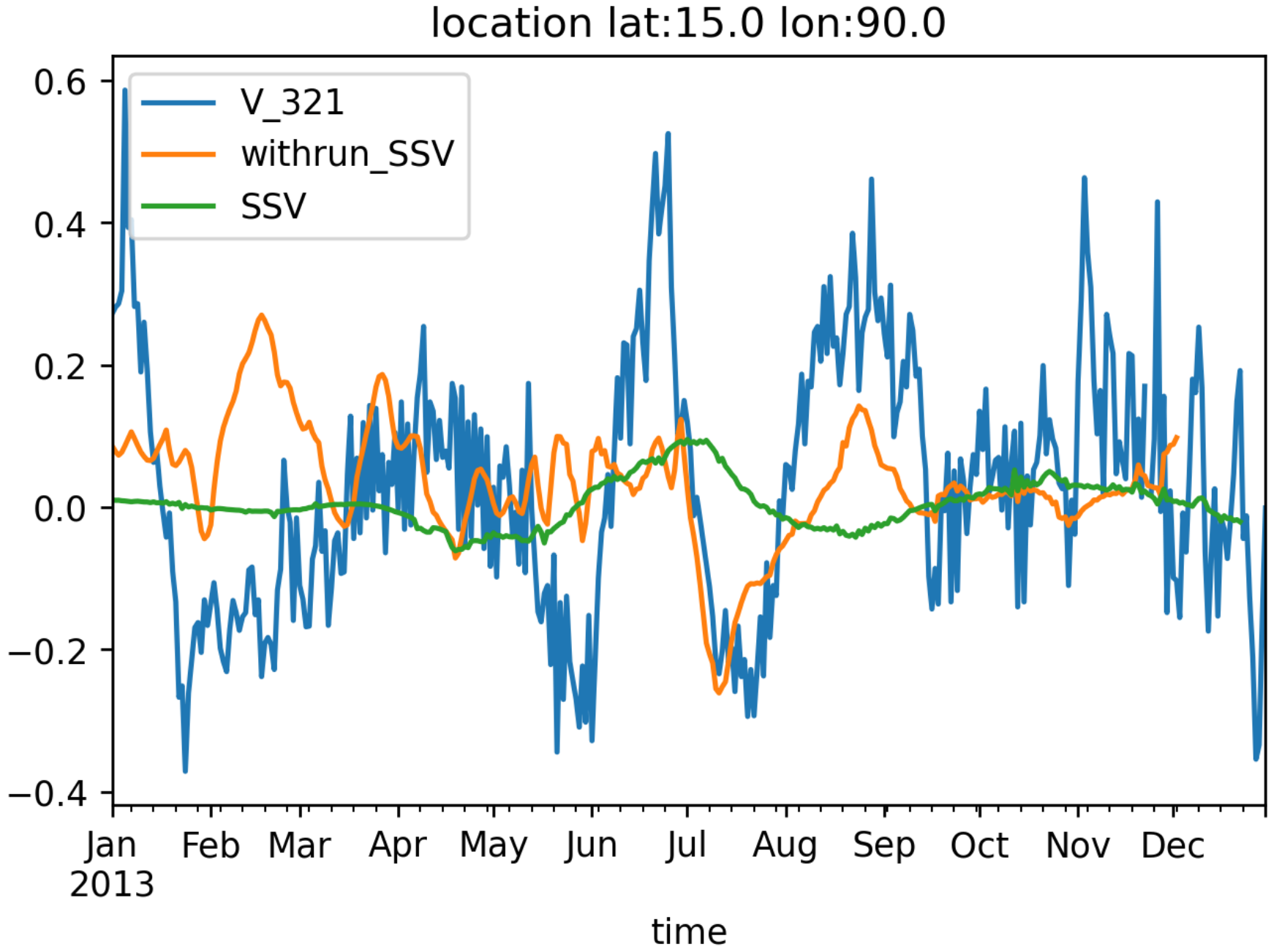
time = 2013-09-15 00:00:00
time = 2013-10-15 00:00:00
time = 2013-11-15 00:00:00
time = 2013-12-15 00:00:00
80°E 85°E 90°E 95°E 100°E
0.04
0.02
0.00
−0.02
−0.04
−0.06
Sea Surface Height [m]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V_321
withrun_SSV
SSV
0.6
0.4
0.2
0.0
−0.2
−0.4
Jan
2013
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
time

Next steps

Short term

- A good amount of experimentation's needed with open boundary
- comparison of namelist and physics option with previous runs
- using 1 hourly high resolution forcing (temp,slp,u and v)

Long term

- Increasing the resolution and tests