Useful doc for MOM6

https://xgcm.rtfd.io

XGCM 0.3 Site ▾ Page ▾ « MITgcm ECCOv4 Example Generate miss... »

Getting started with xgcm for MOM6

- xgcm grid definition
- A note on geographical coordinates
- Vorticity computation
- Plotting

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GETTING STARTED WITH XGCM FOR MOM6

- MOM6 variables are staggered according to the Arakawa C-grid
- It uses a north-east index convention
- center points are labelled (xh, yh) and corner points are labelled (xq, yq)
- important: variables xh/yh, xq/yq that are named "nominal" longitude/latitude **are not** the true geographical coordinates and are not suitable for plotting (more later)

See indexing for details.

[1]:
```
import xarray as xr
from xgcm import Grid
import warnings
import matplotlib.pylab as plt
from cartopy import crs as ccrs
import numpy as np
```

[2]:
```
%matplotlib inline
warnings.filterwarnings("ignore")
```

For this tutorial, we are going to use sample data for the $\frac{1}{2}^{\circ}$ global model OM4p05 hosted on a GFDL thredds server:

[3]:
```
dataurl = 'http://35.188.34.63:8080/thredds/dodsC/OM4p5/'

ds = xr.open_dataset(f'{dataurl}/ocean_monthly_z.200301-200712.nc4',
                     chunks={'time':1, 'z_l': 1}, drop_variables=['average_DT',
                                                                  'average_T1',
                                                                  'average_T2'],
                     engine='pydap')
```

[4]:
```
ds
```

[4]:
```
<xarray.Dataset>
Dimensions:       (nv: 2, time: 60, xh: 720, xq: 720, yh: 576, yq: 576, z_i: 36, z_l
Coordinates:
  * nv            (nv) float64 1.0 2.0
  * xh            (xh) float64 -299.8 -299.2 -298.8 -298.2 ... 58.75 59.25 59.75
  * xq            (xq) float64 -299.5 -299.0 -298.5 -298.0 ... 59.0 59.5 60.0
```

Demo time

notebook available at

https://github.com/raphaeldussin/presentations/blob/master/MOM6_Webinar_May11_2020/demo_overflows.ipynb