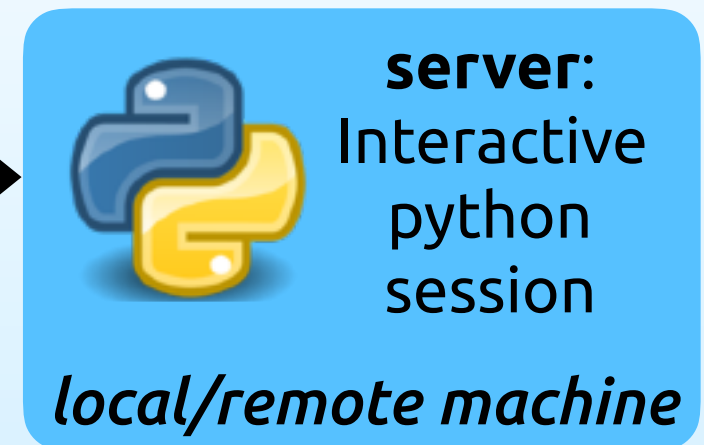
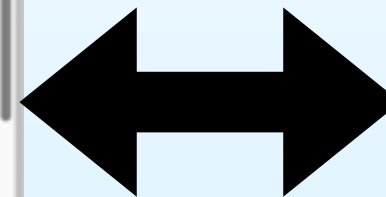
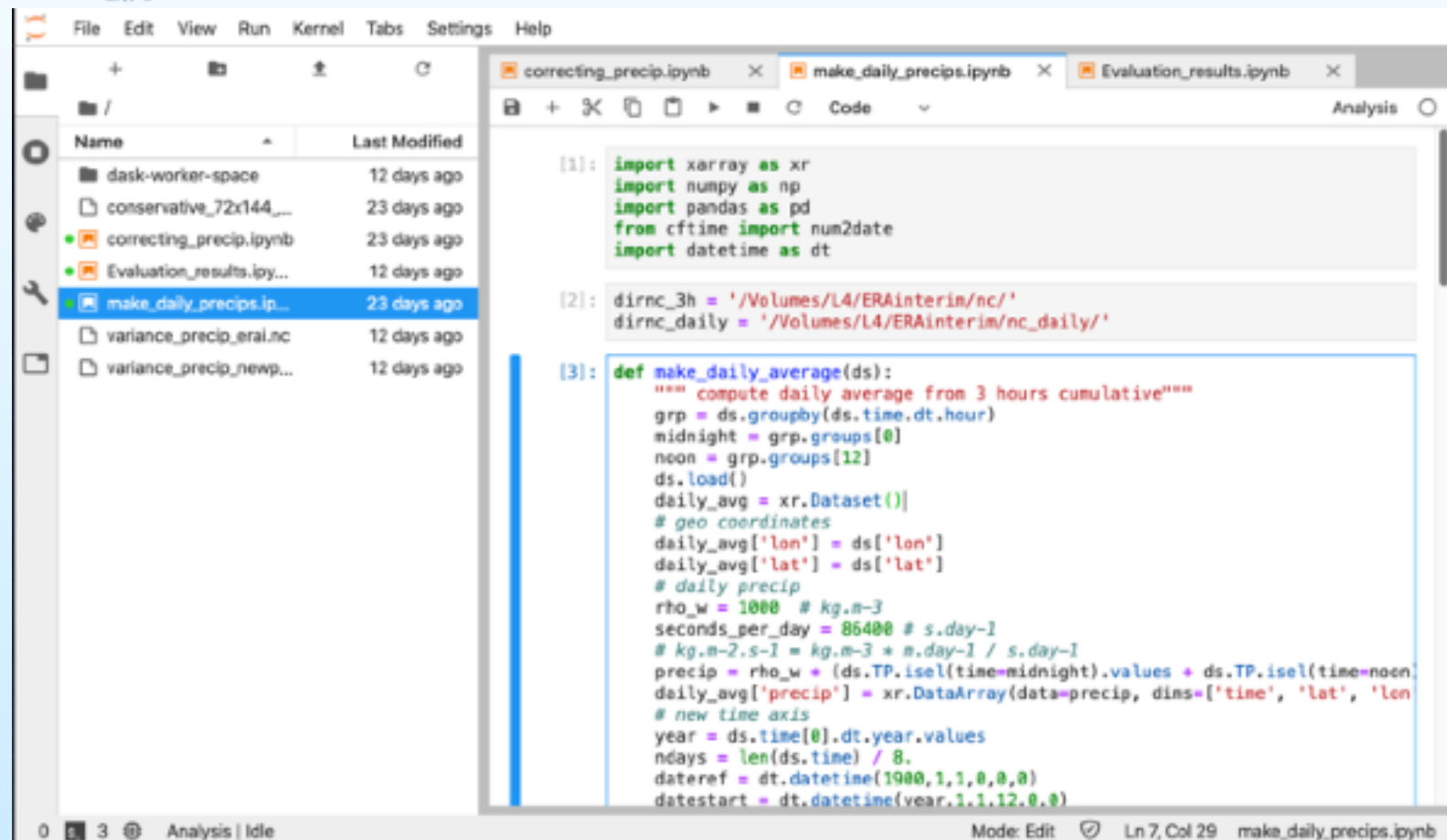


Jupyter ecosystem



client: local web browser

Jupyterlab = more functional IDE

Jupyterhub = multi-user Jupyter server

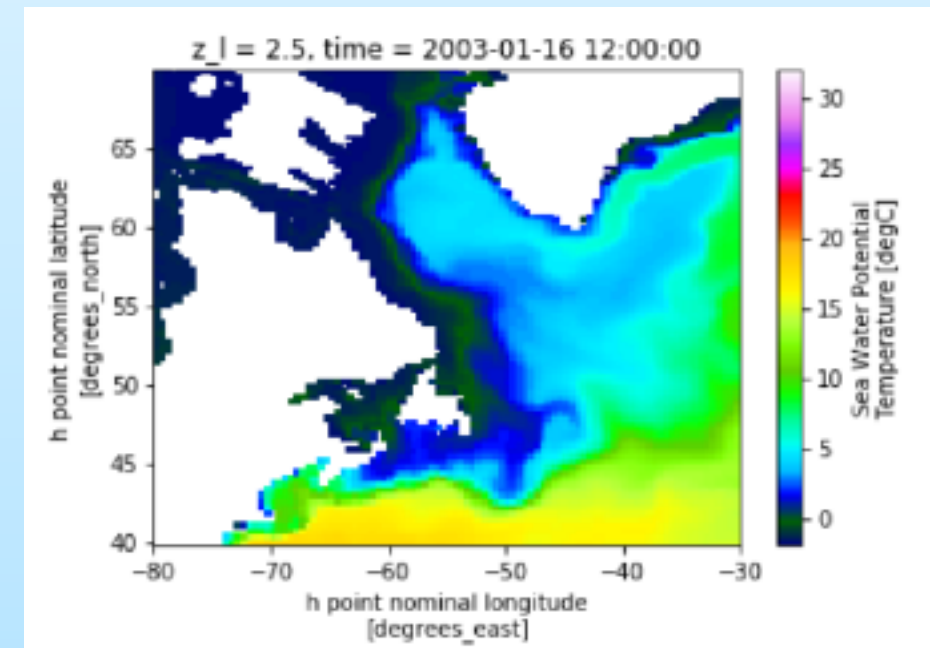
e.g. jupyterhub.ucar.edu, ocean.pangeo.io

xarray: “label-aware” arrays

- Philosophically similar to netcdf data model
- Dataset = set of DataArrays
- Datasets can be build from N files
- DataArrays have labelled dimensions/coords
- We can use methods working on these labels

```
ds['thetao'].sel(xh=slice(-80,-30), yh=slice(40,70),  
                z_l=2.5, time='2003-01').plot(vmin=-2, vmax=32,  
                cmap='gist_ncar')
```

```
clim = ds.mean(dim='time')
```



- xgcm: adds staggered grid awareness to xarray