

Coriolis, Inertial Oscillations – EXERCISE

Go to <http://www.o3d.org/ROMS-Tutorial/tutorials.html>, and complete tutorials section 2 and 3.

1) Login into the cluster master node and compile the code using the script `CORIOLIS_compile` located in the `Applications` folder. Then go in the `roms-example/coriolis` folder and run the example using the cluster queuing system by executing `qsub run_model.pbs`. Wait for the model run to be completed. You can check the status of the model run by typing `qstat`. These instructions are shown in the tutorial of section 3.

2) Go in the `roms-example/matlib` directory and fire up MATLAB. Practice plotting the solution using the MATLAB files contained in that folder. Specifically I want you to reproduce and print the plots shown in the tutorial regarding the velocity timeseries and the drifter trajectory. The goal is to familiarize with the model output and MATLAB.

3) Now recompile the model but change the surface boundary conditions for the u and v momentum equations by adding a constant windstress of 0.0005 N/m^2 (NOTE: the model units are already in N/m^2). Run the model again and plot the drifter trajectories. How and why are they different from the case without windstresses?