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Notes on the WCOFS

**The experiment details:** Exp29: precipitation-evaporation included, no tides. No atm pressure loading (surface dynamical boundary condition is P=0).Columbia River discharge (and other rivers) are incorrect! DO NOT USE THIS IN THE AREA OF THE PLUME.

Time period is 1 Oct 2008 – 24 Dec 2014: Files 0001 – 2276. Each AVG file contains daily averaged zeta, u,v,temp, salt. And some other fields.

ocean\_time is in sec since 1-Jan-2008 00:00:00 UTC. File numbers correspond to days since the beginning of the run (file 0001 would correspond to 01-Oct-2008). E.g., check that 2070 corresponds to 1 Jun 2014.

**ROMS vertical discretization parameters:**

Vtransform=2;

Vstretching=4;

theta\_s=8; % parameter for stretching near surface

theta\_b=3; % parameter for stretching near bottom

Tcline=50;

N=40; % 40 vert layers

**Notes on interpolation**: the WCOFS grid is a regular grid in geographical coordinates in which the pole is moved to

**phi0=-57.6;**

**theta0=37.4;**

E.g., to interpolate to points LON1, LAT1 of your grid (or to observations), you first find local coordinates (x,y) of the rotated regular system using an analytical transformation (a matlab script is provided) and then do regular interpolation in terms of x,y.

An example interpolating T (matlab syntax):

lon\_rho=ncread(grdfile\_wcofs,'lon\_rho');

lat\_rho=ncread(grdfile\_wcofs,'lat\_rho');

[nx,ny]=size(lon\_rho);

T=ncread(fname,’temp’,[1 1 N 1],[nx ny 1 1]);

T=double(squeeze(T));

regrid\_YES=1;

[x\_rho,y\_rho]=...

wcofs\_lonlat\_2\_xy(lon\_rho,lat\_rho,phi0,theta0,regridYES);

[x1,y1]=wcofs\_lonlat\_2\_xy(LON1,LAT1,phi0,theta0,0);

T1=interp2(y\_rho,x\_rho,T,y1,x1);