Curses, Gods and Summer Trailers

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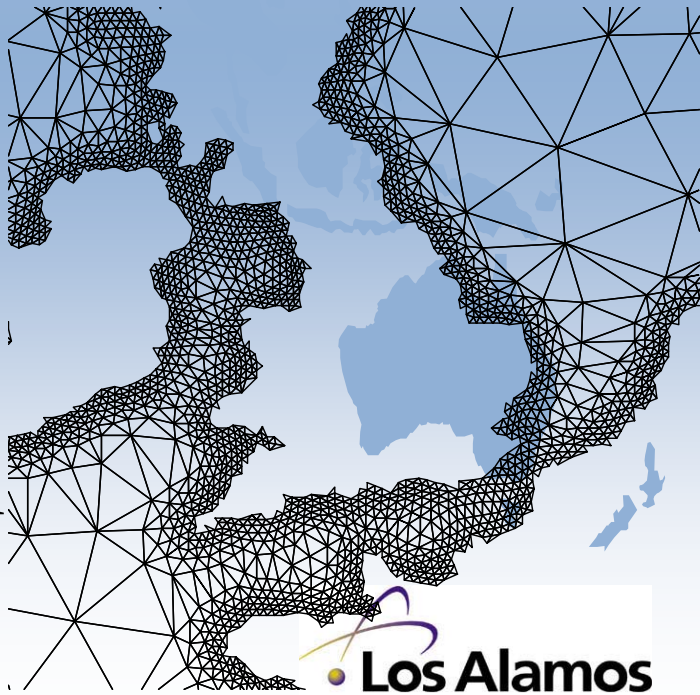
POP/HYPOP

- POP
  - New infrastructure
  - More bugs (exist in 2.0.1 too)
  - Required halo re-write
  - oceans11
- HYPOP
  - Vert grid infrastructure
  - Split complete
  - Incremental remapping advection
- Alternative horizontal grids

Go mbeadh cosa gloine fút
agus go mbrise an ghloine
May you have glass legs and
may the glass break



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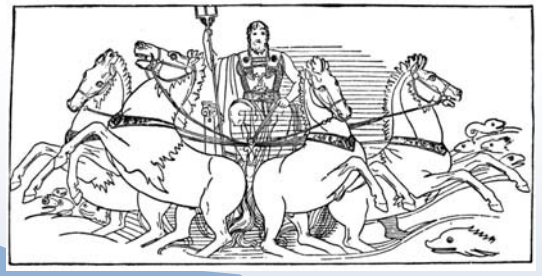
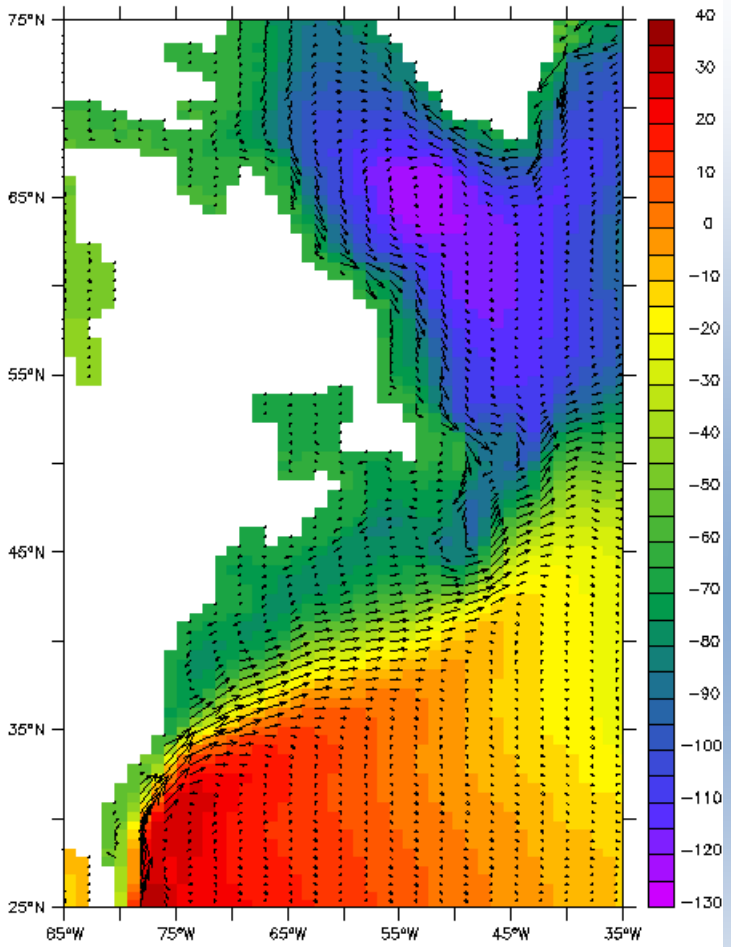
Neptune Effect

(Poseidon Adventure?, Llyr - darkness)

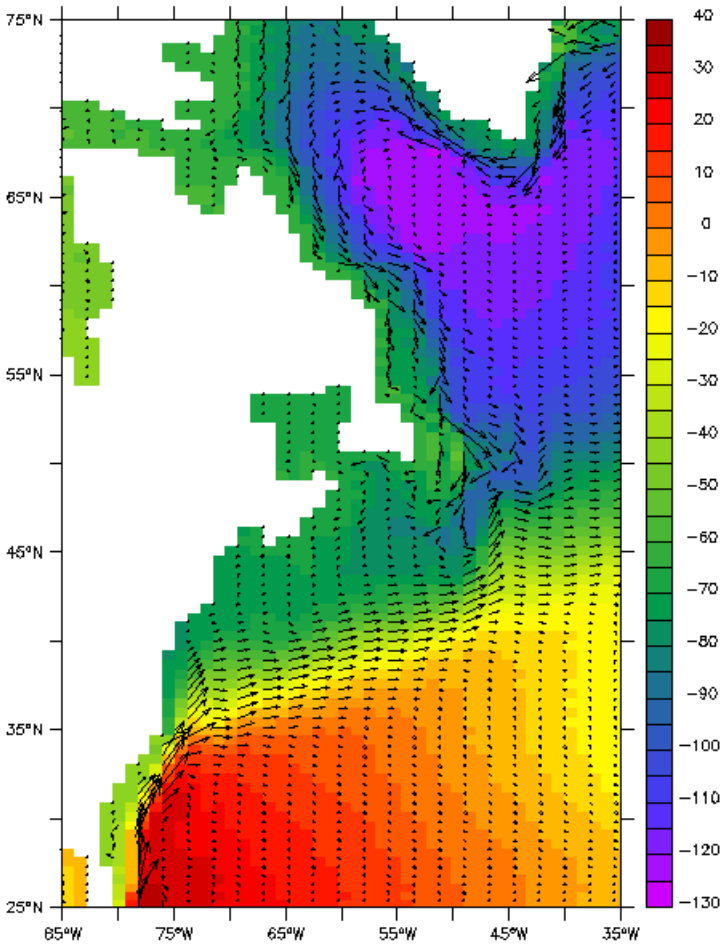


- $visc_{aniso}$ del2(u) + $visc_{neptune}$*del2(u-u*)
  - u* proportional to the topographic slope
  - etopo2 on the 1/30th degree grid--not model grid n
  - parameterizes eddy-topographic interactions seen in 1/10th degree models but are totally absent at 1 degree (Merryfield and Scott, 2007).
  - u* has a latitudinally dependent tapers to zero in the tropics (neptune depends on f).



Neptune

aniso



- better GS separation
- pretty nice northern recirculation
- aniso case is kind of noisy in the Lab Sea

- slightly different shape of the ssh in the subtropical gyre (C-shape more realistic?)
- stronger eastern boundary currents.
- apparently no degradation of the results

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On the grid dependence of lateral mixing parameterizations for global ocean simulations

Elizabeth Hunke [1], Mathew Maltrud, Matthew Hecht

Los Alamos National Laboratory, Los Alamos, New Mexico, USA

- To appear in Ocean Modelling
  - "Regardless of the mixing parameterization chosen, future global simulations should take into account variations in grid cell area, in order to prevent diffusion from dominating advection in the evolution of high latitude tracers and circulation."
  - Results to be shown in the Polar Working Group, Thursday morning (10:00-10:30)

Lateral Mixing in the Eddying Regime and a New Broad-Ranging Formulation

Matthew W. Hecht,[1] Elizabeth Hunke,[2] Mathew Maltrud,[2] Mark R. Petersen[1] and Beth A. Wingate[1]

For publication in Eddy-Resolving Ocean Modeling, AGU Geophysical Monograph Series (Hecht & Hasumi, Eds.)

- A New Prescription for Lateral Viscosity
  - Biharmonic for noise control
  - Laplacian for Munk Layer
  - Scales to 1º (or even 3º) resolution
  - Intended to be compatible with anisotropic forms
- Non-Dissipative Parameterization of Turbulence for Enhanced Variability: LANS-α
  - For enhanced levels of mesoscale eddy variability at what would otherwise be “eddy-admitting” resolution
  - Will this provide an efficient means to perform climate modeling with a qualitatively improved ocean?