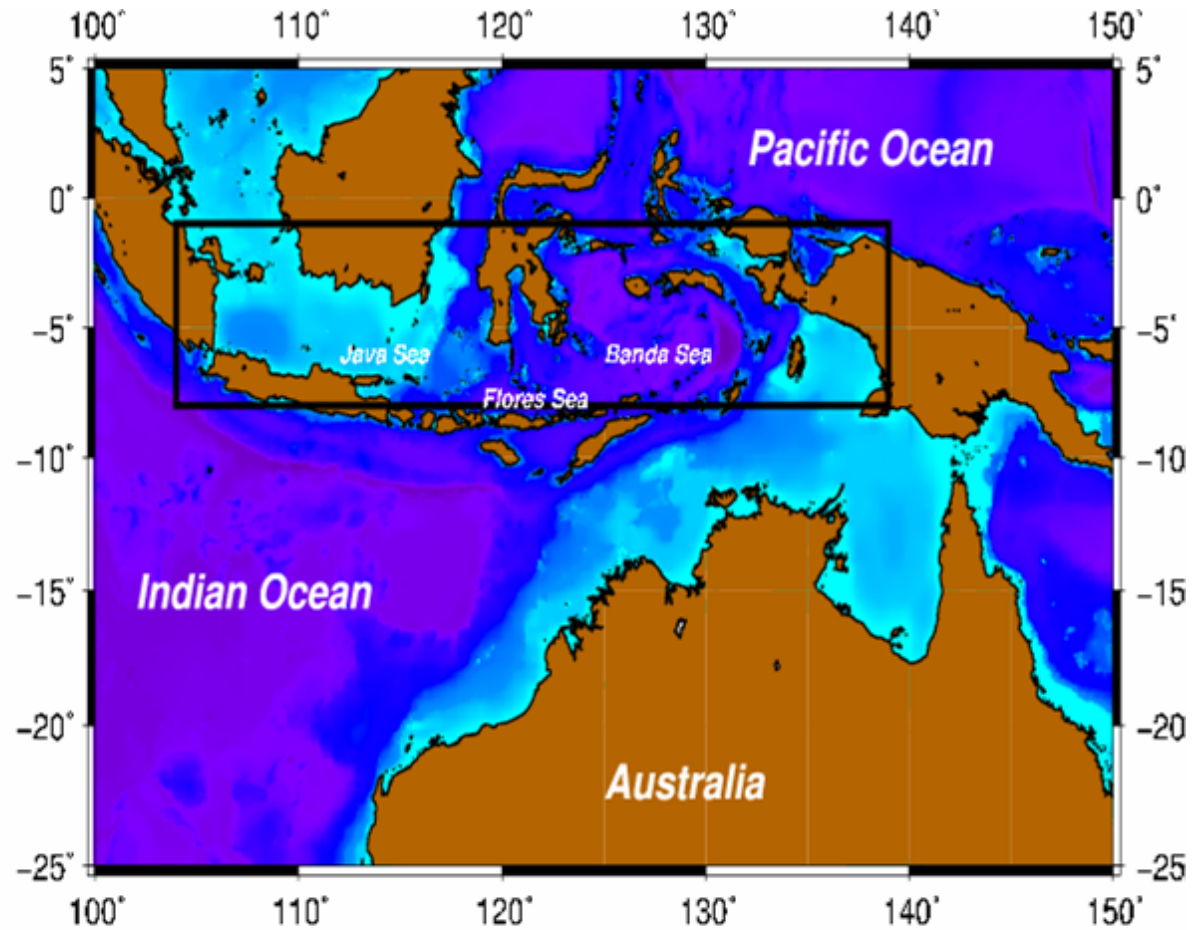


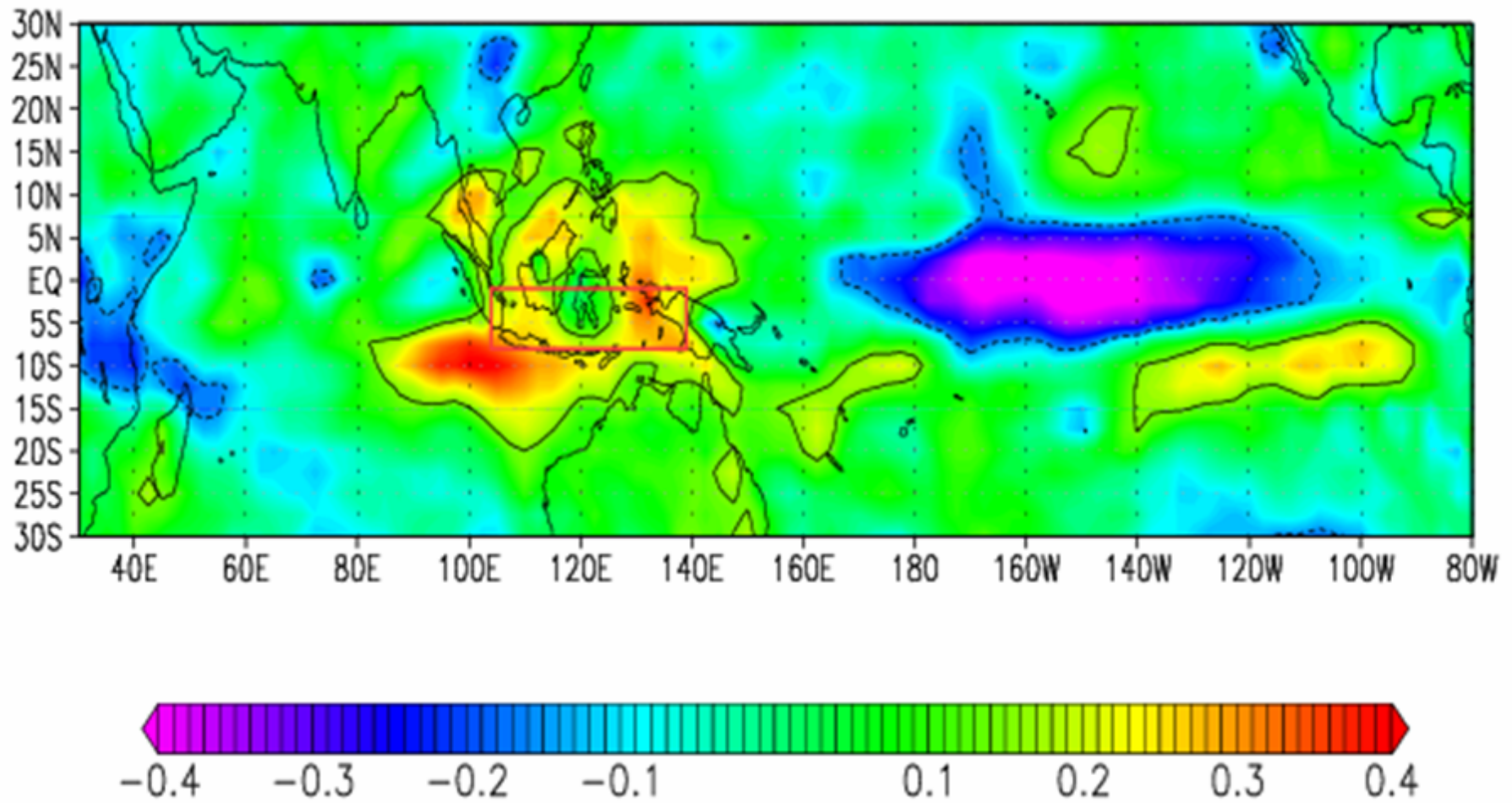
Banda Sea mixing and Climate

Markus Jochum, NCAR, 6/19/07

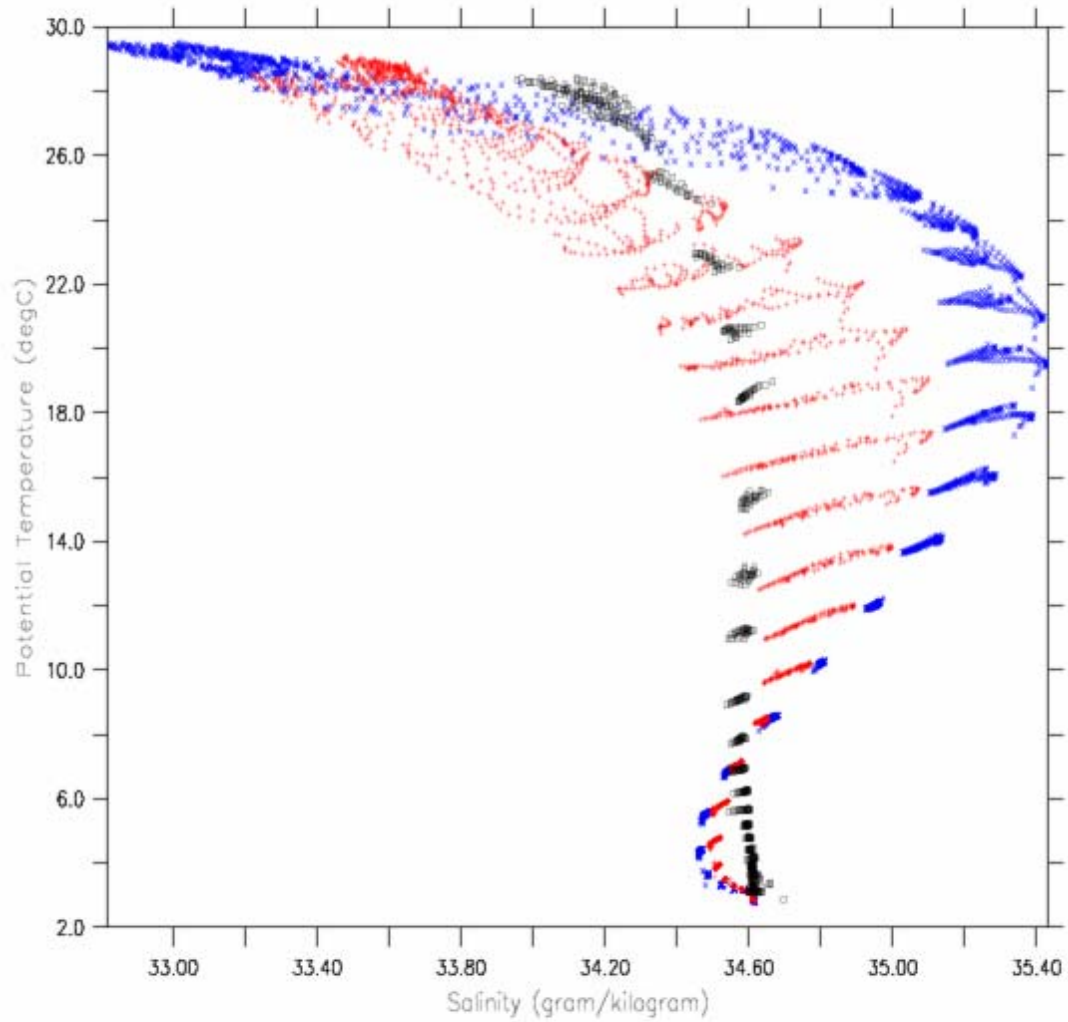
The strength of the Austral-Asian Monsoon depends
on the tidal mixing in the Indonesian Seas.



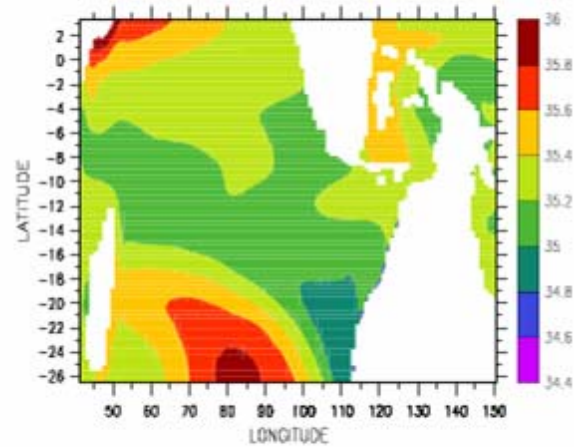
In the rectangular box the background value of vertical mixing in the ocean has been increased from the typical 0.1 cm²/s to the observed 1 cm²/s



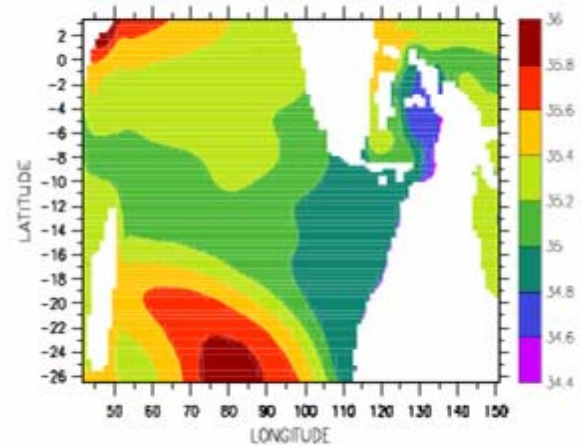
The correlation between SST in the box and precipitation 3 months later (based on NCEP).



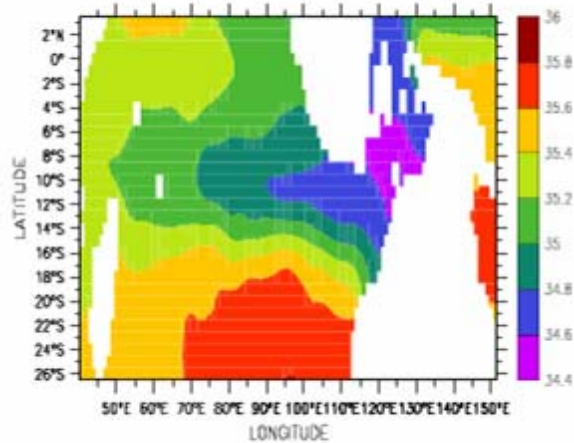
TS diagram of Banda Sea water from observations (black), control (blue) and increased mixing (red).



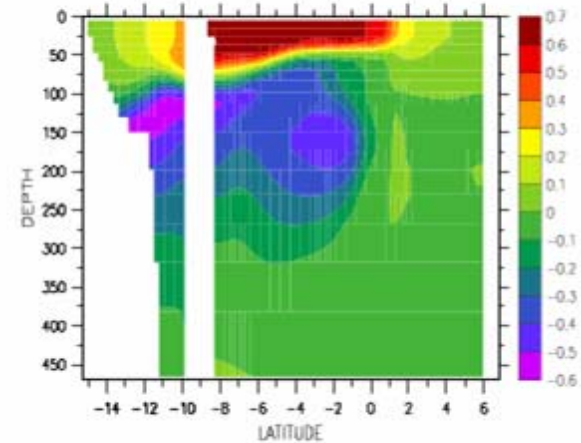
a) Salinity maximum, exp. KLOW



b) Salinity maximum, exp. K OBS

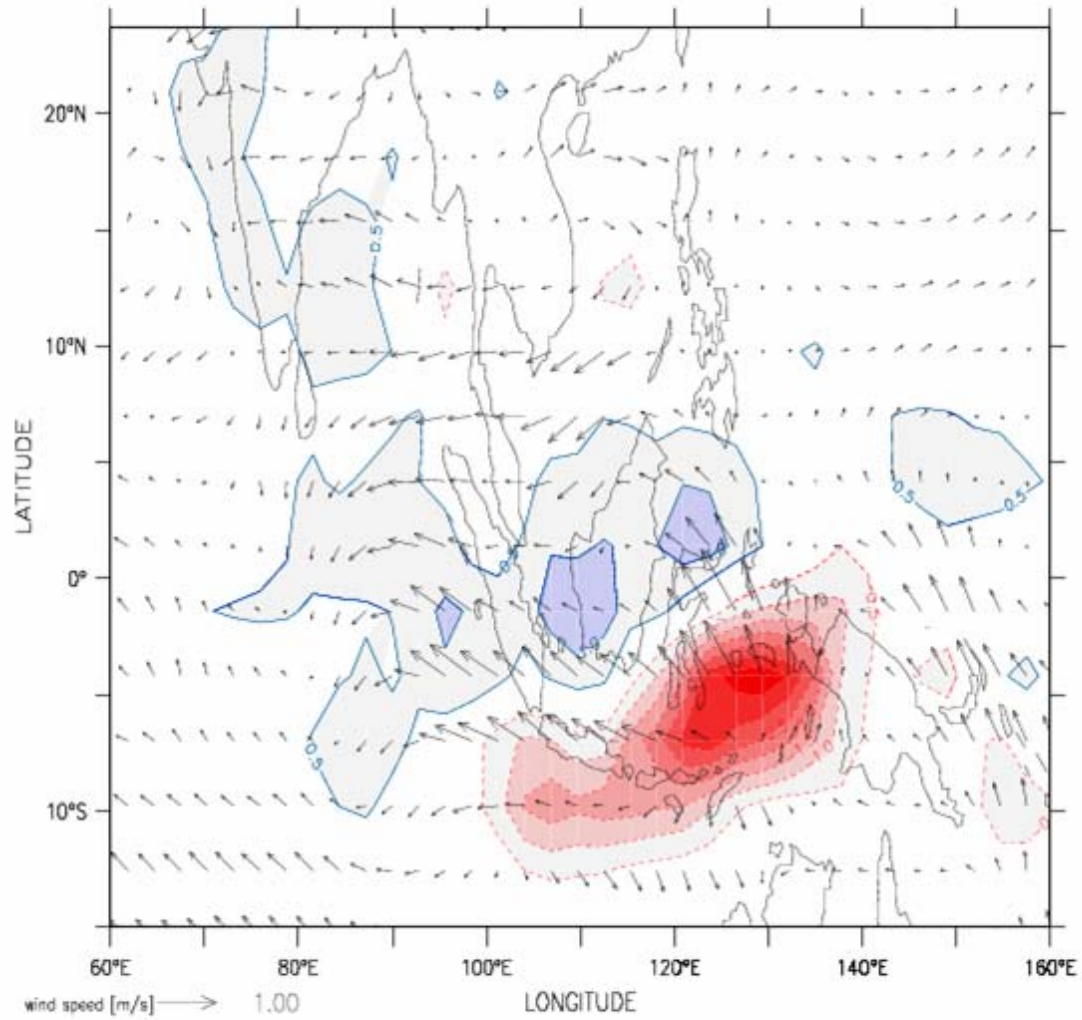


c) Salinity maximum, observations



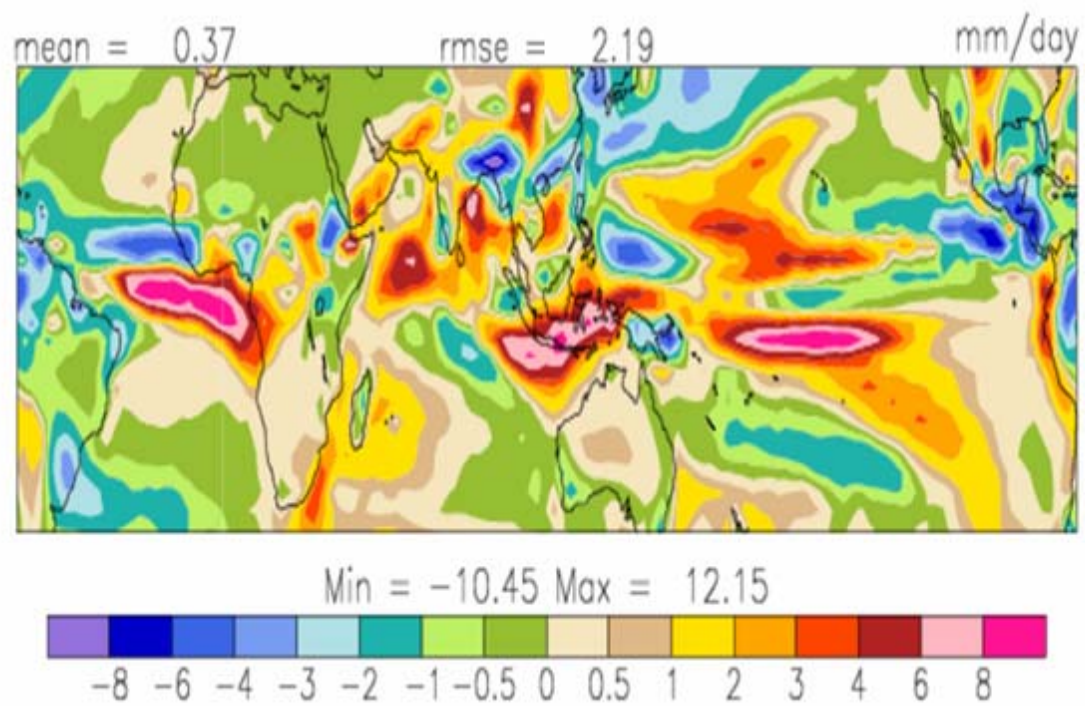
d) Salinity difference along 125 E

Salinity at depth of the salinity maximum between 100 m and 500 m (a-c).
 Salinity difference between observed mixing and control (d).

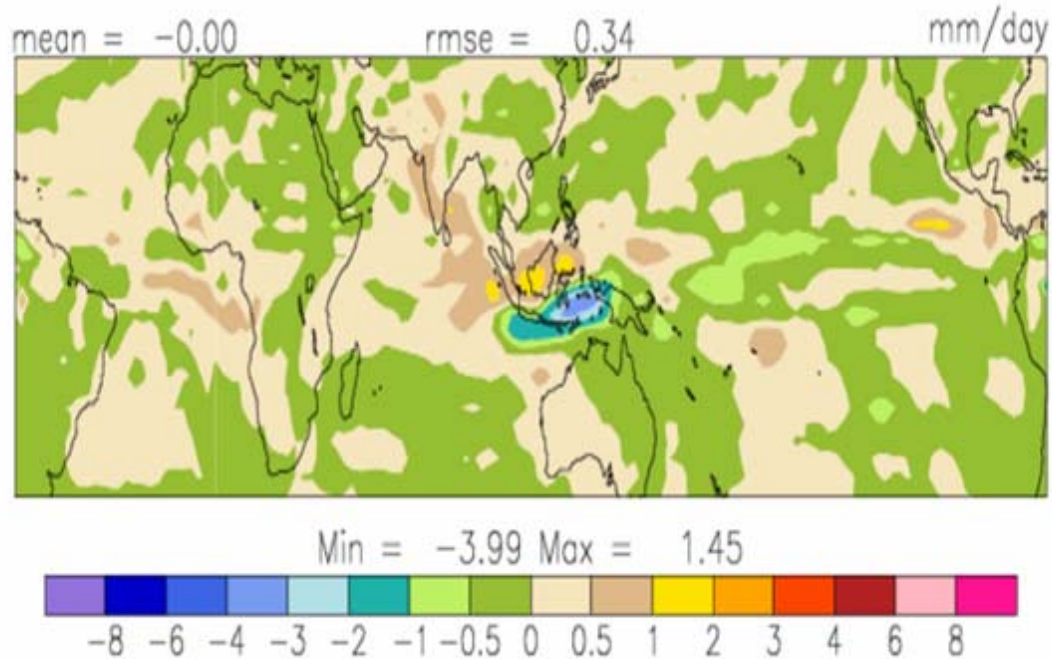


Difference in precipitation and surface wind for JJA.

Tropical rainfall
biases in T42x1.



Difference in
rainfall between
high mixing and
control.



Conclusions

- tidal mixing strongly affects the monsoon
- In general, climate relevant oceanographic research should focus on small biases in warm water, rather than large biases in cold water
- future work will extend Steve's tidal mixing scheme to the surface and focus on areas of large tidal mixing in western warm pools