

Process Modelling

Main Objectives:

- Role of Atmospheric Variability in Mode Water
- Compute Formation Rates
- Mode Water Dynamics
- Fate of New Waters

Background:

Existing theories, which have some strengths,
are steady

mode water existence is not rooted in seasonality

Role of seasonal cycle -

Role of atmospheric synopticity

Tools:

MITgcm - deployed in simple basin,
Under simple mean wind stress pattern

1500 m deep

High resolution vertically, and eventually
Horizontally

exploit non-hydrostatic capability of
MITgcm

Three (Four) experiment tracks:

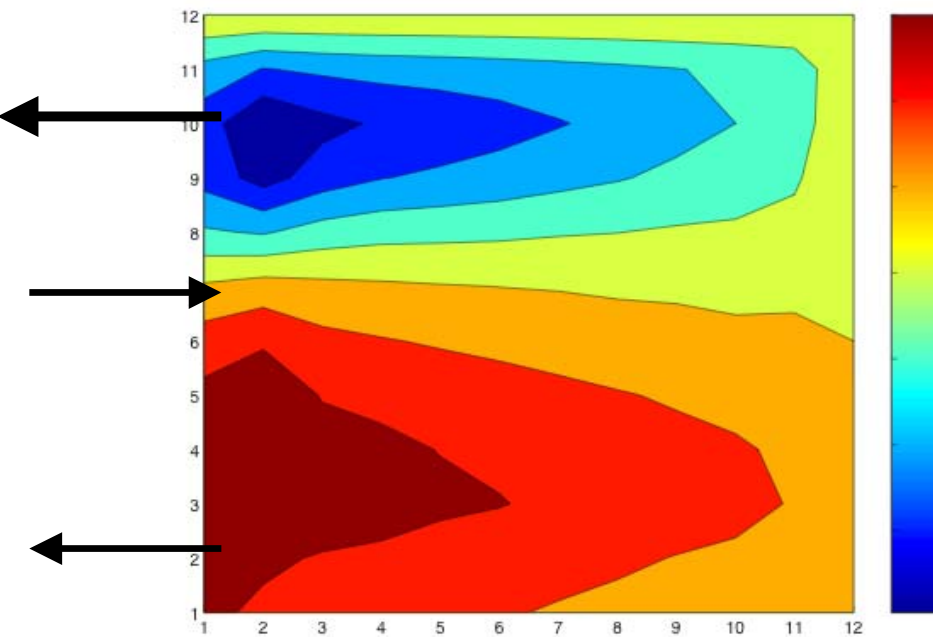
1. Steady Surface Conditions
2. Seasonal forcing
3. Synoptic forcing - no seasons
4. Synoptic forcing - seasons

Analysis -

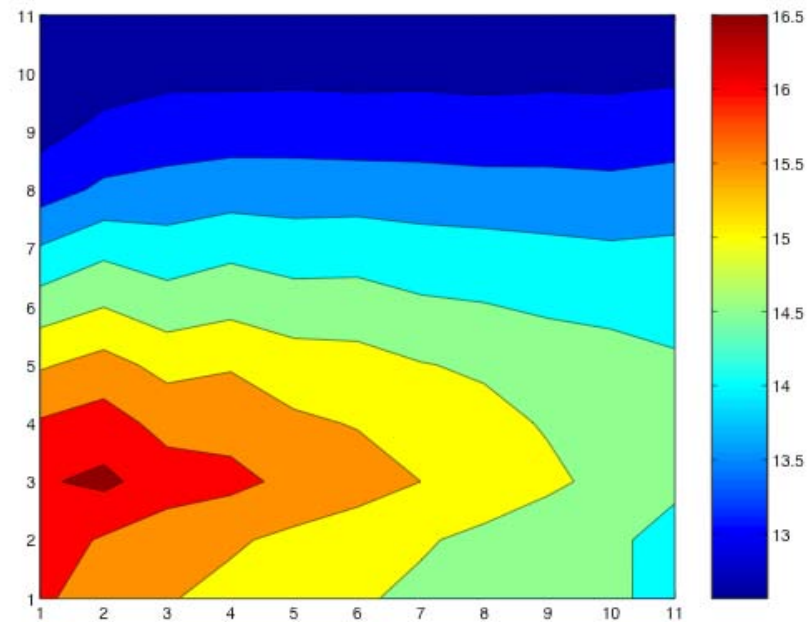
Walin budgets for 'surface layer' and interior separately -

comparisons across experiments tracks
viz mode water properties.

Force according to atmospheric boundary layer model



ssh



300m T