

The impact of climate change on submesoscale activity

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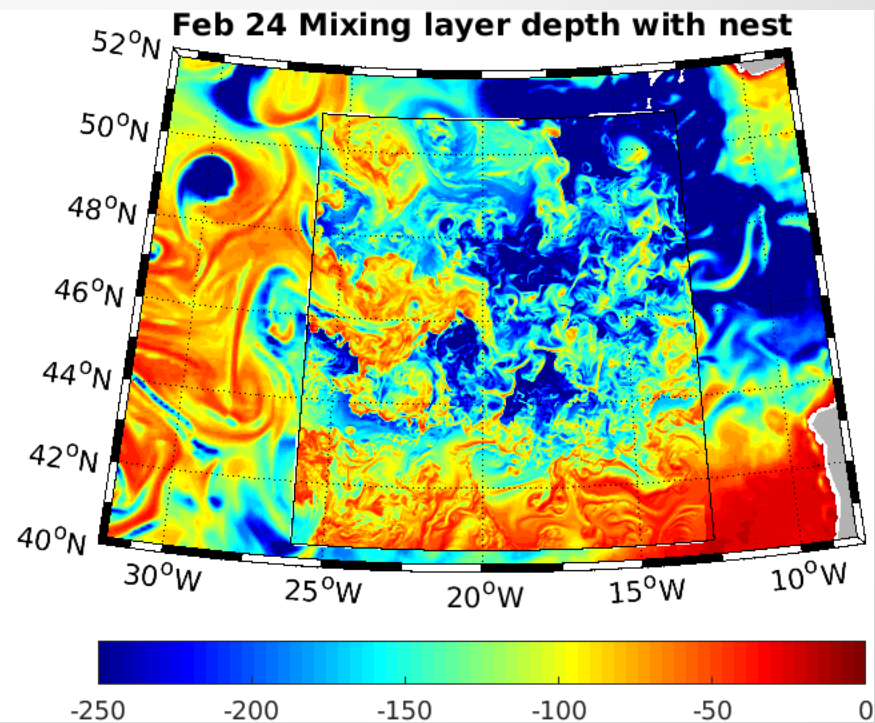
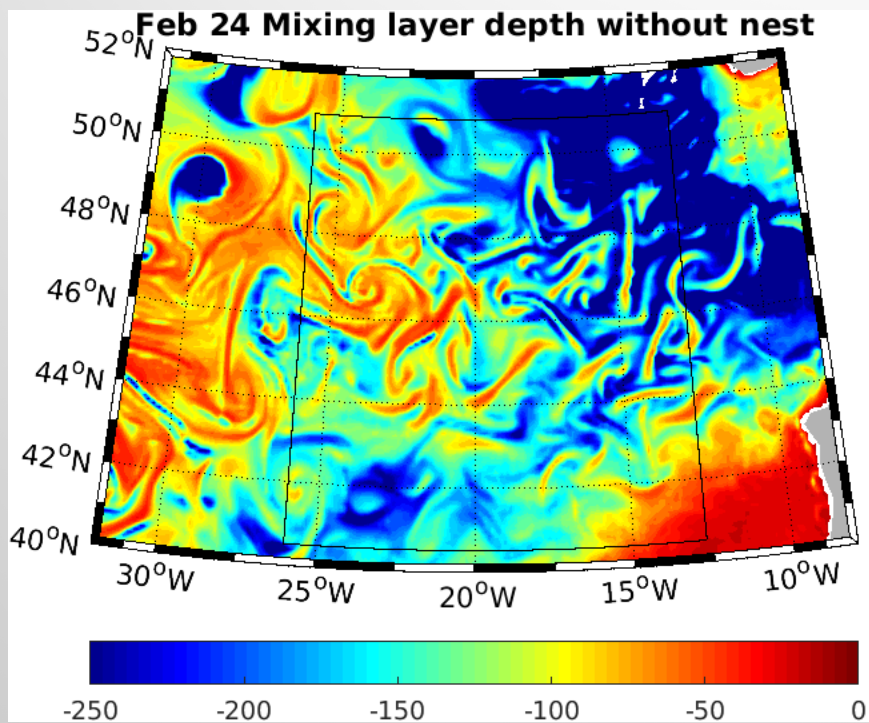
Dan Whitt, Matthew Long, Frank Bryan (NCAR)

We conjecture that under global warming

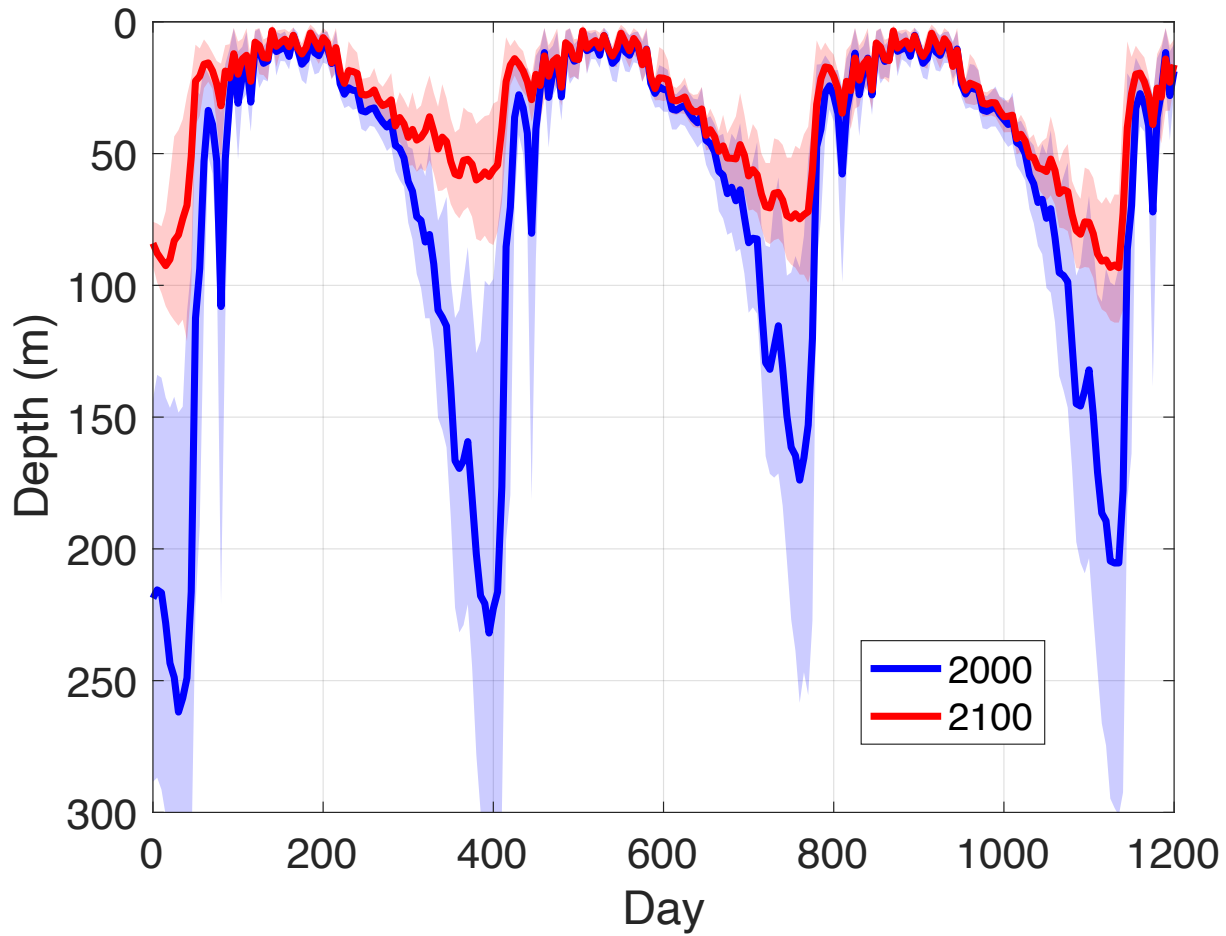
- ❑ An increase in the stratification of the near-surface ocean and decrease in mixed layer depth will lead to a reduction in submesoscale activity
- ❑ The reduction in submesoscale activity will change the spatial and temporal structure of vertical heat and nutrient fluxes.

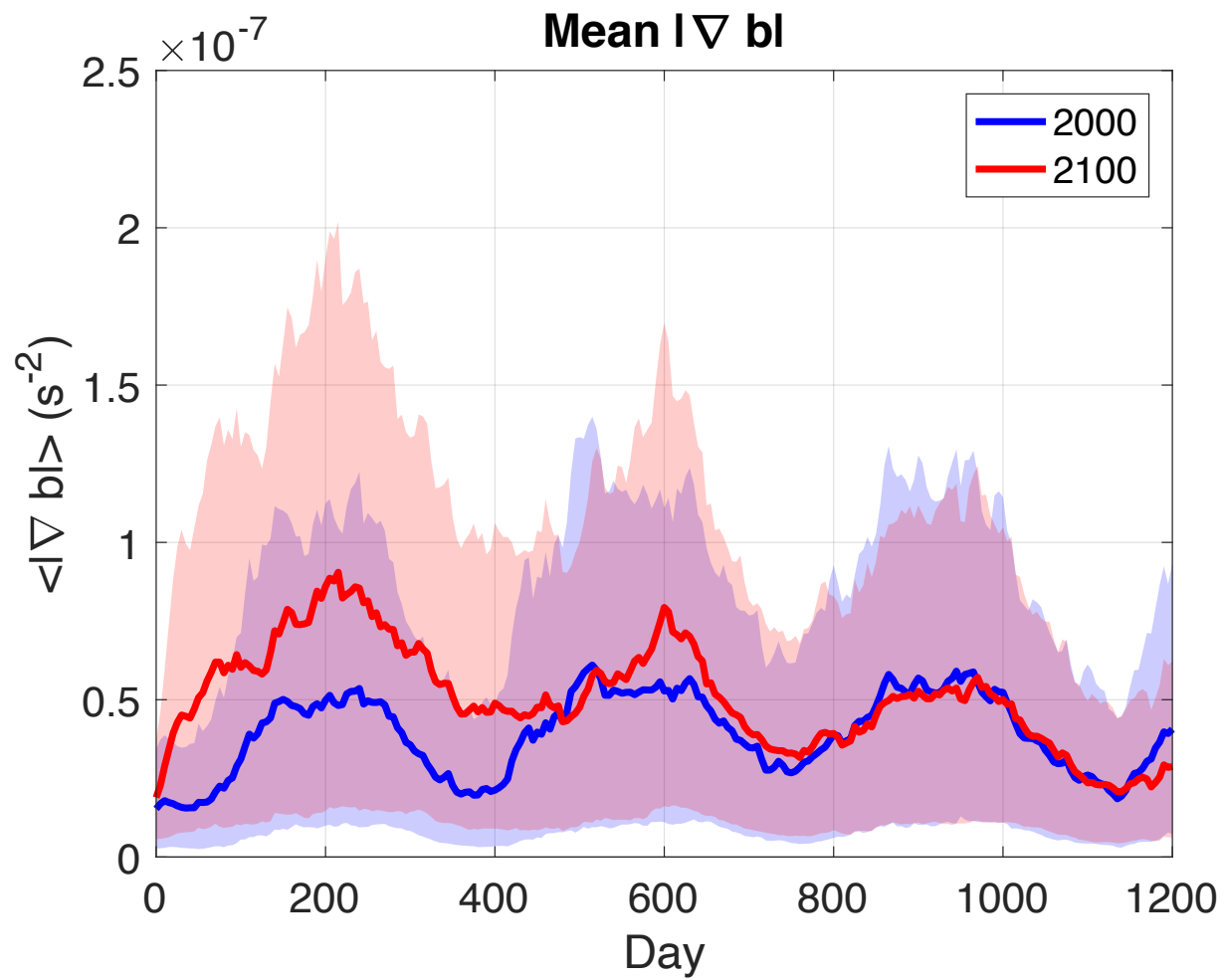
Forcing of 1/10 degree POP

- ❑ Present Day: CORE typical year
- ❑ Future: CORE + plus anomaly in seasonal forcing got from the Large Ensemble CESM RCP 8.5 projection

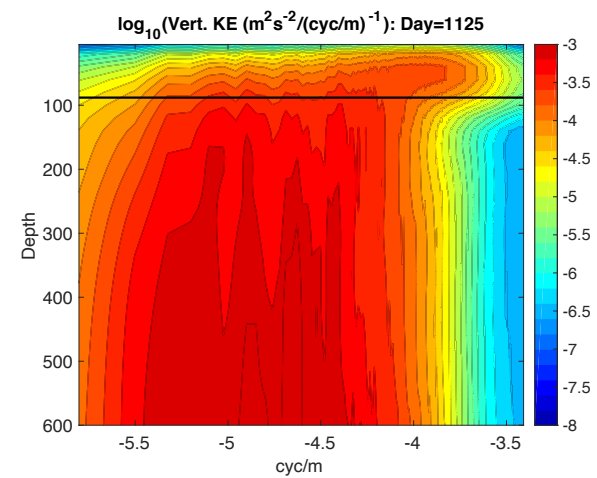
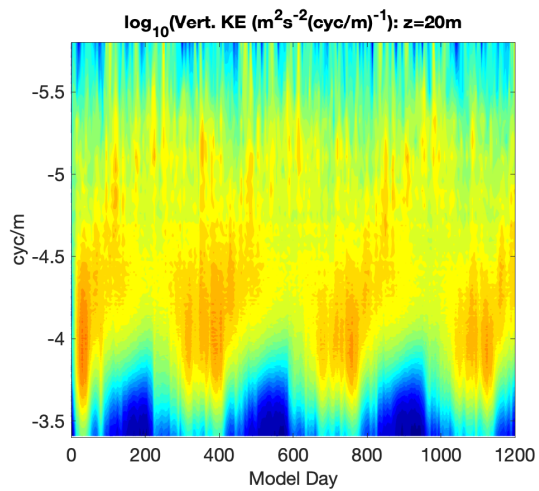
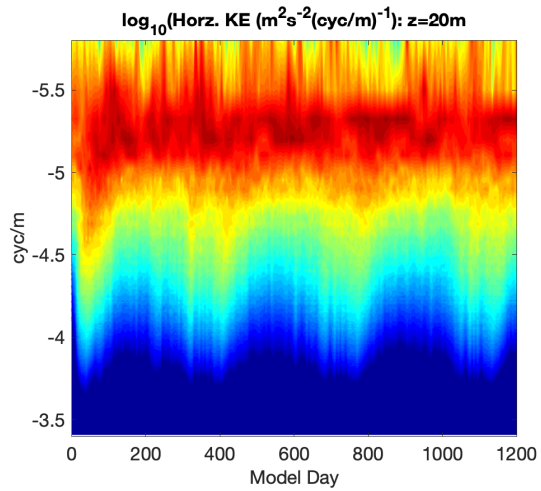
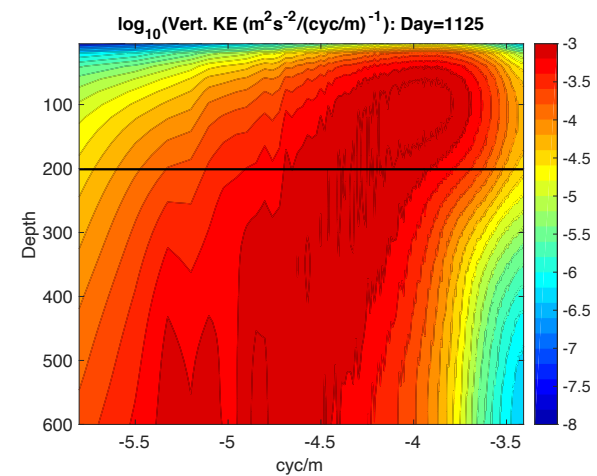
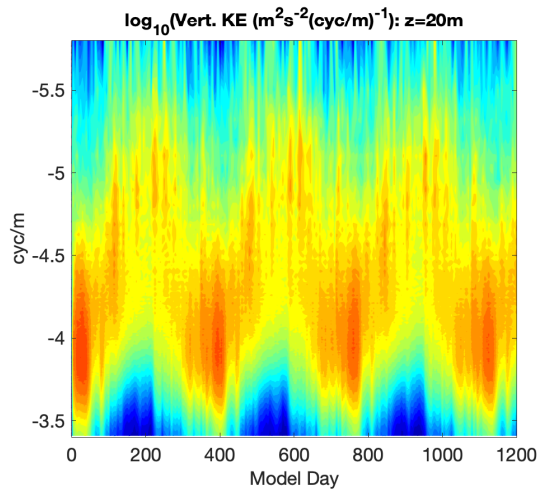
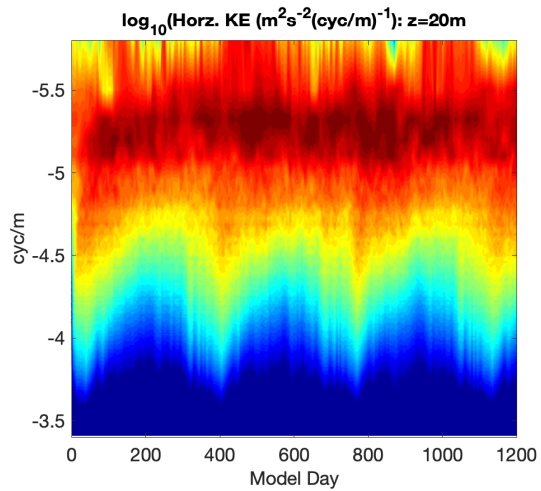


Mean MLD





Spectra

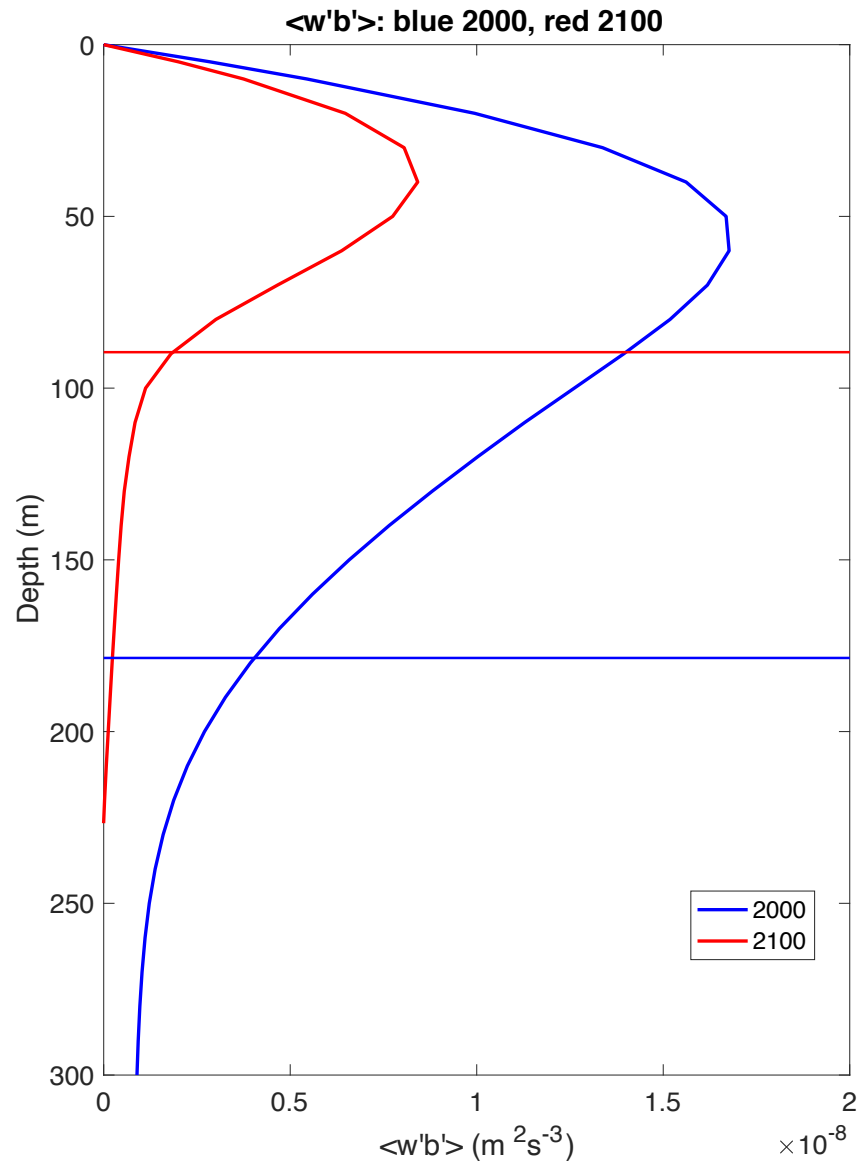


u,v

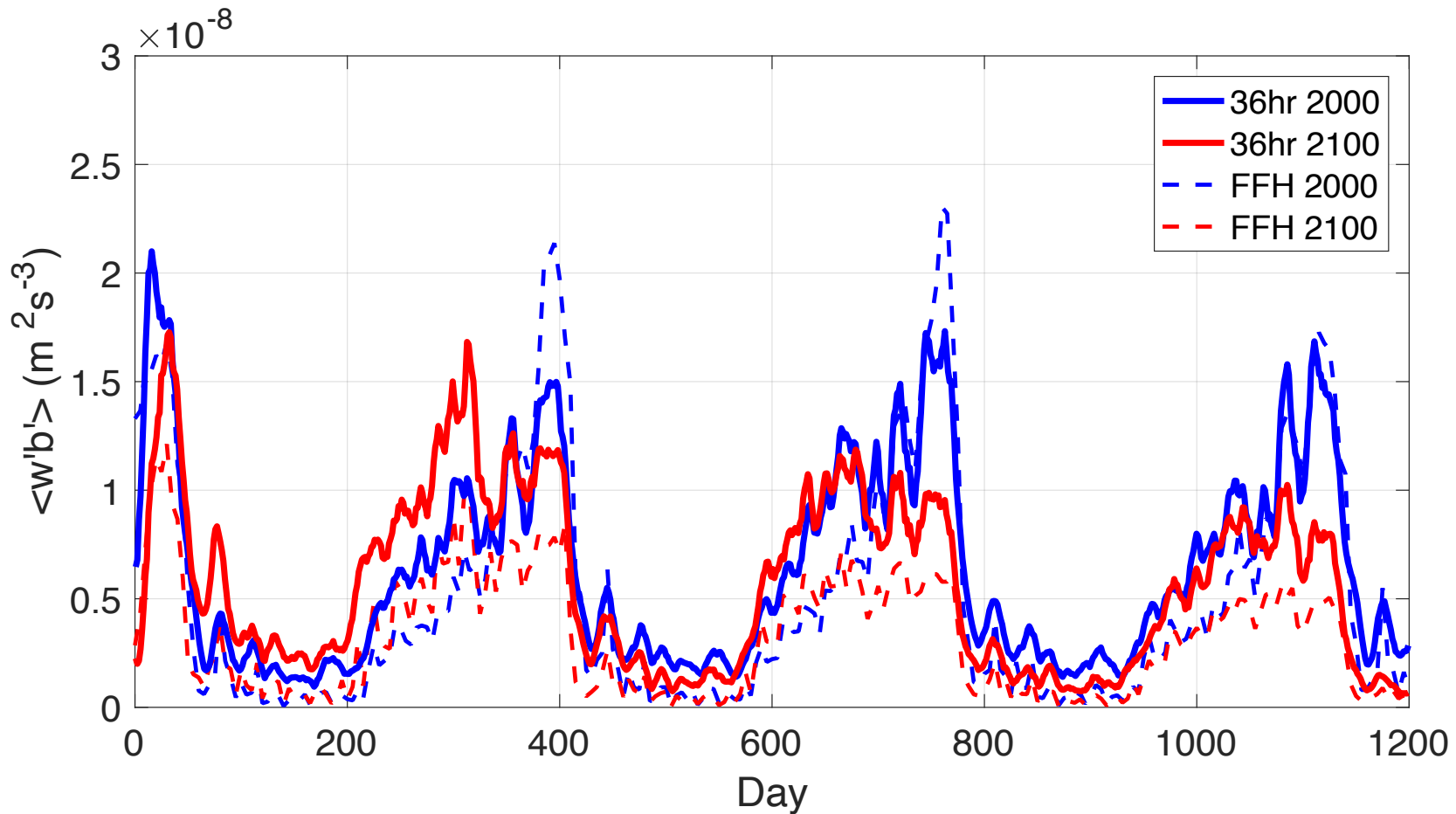
w

w

$\langle w'b' \rangle$ Day 1110



Max Buoyancy flux



<w'b'>: blue 2000, red 2100

