

NIWs in CCSM

A climate process team together with
SIO, UW, Univ. Mich. & Alaska, GFDL, FSU and WHOI

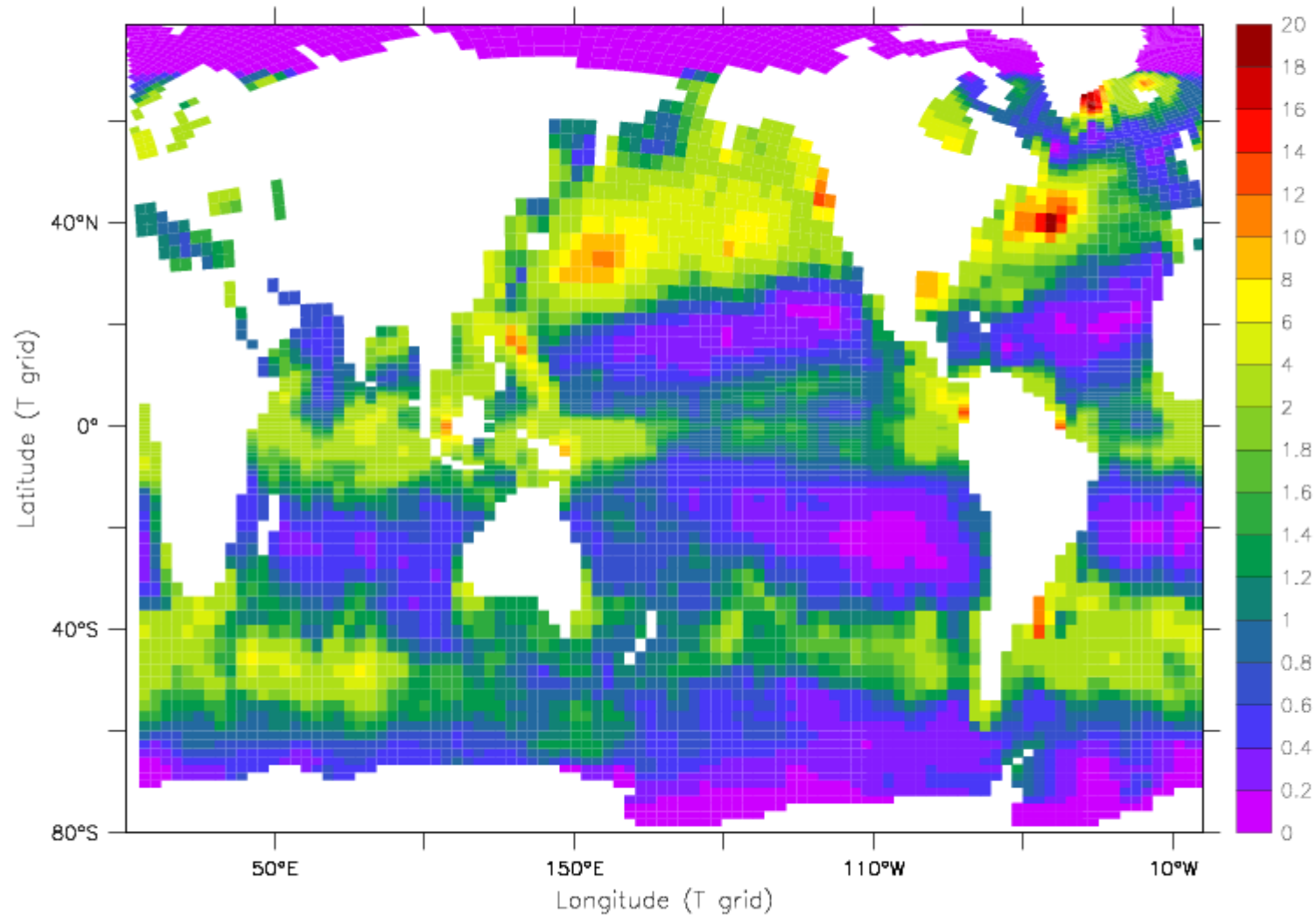
Jochum, Briegleb, Danabasoglu,
Bryan, Gent, Large (NCAR)

&

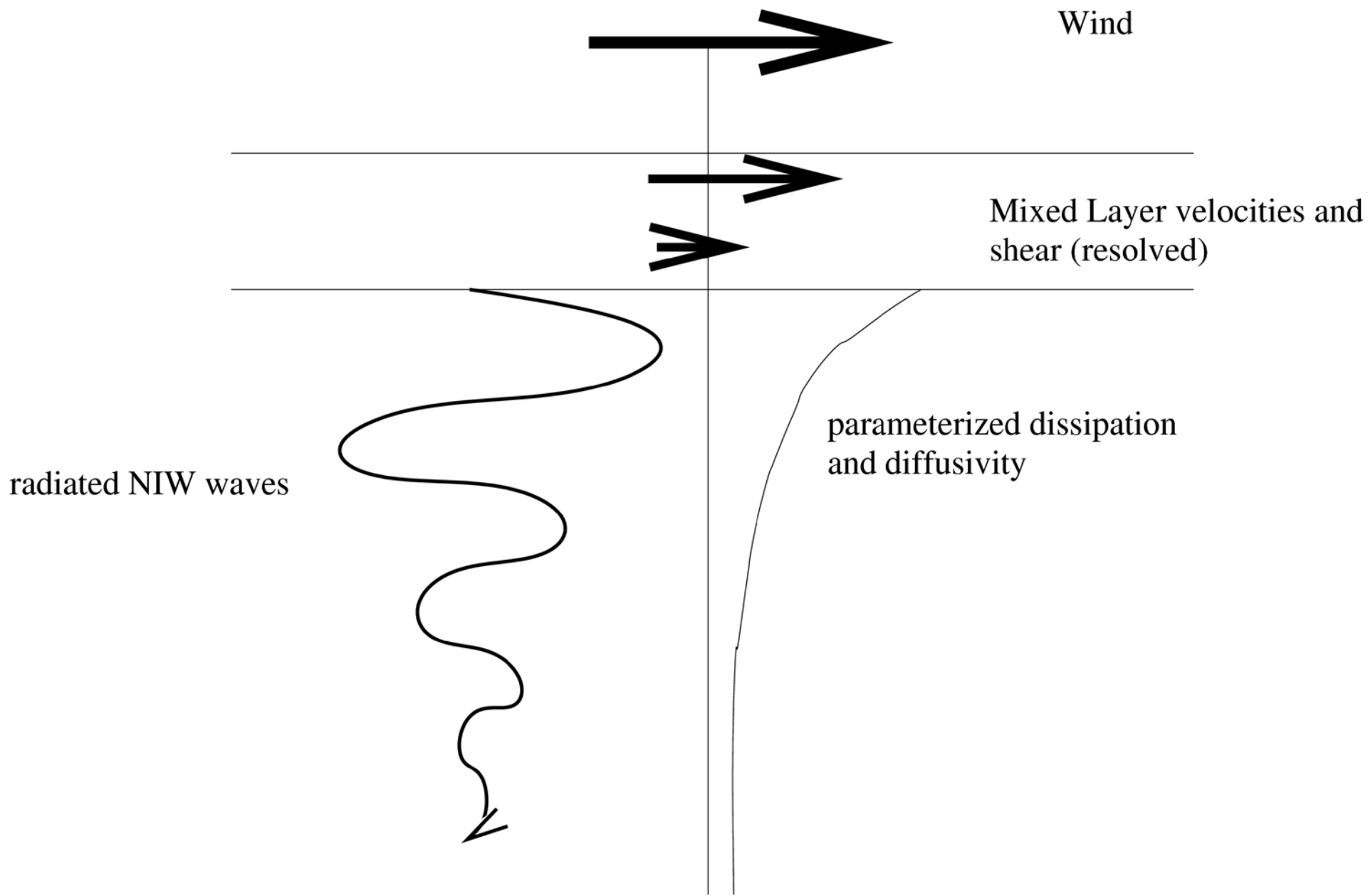
Alford (APL)

'Observed' NIW flux into the ocean (NCEP + slab ocean)

DATA SET: niwm_gx3v7

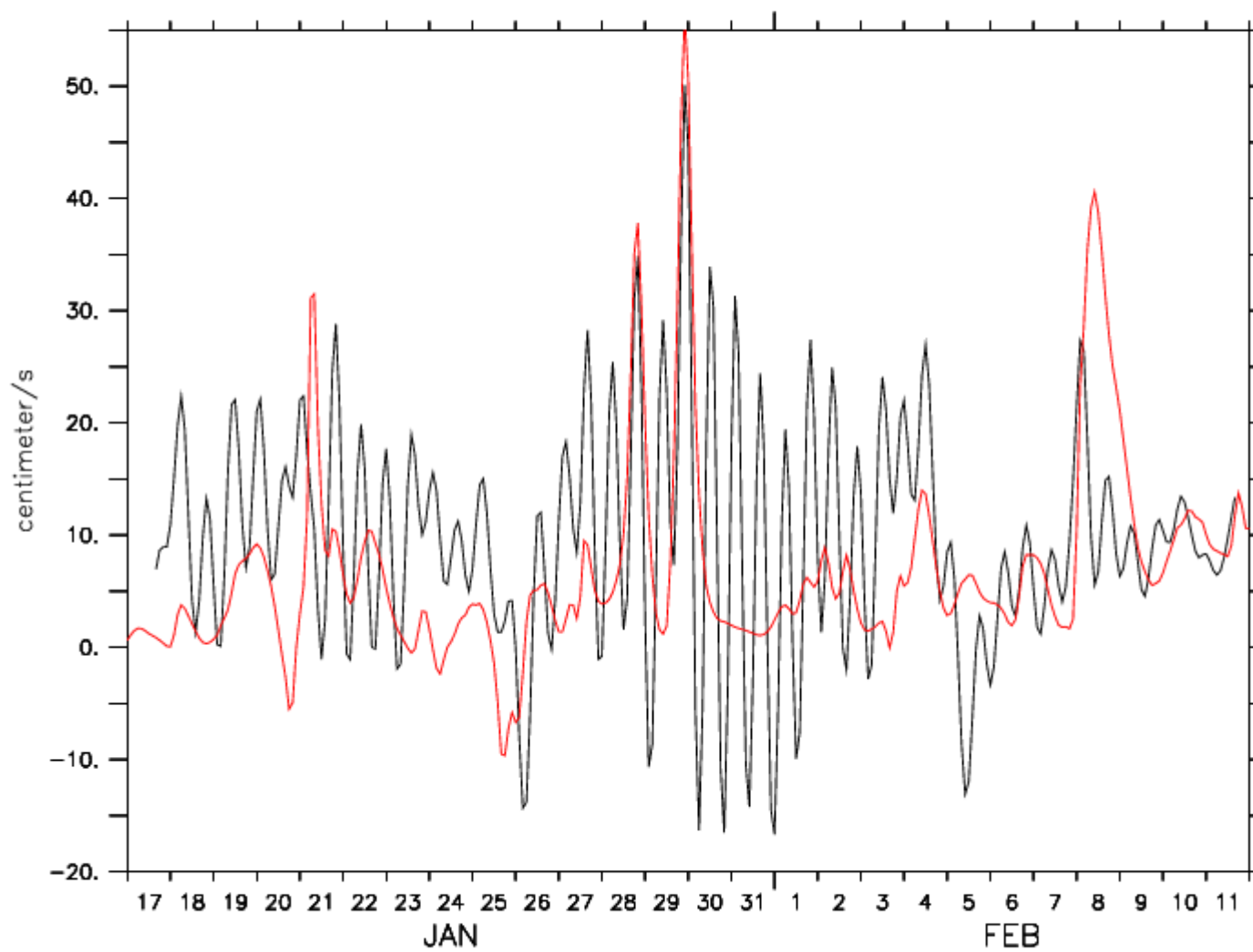


NIW energy flux into the ocean (mW/m², Alford, 2003)



Conceptual framework for NIW parameterization

NIW motions in CCSM4

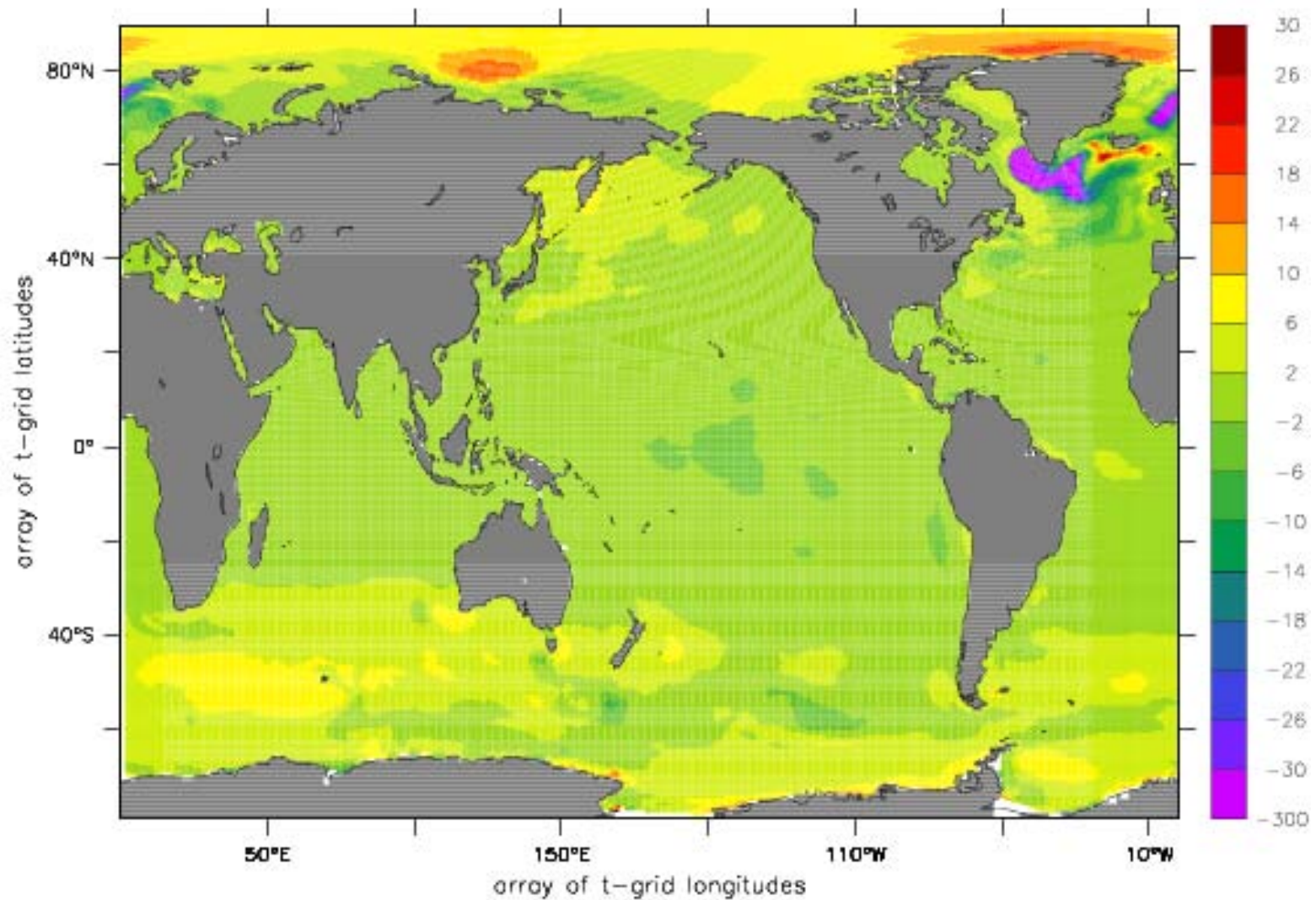


zonal velocity and stress (x5) at the Ocean Storms site in CCSM4

TIME : 31-DEC-0089 05:00 NOLEAP

DATA SET: arctic.tovg.80.99

arctic

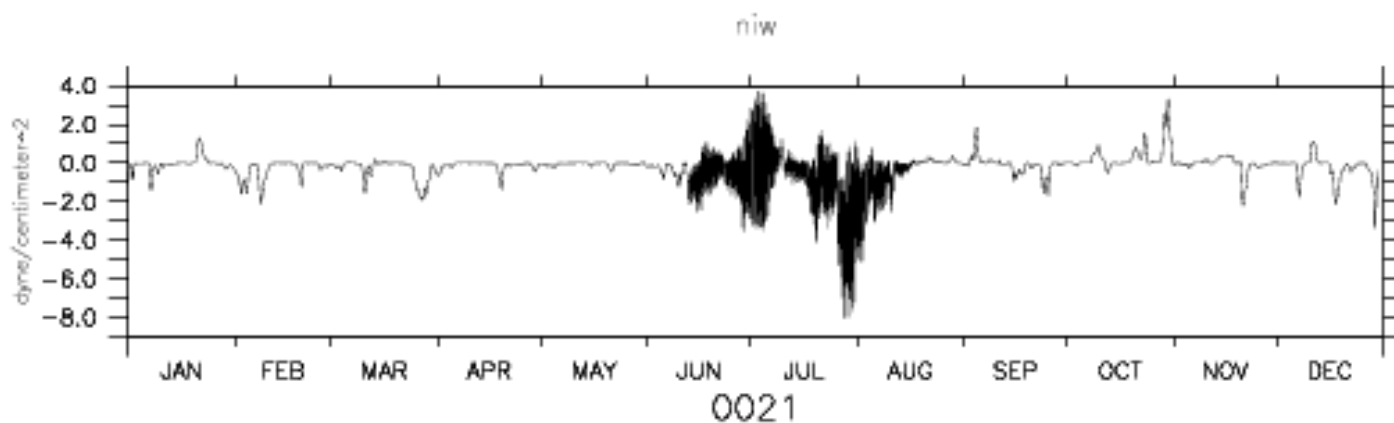


change of annual mean boundary layer depth with 2 hourly coupling [in m]

X : 156
Y : 375
CALENDAR: NOLEAP

FERRET Ver. 6.1
NOAA/PMEL TMAP
Feb 25 2011 13:18:14

DATA SET: toux

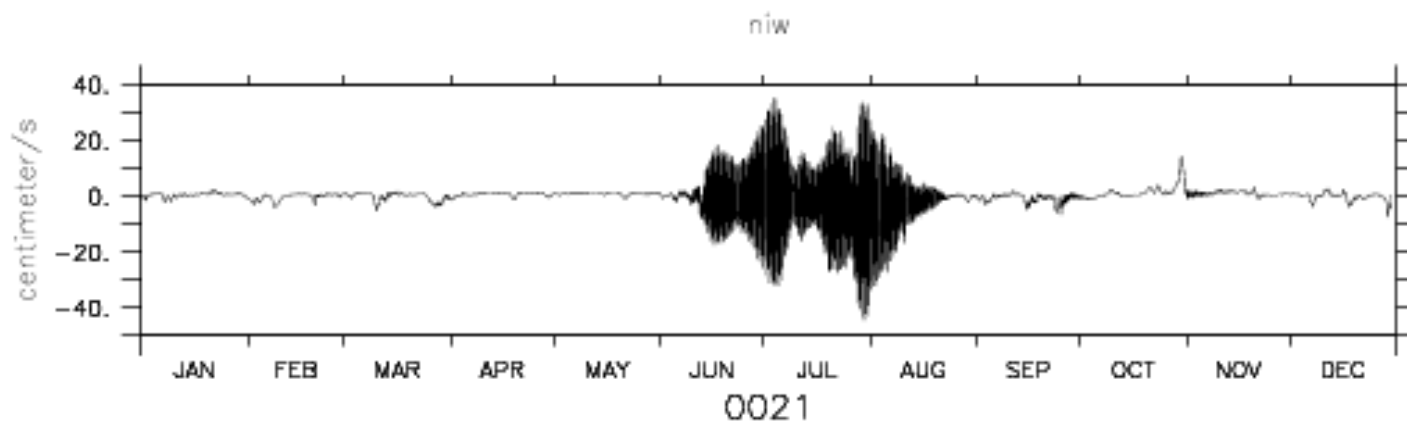


zonal windstress north of Greenland

X : 156
Y : 375
CALENDAR: NOLEAP

FERRET Ver. 6.1
NOAA/PMEL TMAP
Feb 25 2011 13:18:29

DATA SET: uvel



zonal velocity north of Greenland

Summary

- The NIW parameterization will be ready this summer
- Expect deeper and more realistic ML depth in the high latitudes
- Expect stronger sea-ice trends as the ice free ocean allows for deeper mixing