NIWs in CCSM

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

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&

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
change of annual mean boundary layer depth with 2 hourly coupling [in m]
zonal windstress north of Greenland

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