

MM5 12 km 72 hour simulation
 Feb 11 00Z – Feb 14 00Z 2008
 72 hour Wind Swath (max wind at each gridpoint, in knots)

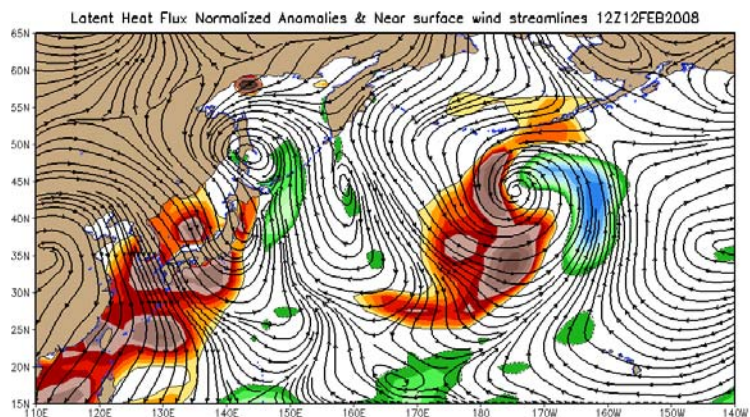
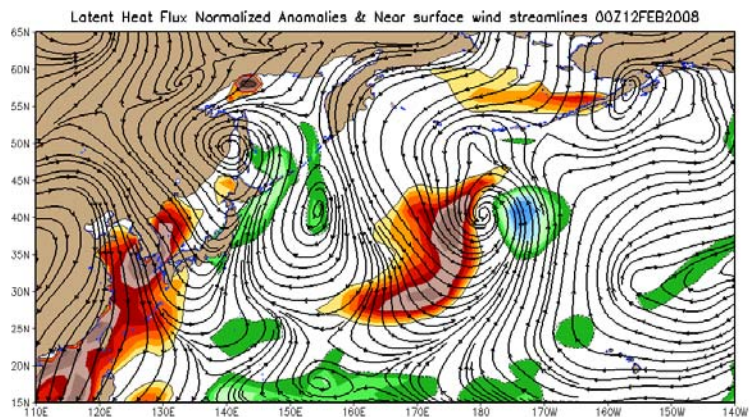
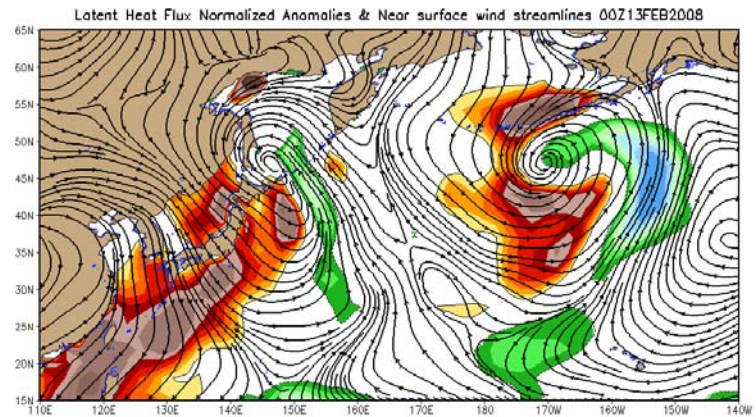
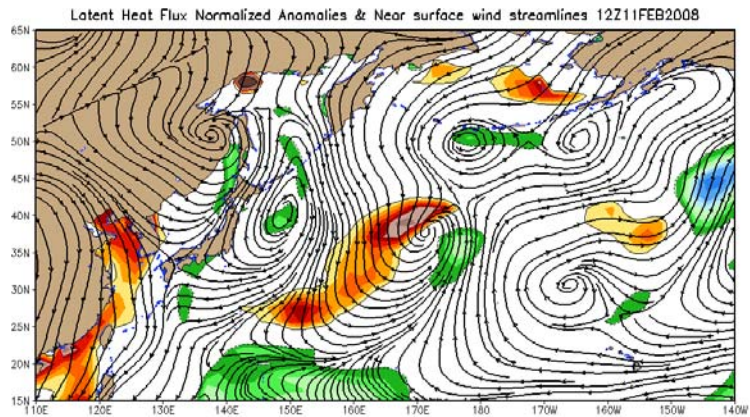
The development of the cyclones
 Is controlled by the upper-level shear
 Either cyclonic (LC2) or non-sheared (LC1)

The LC1 is the main-huge one across the Pacific (Shapiro and Keyser lifecycle-with warm seclusion at maturity). The LC2 is the little one by Japan, which tend to have a stubbier structure underneath cyclonic shear. The storm does a counterclockwise loop. It is more representative of the Norwegian or Bergen school of cyclones.

The No Flux indicates that the convective heat release from entrained moisture is sufficient to maintain a very powerful cyclone, however, the secondary low near the Kuroshio fails to develop.

No Heat is basically adiabatic run, which does produce cyclones of limited intensity, b/c the baroclinicity is largely untapped and warm-core structure cannot occur – which requires the convective cloud heat and diabatic heating to yank down the tropopause fold and high-PV air to the center.

Full physics is awesome. The model run was forced with GFS 0.5 degree analysis boundary and initial conditions

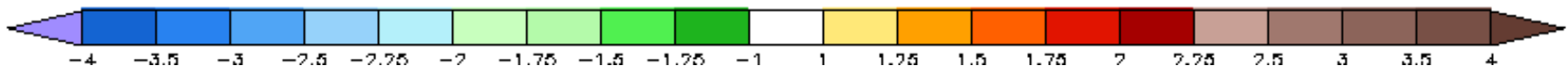


Normalized Anomalies of Latent Heat Flux

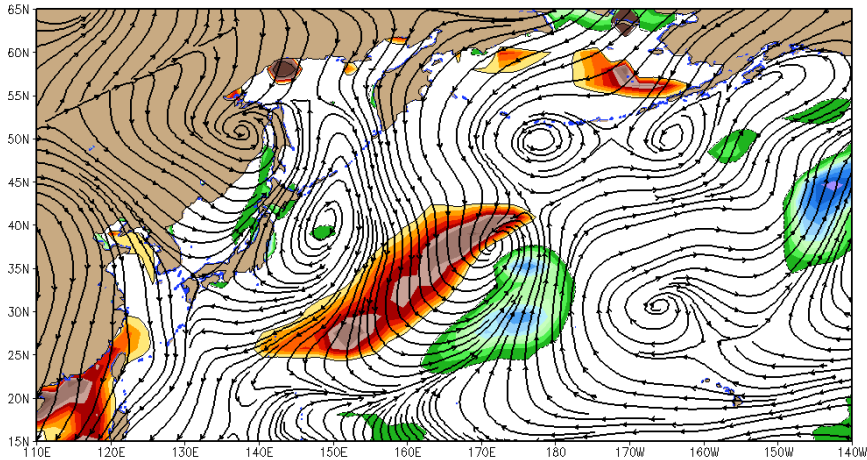
NCEP Reanalysis 1971-2000 (30-year mean and standard deviations – from a 21 day centered mean to calculate anomalies)

The winds are from 925 hPa, but are smoother and show the synoptic systems better.

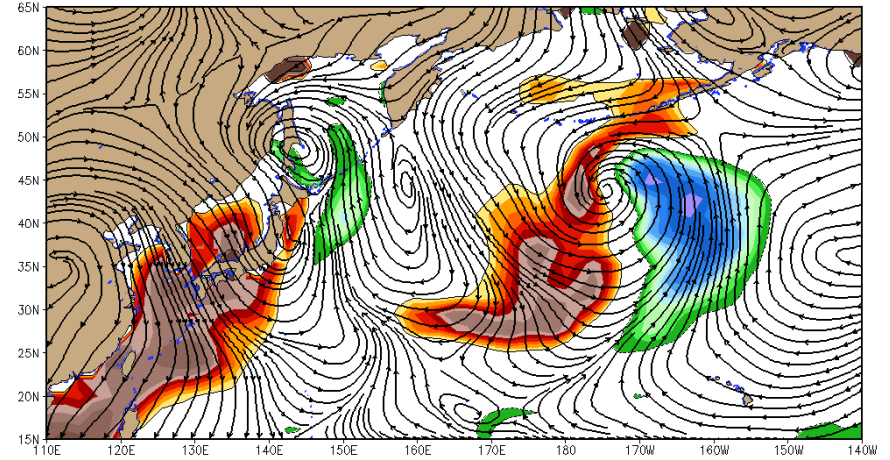
So, red areas are Latent Heat flux well above normal, which would entail colder air over warmer water. The cyclone structure should explain that readily.



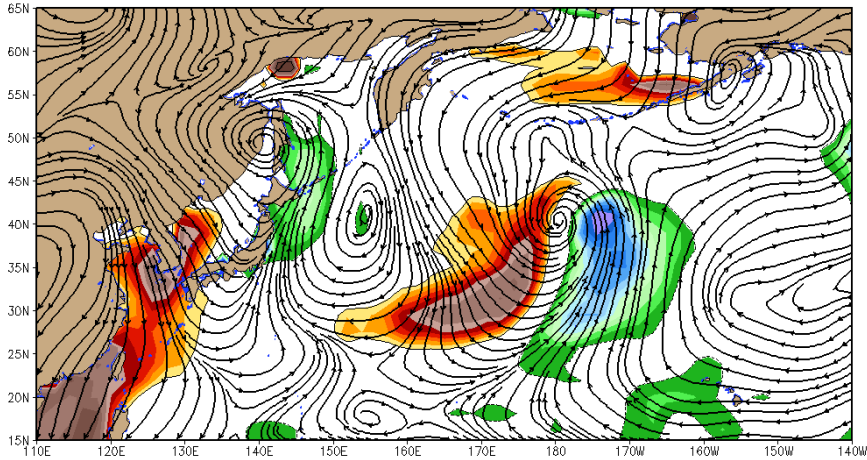
Sensible Heat Flux Normalized Anomalies & Near surface wind streamlines 12Z11FEB2008



Sensible Heat Flux Normalized Anomalies & Near surface wind streamlines 12Z12FEB2008



Sensible Heat Flux Normalized Anomalies & Near surface wind streamlines 00Z12FEB2008



Norm Anomalies of sensible heat flux, which shows the cyclone structure quite well. Also, the cold air behind the front in the South China sea...

