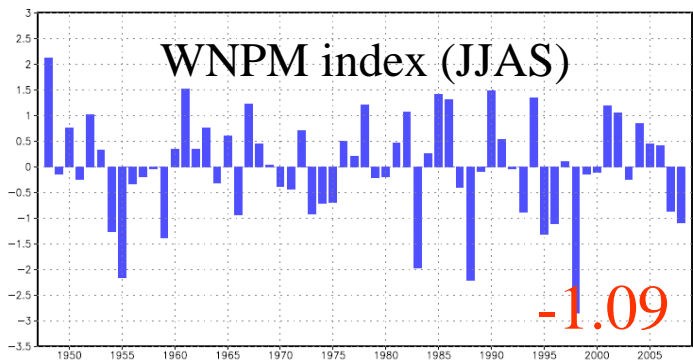
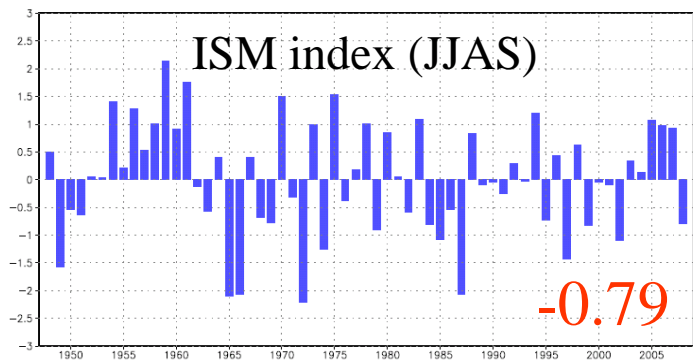


Overview of Asian Summer monsoon in 2008

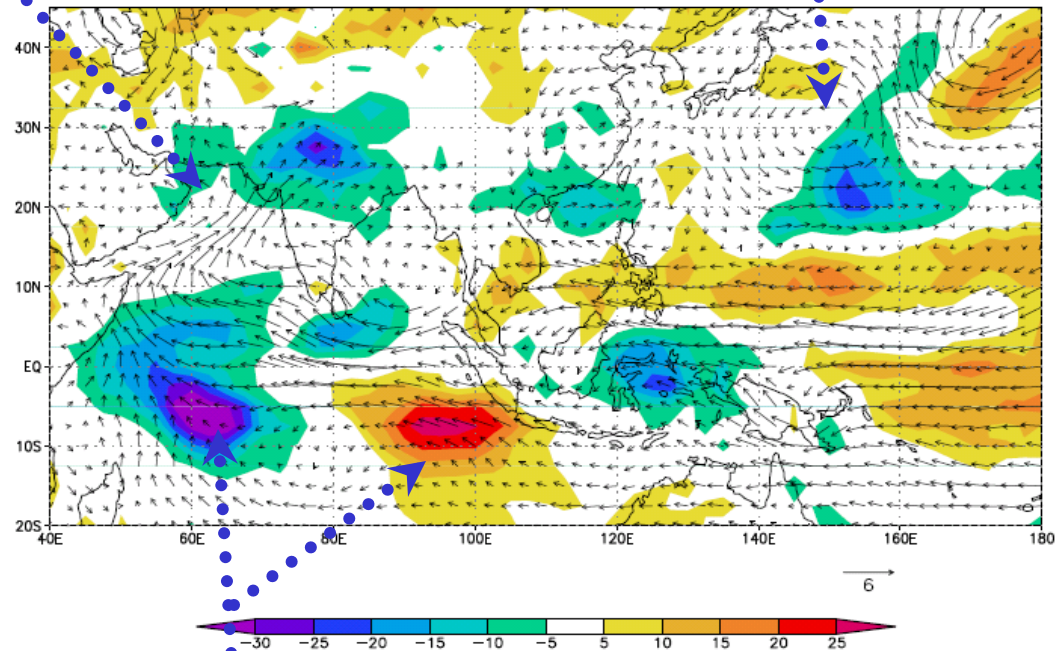
Both (seasonal JJA mean) ISM and WNPM in 2008 was weaker than normal !!

Increasing Rainfall over
N-India with strengthened
Somali Jet ...



Weakening of subtropical High

OLR and U,V @850 anomalies (Jun-Aug in 2008)



Dipole pattern of convection anomalies

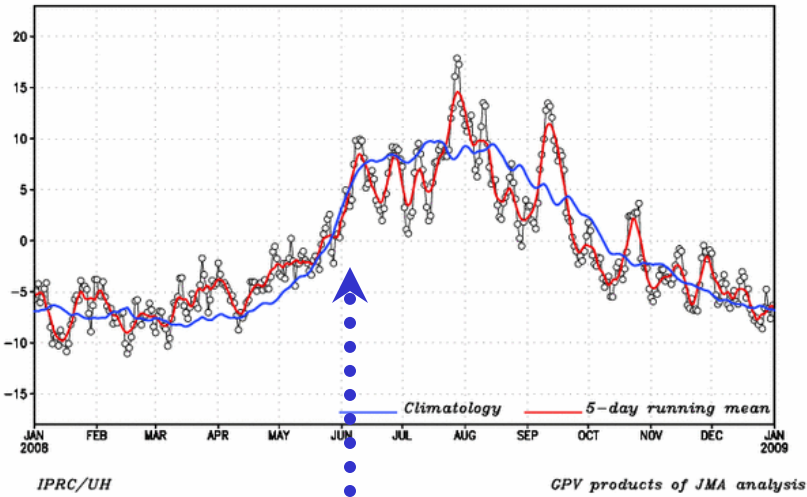
Overview of Asian Summer monsoon in 2008

1. Indian summer monsoon

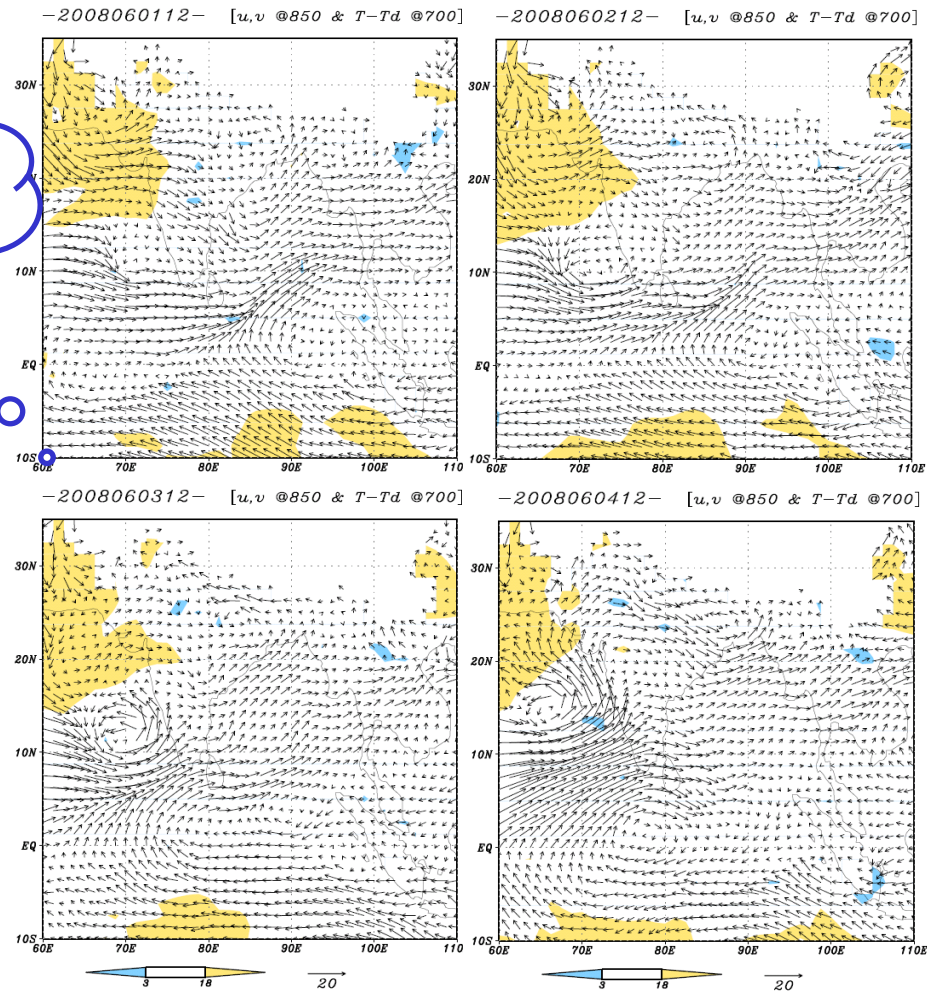
Developing Onset vortex

$$\text{ISM index} = U_{850}(40\text{E}-80\text{E}, 5\text{N}-15\text{N}) - U_{850}(70\text{E}-90\text{E}, 20\text{N}-30\text{N})$$

Indian Monsoon Index 2008



The timing of ISM onset was quite similar to climatology, *although the ISM was relatively weaker in June and July.*



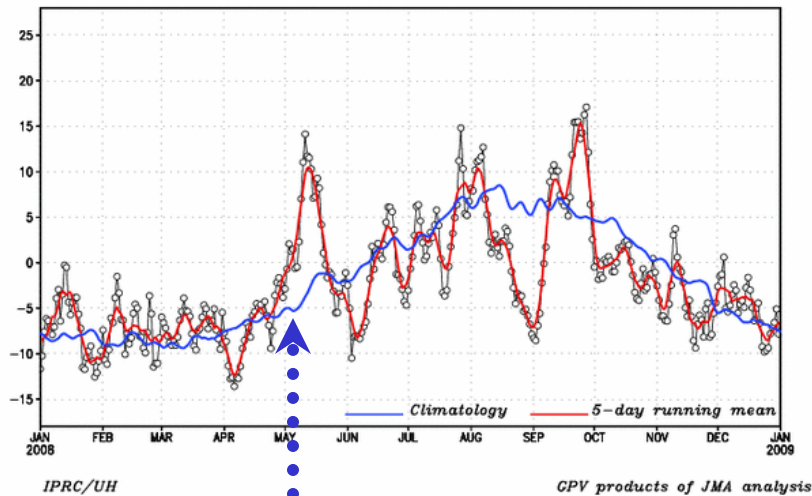
ISM onset in 2008 was clear with **onset vortex** over the AS

Overview of Asian Summer monsoon in 2008

2. Western north Pacific monsoon

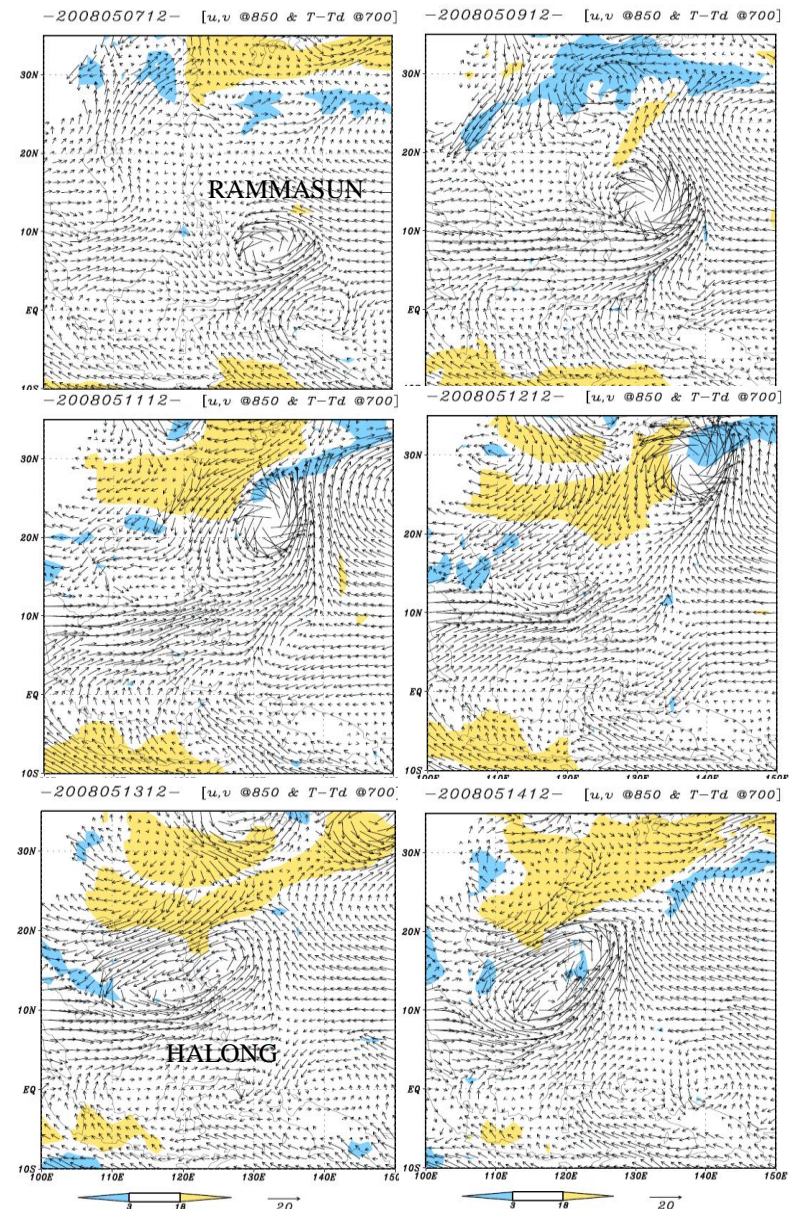
$$\text{WNPM Index} = U_{850}(100\text{E}-130\text{E}, 5\text{N}-15\text{N}) - U_{850}(110\text{E}-140\text{E}, 20\text{N}-30\text{N})$$

Western Pacific Monsoon Index 2008



RAMMASUN (TY200802) induced the WNPM onset and HALONG (TY200804) over the SCS.

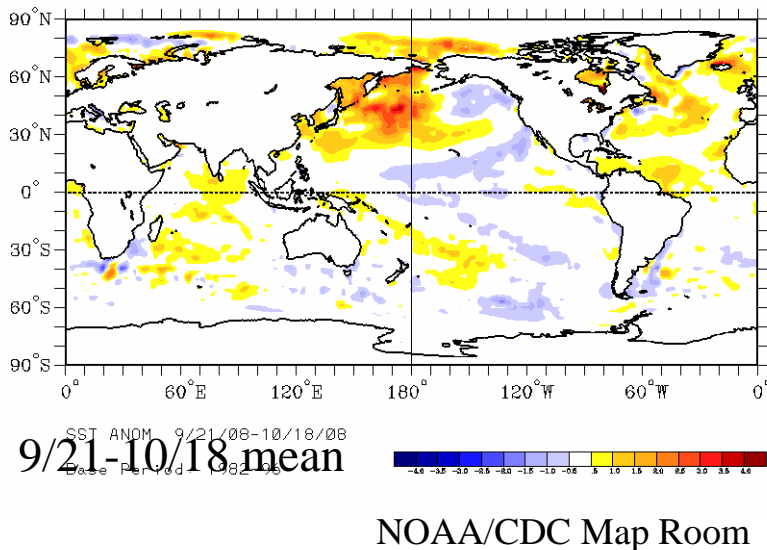
ISO in MJO time scale was overall weak in 2008.



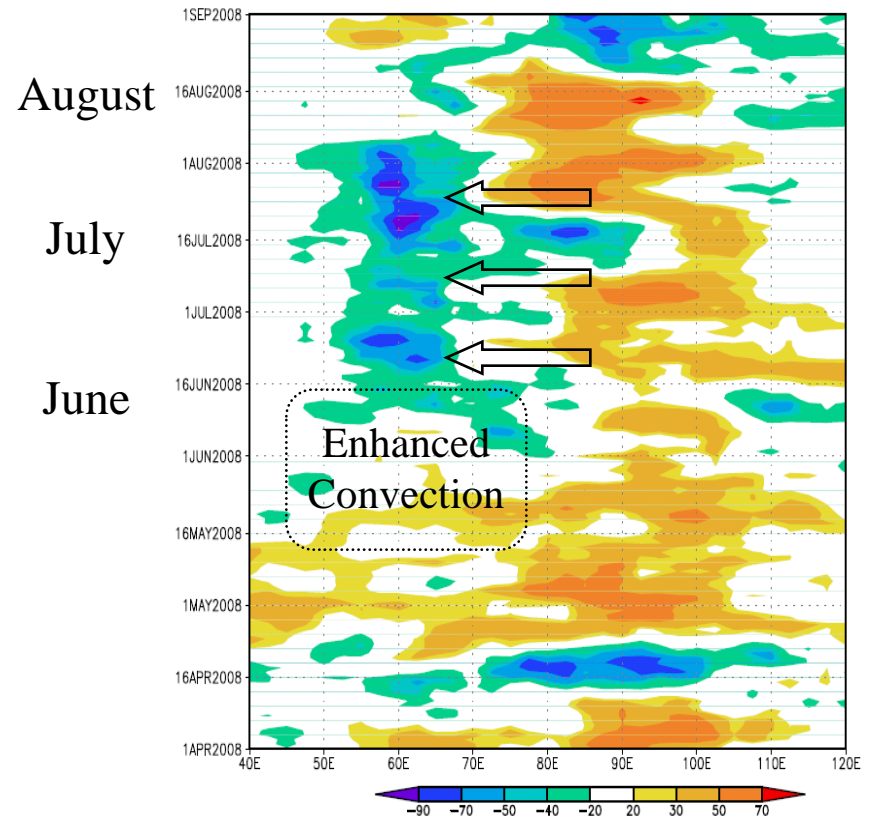
Overview of Asian Summer monsoon in 2008

East-West Dipole pattern of convection anomalies over the (south) Indian Ocean with easterly wind anomalies.

SST anomalies over EIO and WIO
is not clear in Sep and Oct !!



OLR anomalies along 5S



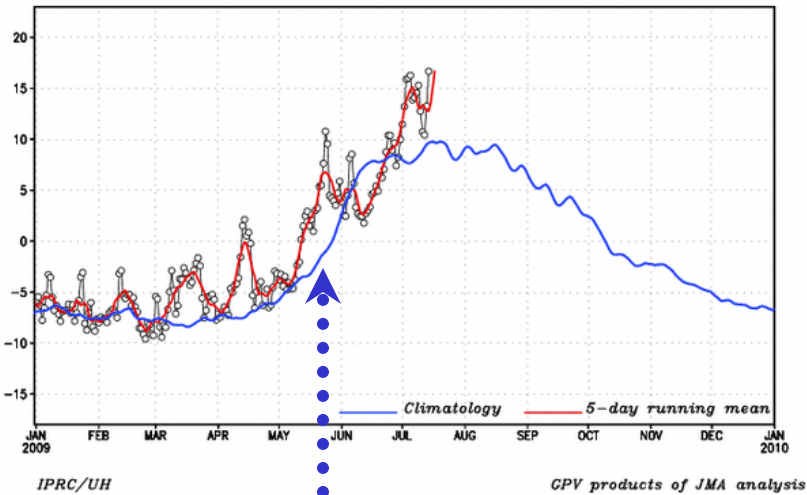
[Q] Why the (SST) IOD mode was not developed through boreal autumn in 2008?

Preliminary view of Asian Summer monsoon in 2009

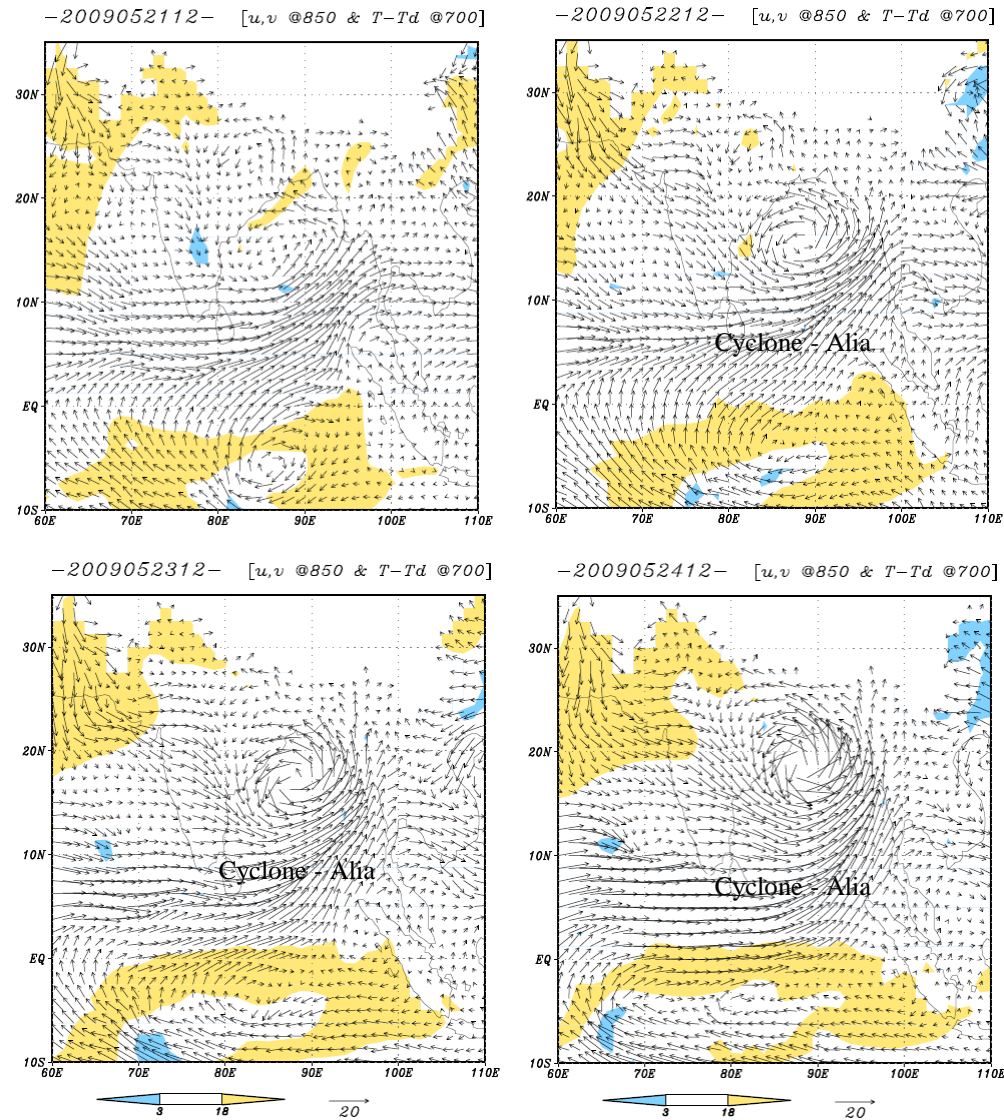
1. Indian summer monsoon

$$\text{ISM index} = U_{850}(40\text{E}-80\text{E}, 5\text{N}-15\text{N}) - U_{850}(70\text{E}-90\text{E}, 20\text{N}-30\text{N})$$

Indian Monsoon Index



The ISM onset was earlier than normal, and accompanied by Tropical cyclone (Alia) over the BoB

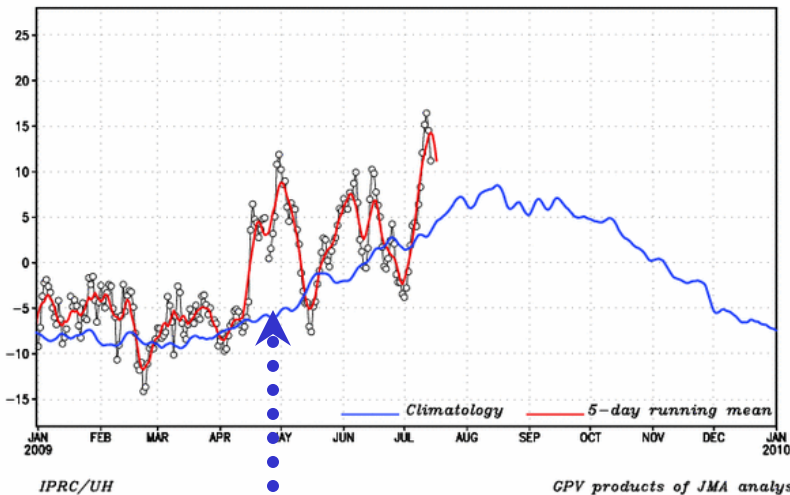


Preliminary view of Asian Summer monsoon in 2009

2. Western north Pacific monsoon

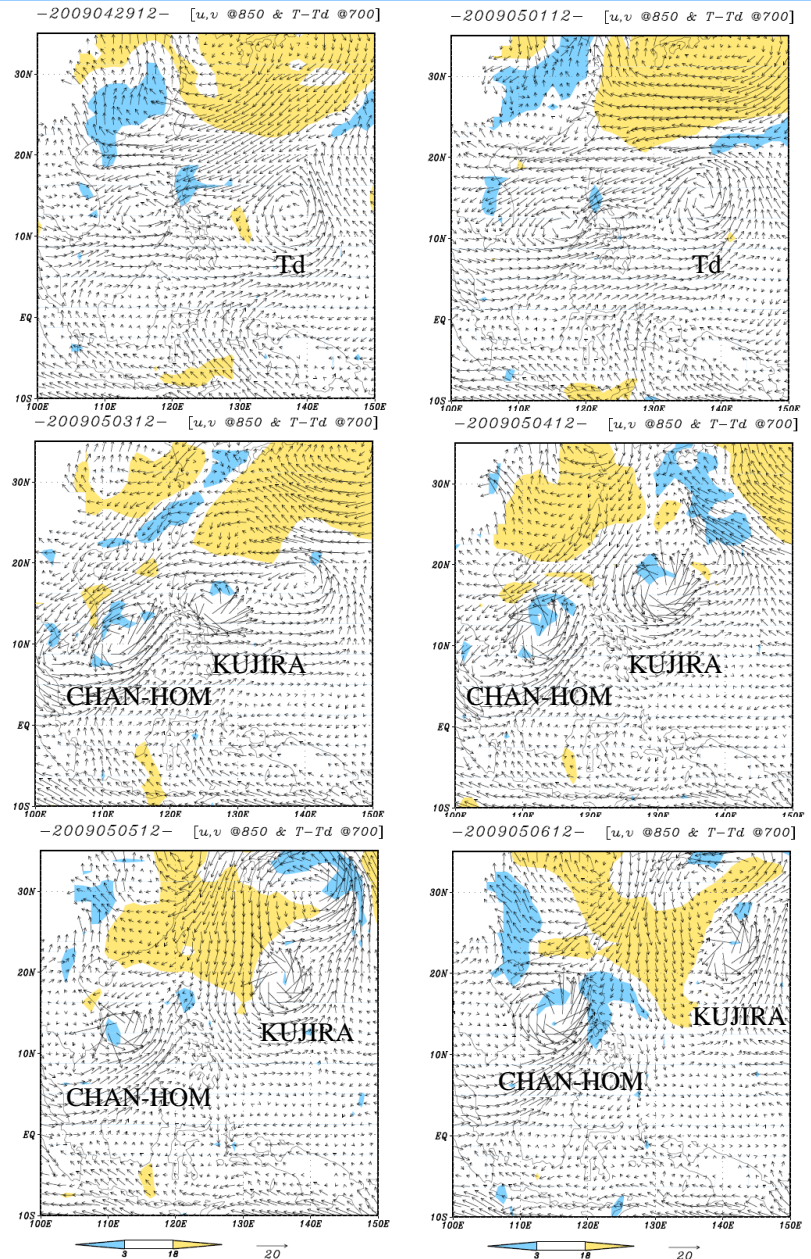
$$\text{WNPM Index} = U_{850}(100\text{E}-130\text{E}, 5\text{N}-15\text{N}) - U_{850}(110\text{E}-140\text{E}, 20\text{N}-30\text{N})$$

Western Pacific Monsoon Index



KUJIRA (TY200901) and CHAN-HOM (TY200902) developed in early May

*Hard to define the WNPM onset in 2009 so far...
(Middle of April --- 1 month earlier ?)*



Interesting period for intensive study of YOTC 2008-2009