

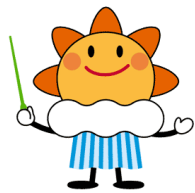
Summary of the JMA's Outlook for the 2006/07 Winter

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Tokyo Climate Center
Japan Meteorological Agency

2006/11/02 7th Joint Meeting on EAWM

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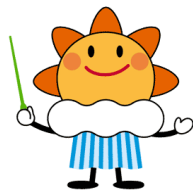
1. JMA's Seasonal Numerical Ensemble Prediction for the 2006/07 winter
2. The 2006/07 Cold Season Outlook for Japan



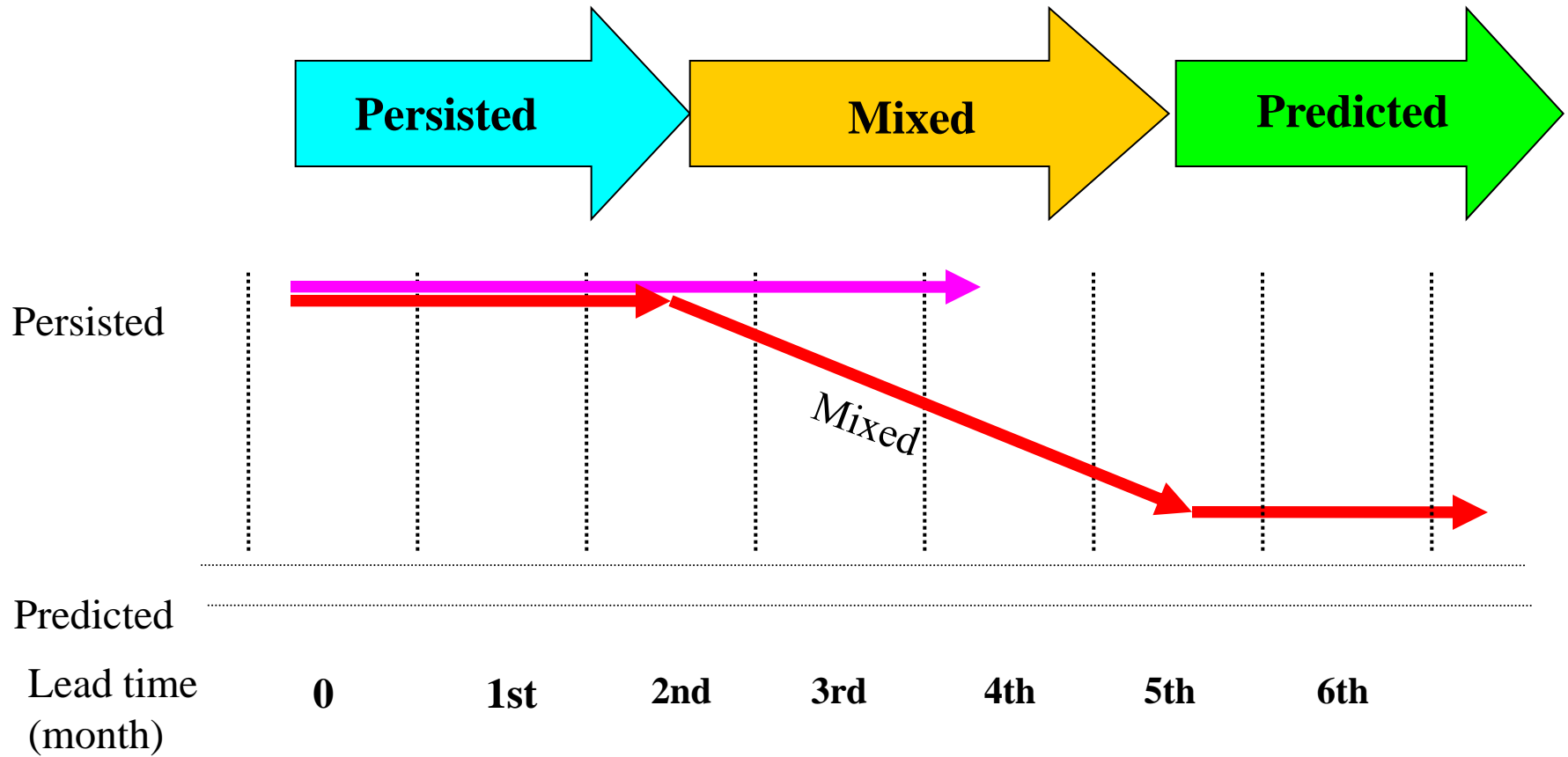
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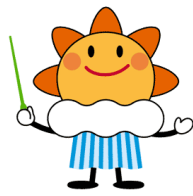
< URL: <http://okdk.kishou.go.jp/products/model/index.html> >

issued on 25 September 2006

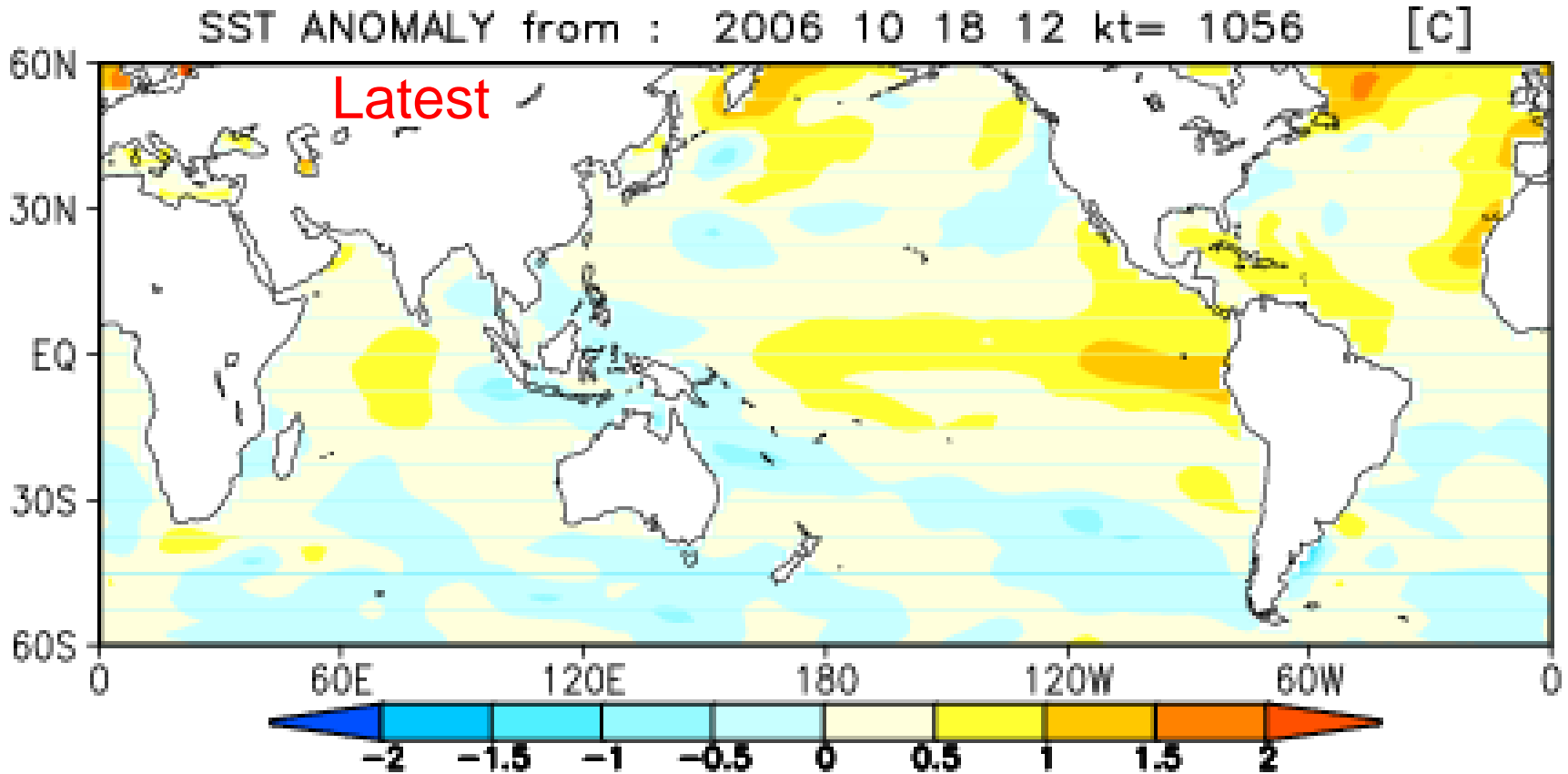


Sea Surface Temperature for the 6-month EPS





Predicted SSTA for DJF in 2006/2007



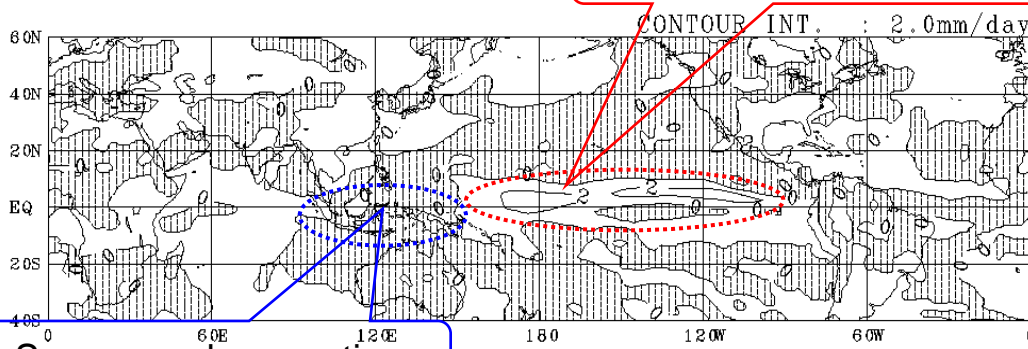


Predicted circulation fields in the tropics

ensemble mean, DJF 2006/2007, initial: 2006.9.14

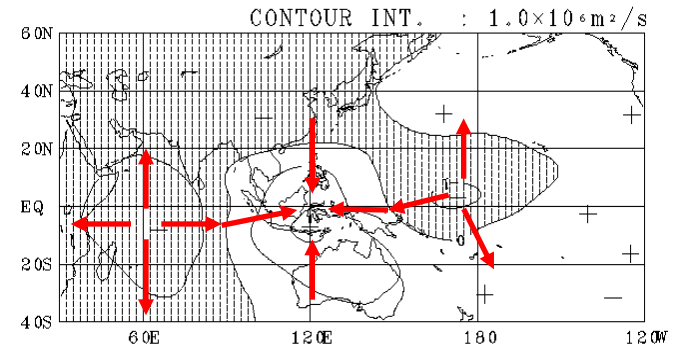
Precipitation anomaly

Enhanced convection

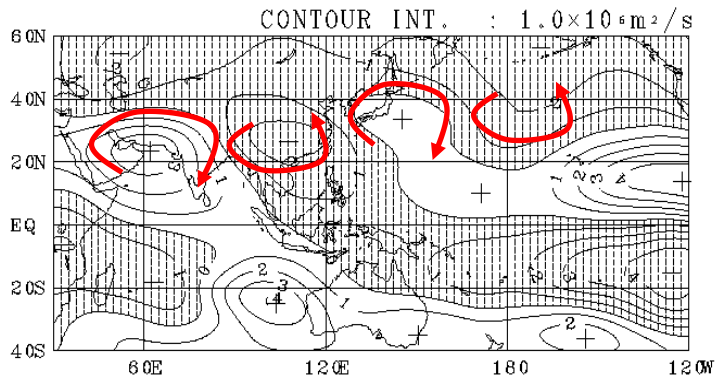


Suppressed convection

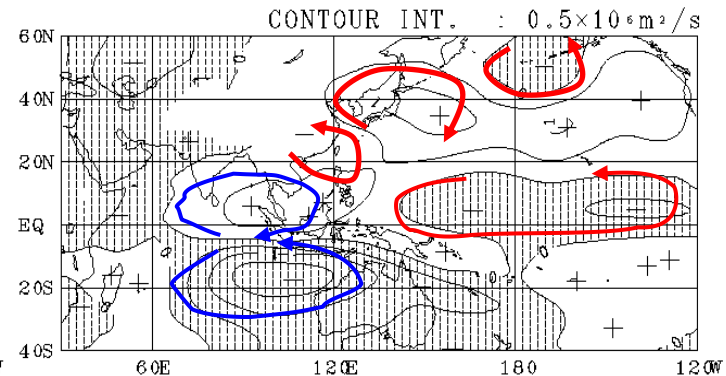
Velocity potential anomaly at 200 hPa



Stream function anomaly at 200 hPa



at 850 hPa



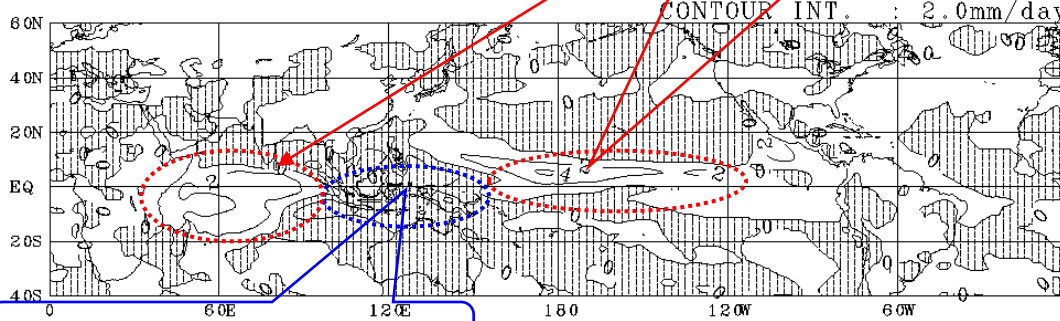


Predicted circulation fields in the tropics

ensemble mean, DJF 2006/2007, initial: 2006.10.18 **Latest**

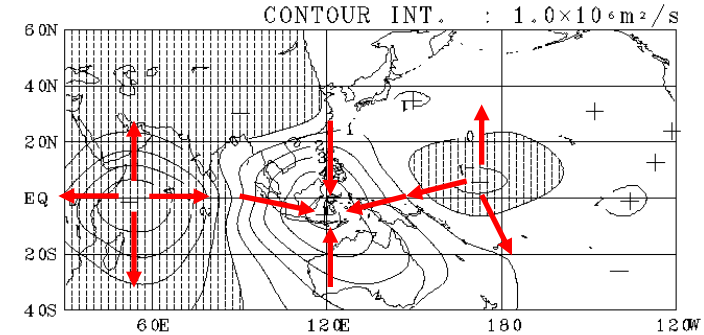
Precipitation anomaly

Enhanced convection

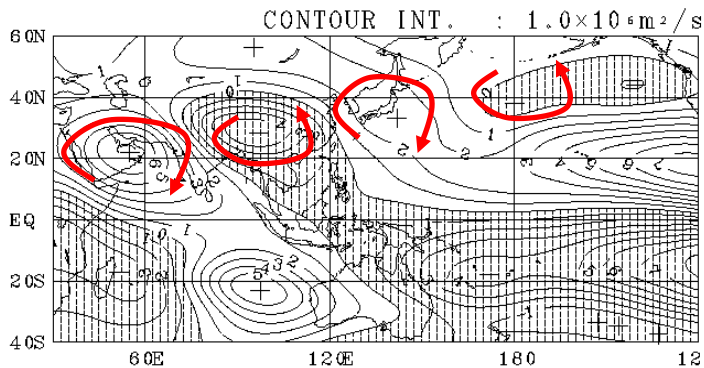


Suppressed convection

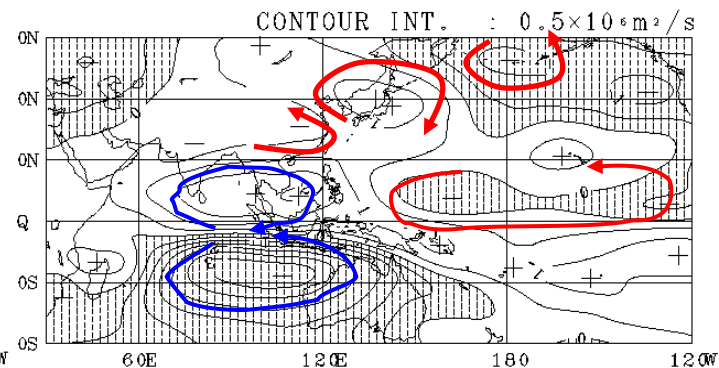
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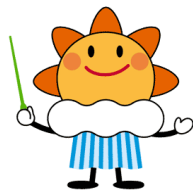


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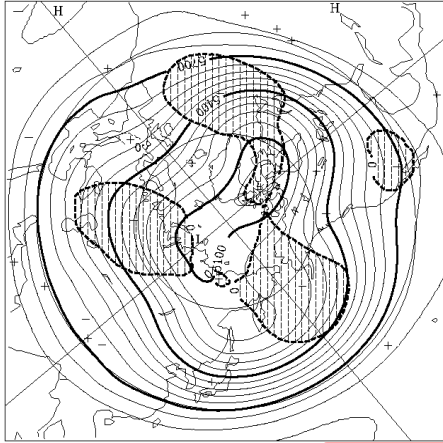


Predicted circulation fields in the Northern Hemisphere middle and high latitudes

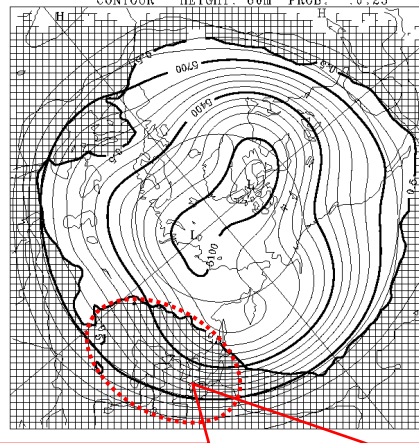
DJF 2006/2007, initial: 2006.9.14

500hPa height anomalies and probabilities

500hPa HEIGHT AND ANOMALY
3 MONTH MEAN (12/ 1- 2/28) N:31
CONTOUR HEIGHT: 60m ANOMALY:30m



3 MONTH MEAN (12/ 1- 2/28) N:31
PROB. OF H.ANOMALY AND HEIGHT
CONTOUR HEIGHT: 60m PROB.: 0.25

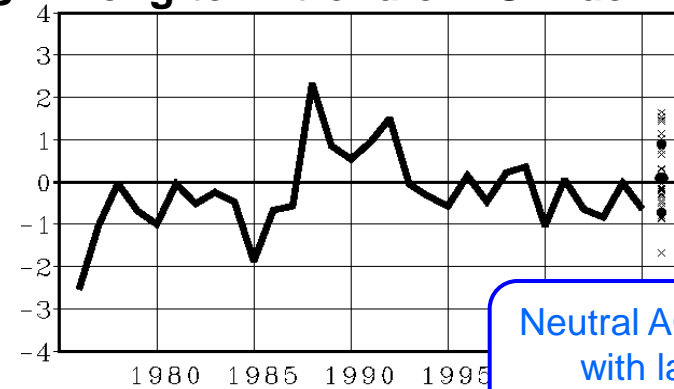


Highly probable positive anomaly area over Eastern Asia

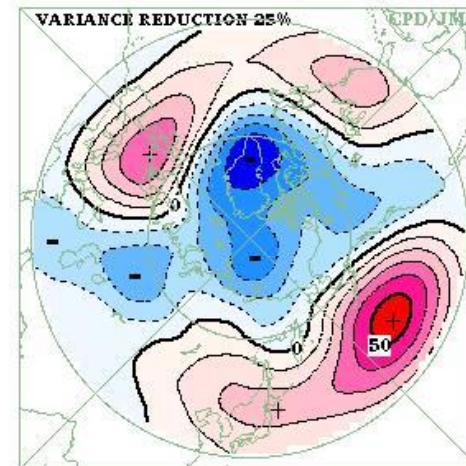
(left) Ensemble mean (solid contours; interval is 60 m) and anomaly (dashed contours; interval is 30 m). Negative anomalies are shaded.

(right) Ensemble mean and the probabilities of anomalies predicted to be above $\{+0.42 \times \text{standard deviation}\}$ or below $\{-0.42 \times \text{standard deviation}\}$.

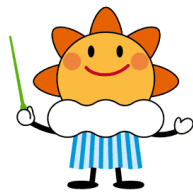
Long-term trend of AO Index



Neutral AO index with large uncertainty



Observed (1976/77-2005/2006 DJF) and predicted (2006/2007 DJF) AO index (left) defined by the first EOF of 500 hPa height anomalies in the Northern Hemisphere (right).

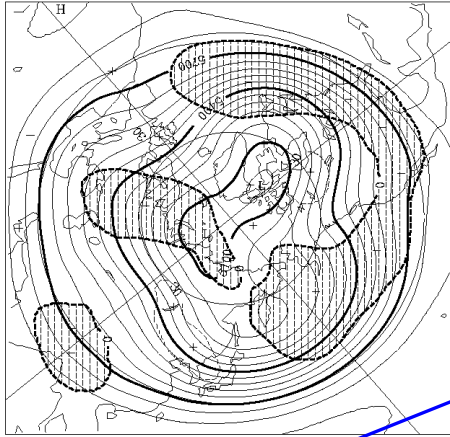


Predicted circulation fields in the Northern Hemisphere middle and high latitudes

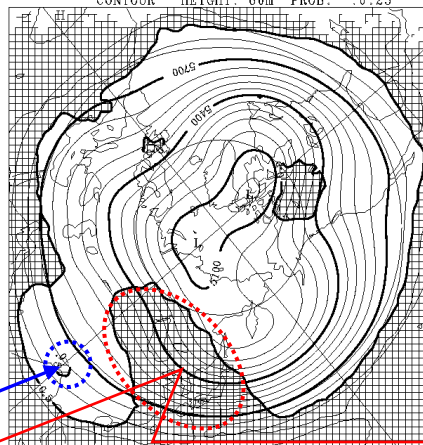
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500hPa height anomalies and probabilities

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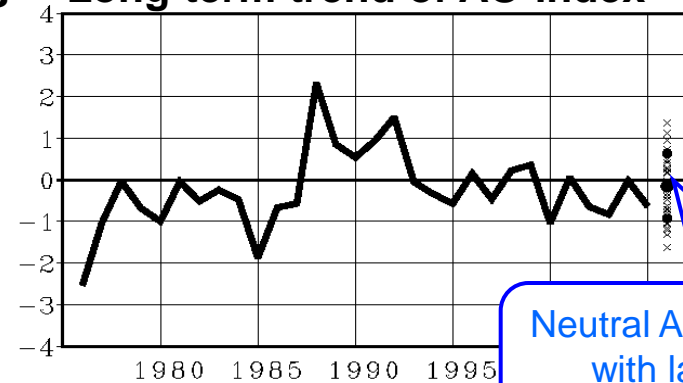
Negative anomaly area

Highly probable positive anomaly area over Northeastern Asia

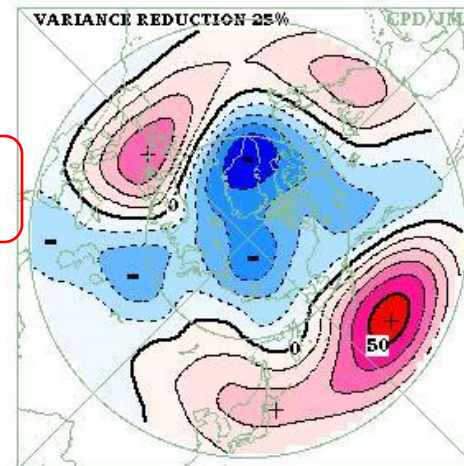
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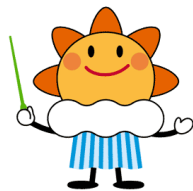


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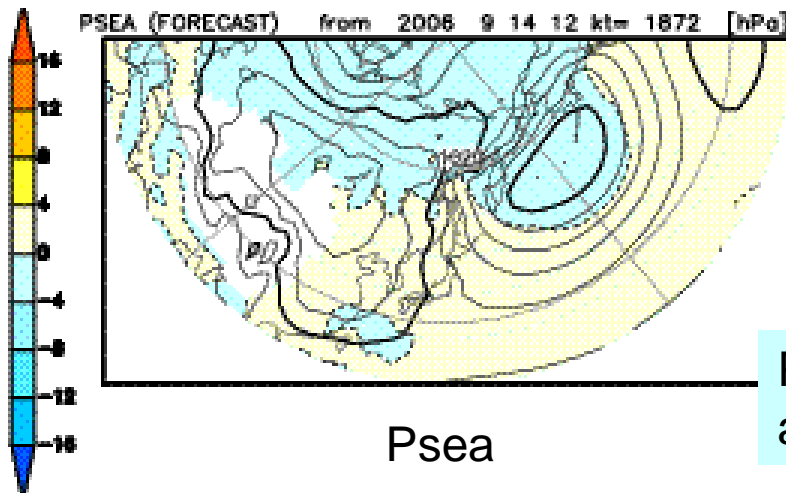


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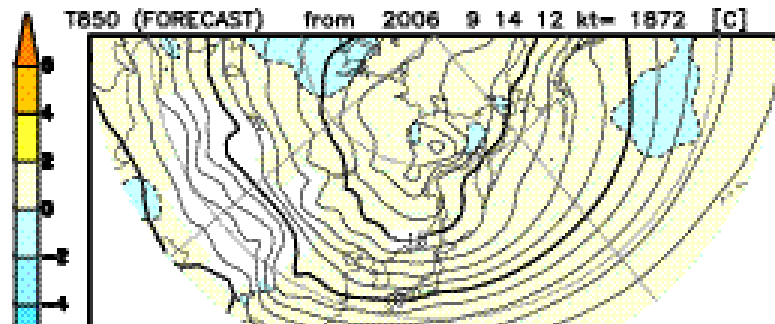
Predicted sea level pressure anomalies in the Asian Monsoon Region



DJF 2006/2007, initial: 2006.9.14

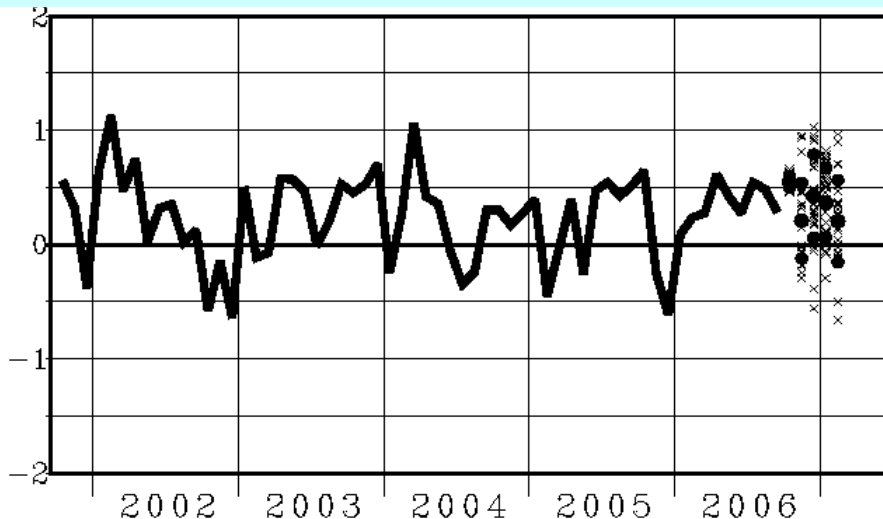
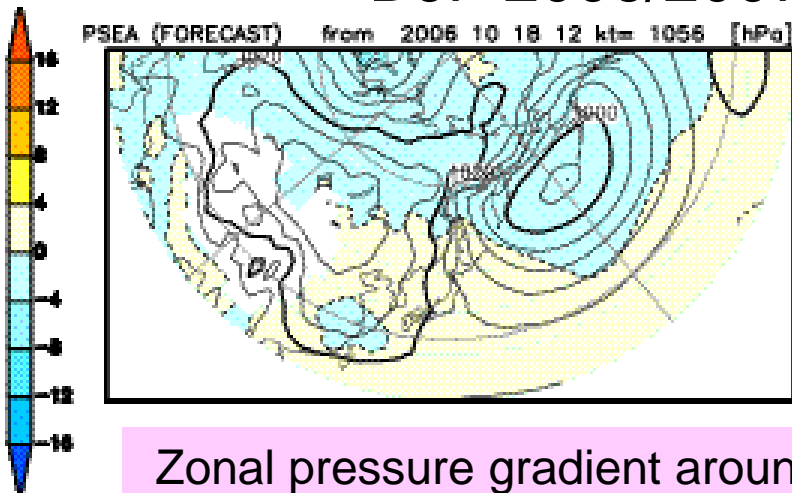


Psea



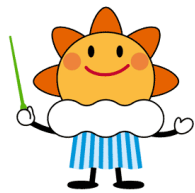
Prediction of zonal mean thickness temperature anomaly in the NH mid-latitudes (30N-50N)

DJF 2006/2007,



Zonal pressure gradient around Japan is not stronger than normal.
Warm temperature anomaly prevails over the Eurasian continent

Summary



Outlook of Atmospheric Condition in the Tropics

- Winter-mean atmospheric circulation fields in the tropics and sub-tropics resemble the ones typically observed during El Niño events, corresponding to the weak El Niño-like SST anomalies fed to the AGCM.

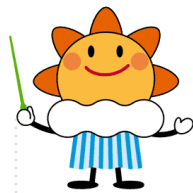
Outlook of East Asian Winter Monsoon

- The predicted probabilities of above-normal category of 500 hPa geopotential height anomalies are high in eastern Asia, which suggest weaker-than-normal winter monsoon and above-normal temperatures will be dominant over eastern Asia. However, there are large uncertainty in the area where the climate is strongly affected by the Arctic Oscillation (AO), which is predicted to be near-normal with large spread.

2. 2006/2007 Cold Season Outlooks for Japan

< URL: <http://okdk.kishou.go.jp/outlooks/outlook3c.html> >

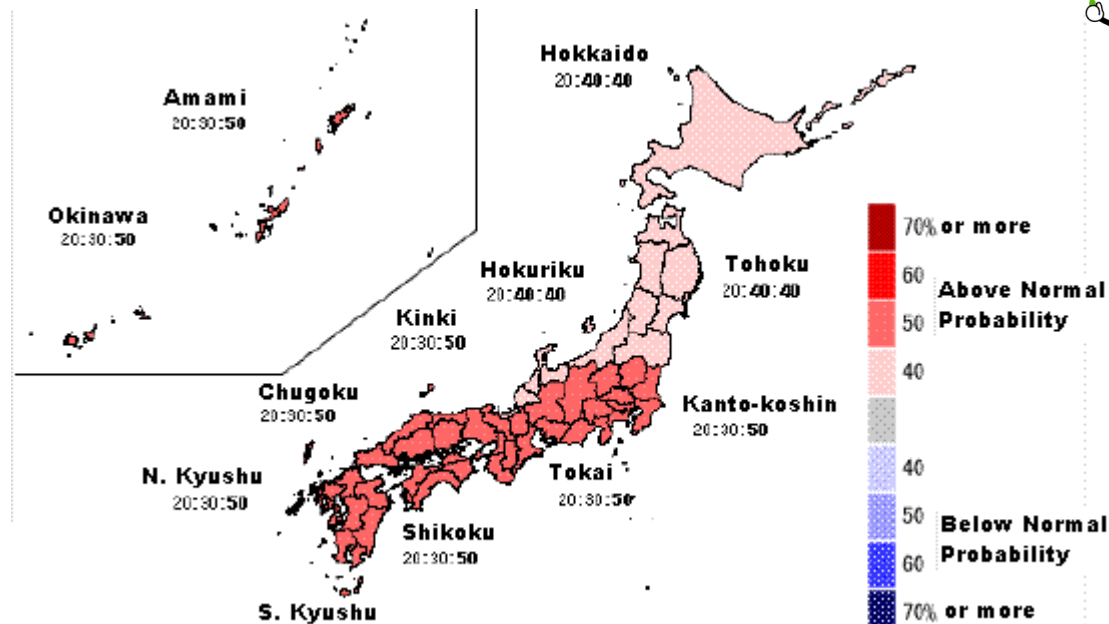
issued on 25 September 2006



Temperature Outlook for 2006/07 DJF

**Slightly above normal
(40%)** in Northern Japan

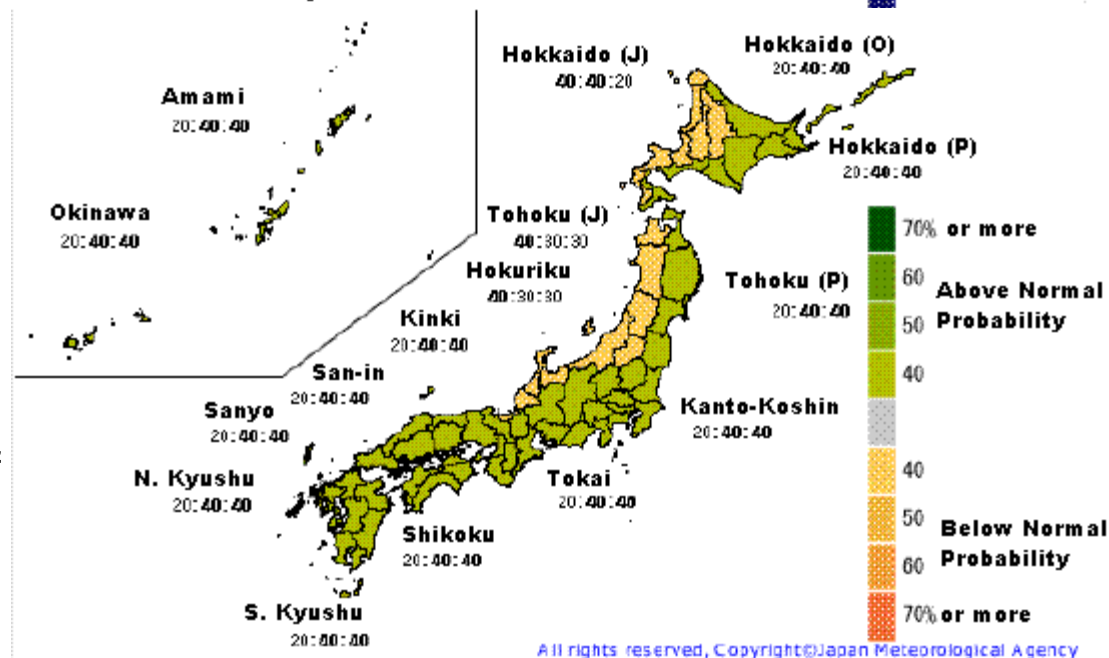
Above normal (50%) in
Eastern Japan, Western
Japan and SW Islands

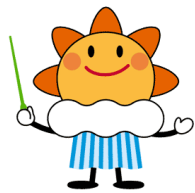


Precipitation Outlook for 2006/07 DJF

**Slightly below normal
(40%)** in the Japan Sea
side of Northern and
Eastern Japan

**Slightly above normal
(40%)** in the Pacific side of
Northern Japan, Western
Japan and SW Islands





Grounds for the Outlook

- Active convective area is likely to shift eastward to the central Pacific, responding to the weaker east-west gradient of SST along the equator in the Pacific.
- The above tropical condition suggests that eastern Asia is likely to be covered by positive 500 hPa height and positive sea level pressure anomalies, which means weaker than normal cold winter monsoon surges and warmer than normal temperatures around Japan.
- Zonal mean thickness temperature in the NH mid-latitudes (30-50N), which has good positive relationship with surface temperatures in Japan, has long-term tendency to be warmer than normal and is predicted to be above normal.
- The AO index, which shows the situation of the polar air accumulation and discharge, has a long-term tendency to be negative. That means temporary cold air surges are likely especially in the northern parts of Japan.

*Thank you
for your attention.*