Exercise – Part II
Production of climate analysis information

Objective and Schedule

• Acquire skills for analyzing climate system and making climate analysis information.

Schedule

	Lecture/practice
<28 November>	
2:00 – 6:00 p.m.	Analyze your selected event
<29 November>	
9:30 a.m. – 0:30 p.m.	Analyze your selected event Prepare for your presentation; making information
2:00 – 3:30 p.m.	Prepare for your presentation; making information
3:50 – 6:00 p.m.	Presentation (6 persons; 25 min for each)
<30 November>	
9:30 a.m. – 0:30 p.m.	Presentation (7 persons; 25 min for each) Submitting information
0:30 – 0:45 p.m.	Wrap up and closing
2:00 – 6:00 p.m.	Technical tour

Procedure of the exercise

You are requested to:

- At first, decide a past climate event with impact on your country. A targeted event is monthly/seasonal-scale event (not a particular weather event such as a tropical cyclone);

- Analyze your selected climate event, using TCC products and tools (ClimatView and ITACS) and referring to lecture materials;

- Make climate analysis information (one or more pages);

- Make a PPT material (10 or less slides);

- Present your PPT material and discuss it with the others. (20 minutes for presentation and 5 minutes for Q&A and discussion)

Climate analysis information

Structure

1: Surface climate conditions

Assess surface climate conditions, and if possible related impacts referring to official information source.

2: Characteristic atmospheric circulation

Identify atmospheric circulation directly contributing to the targeted surface climate conditions.

3: Factor analysis (if possible)

Investigate the possible factors associated with the identified atmospheric circulation directly contributing to the targeted surface climate conditions.

Other points

- Make information as a MS-Word file with one or more pages.
- Submit your-making information on the last day (30 Nov.) (send email to tcc3167@hotmail.co.jp)

PPT material

Structure

1: Surface climate conditions

2: Characteristic atmospheric circulation

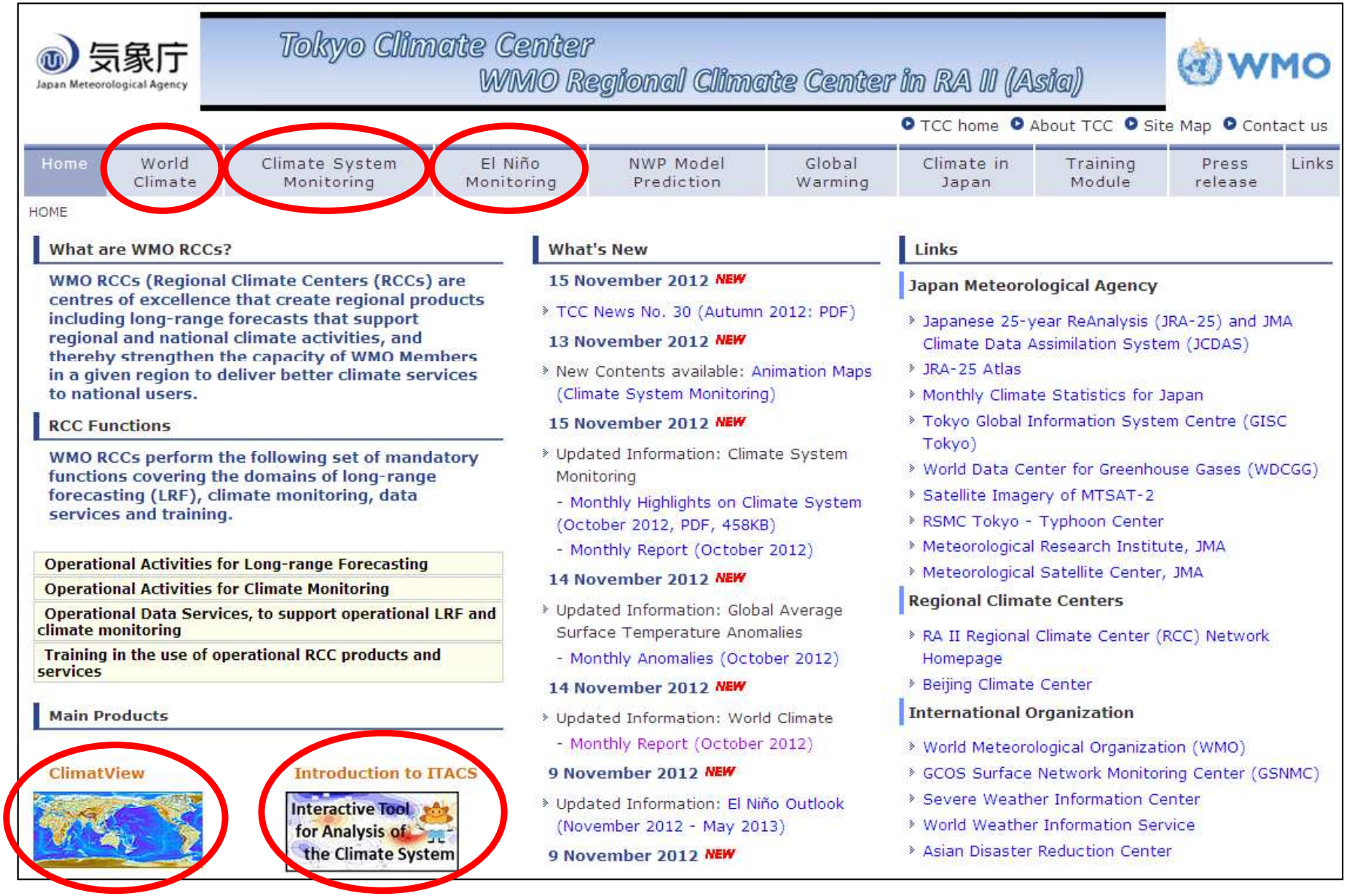
3: Factor analysis (if possible)

Other points

• Prepare 10 or less slides, considering 20 min. presentation.

TCC website (home page)

http://ds.data.jma.go.jp/tcc/tcc/index.html



World Climate

http://ds.data.jma.go.jp/tcc/tcc/products/climate/index.html

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HOME > World Climate

World Climate

JMA monitors the global climate with CLIMAT and SYNOP reports from NMHSs through the Global Telecommunication System (GTS) of WMO. Quality-checked data on temperature and precipitation are assembled to assess extreme climate events. Weekly, monthly and seasonal monitoring reports on extreme climate events with brief descriptions of disastrous events are available on this page, along with world distribution maps of temperature and precipitation.
Climatological normals for temperature and precipitation are based on the period 1981-2010.

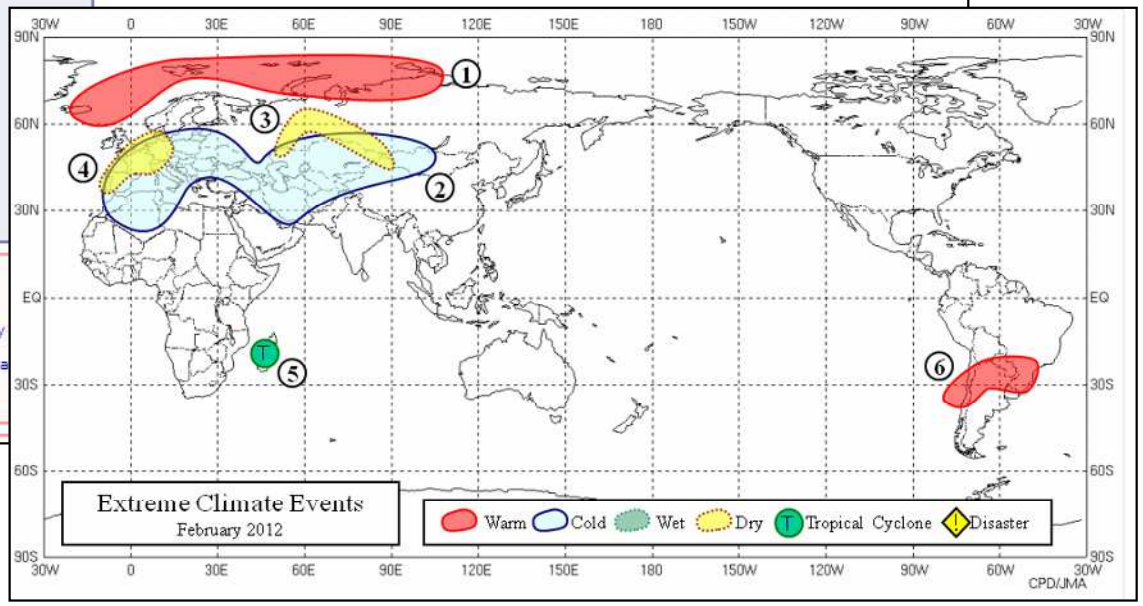
Main Products

Extreme Climate Monitoring

- Weekly Report (14 Nov 2012)
- Weekly Anomaly (14 Nov 2012)
- Monthly Report (14 Nov 2012)
- Seasonal Report (14 Sep 2012)
- Annual Report (17 Jan 2012)
- Weekly circulations & convective activities in the Tropics (18 Nov 2012)
- Weekly atmospheric field in the extra-tropics (15 Nov 2012)

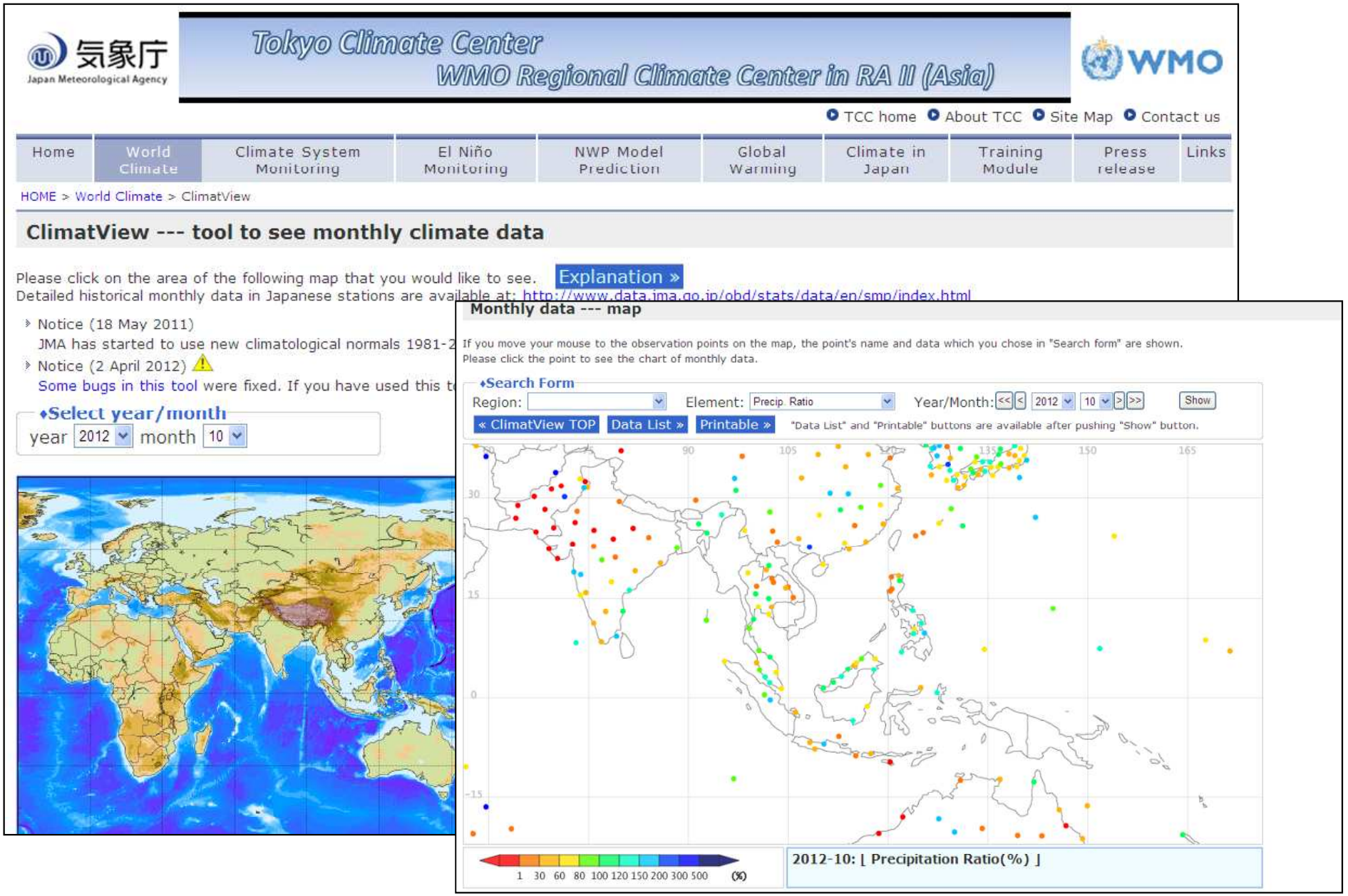
Normal & Historical Data

- ClimatView: Monthly Historical & Normal Data (All available stations) (18 May
- Normals of Monthly Mean Temperature and Precipitation (Global Map) (18 Ma
- Monthly Normals Data (Principal Stations) (8 Dec 2011)



ClimatView

http://ds.data.jma.go.jp/gmd/tcc/climatview/



Asian monsoon monitoring

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/ASIA_TCC/index.html

Asian Monsoon Monitoring

Reports on specific events

16 November 2012 NEW
- Summary of the 2012 Asian summer monsoon

16 November 2012 NEW
- Extremely hot late-summer conditions in northern and eastern Japan in 2012

10 May 2012
- Asian Winter Monsoon Summary for 2011/2012

6 February 2012
- Cold wave over the Eurasian continent

28 November 2011
- Summary of the 2011 Asian summer monsoon

31 October 2011
- Heavy rainfall over the Indochina Peninsula for June - Se

Analysis charts and monitoring indices

- Explanation of Data and Figures

Animation maps

- Asia, Global, Northern Hemisphere, Southern Hemispher

Monitoring Indices

- ENSO and Asian monsoon monitoring indices

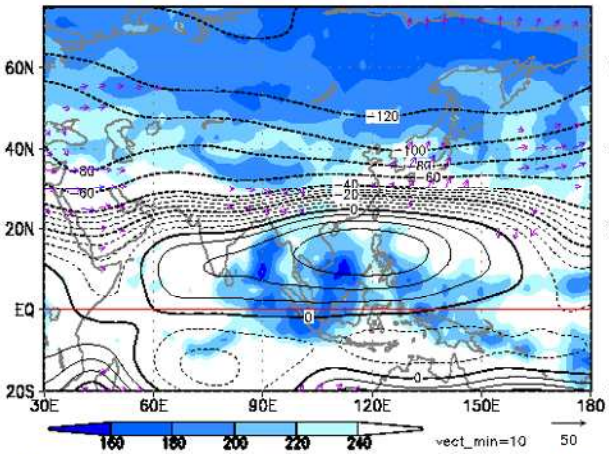
Animation Maps (Asia Area)

5-day mean Year 2012 Month 11 Day 15 -> Draw

Oldest -1-day +1-day Latest Animation Start Stop Slow Fast Direction Normal

OLR & 200-hPa Stream Function & Wave Activity Flux

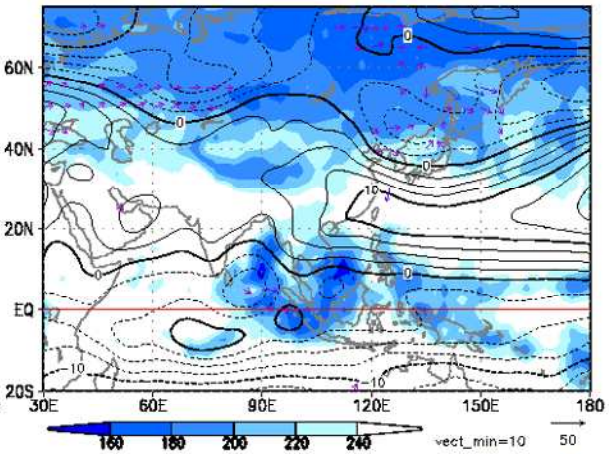
2012.11.11 – 2012.11.15



The shading indicates outgoing longwave radiation (OLR; W/m²). The contours show 200-hPa stream function at intervals of 5×10^6 m²/s. The vectors denote 200-hPa wave

OLR & 850-hPa Stream Function & Wave Activity Flux

2012.11.11 – 2012.11.15



The shading indicates outgoing longwave radiation (OLR; W/m²). The contours show 850-hPa stream function at intervals of 2.5×10^6 m²/s. The vectors denote 850-hPa

Analysis charts and monitoring indices

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/acmi.html

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HOME > Climate System Monitoring > Analysis Charts and Monitoring Indices

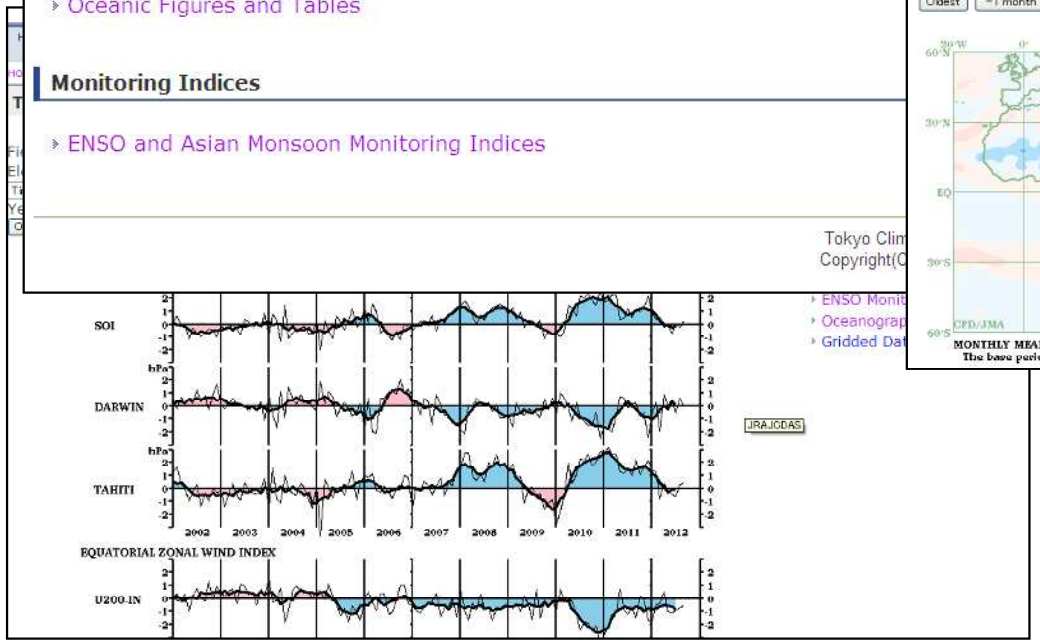
Analysis Charts and Monitoring Indices

Analysis Charts

- 5-day Mean Figures
- 10-day Mean Figures
- Monthly Mean Figures
- 3-month Mean Figures
- Time Cross Section and Indices
- Oceanic Figures and Tables

Monitoring Indices

- ENSO and Asian Monsoon Monitoring Indices



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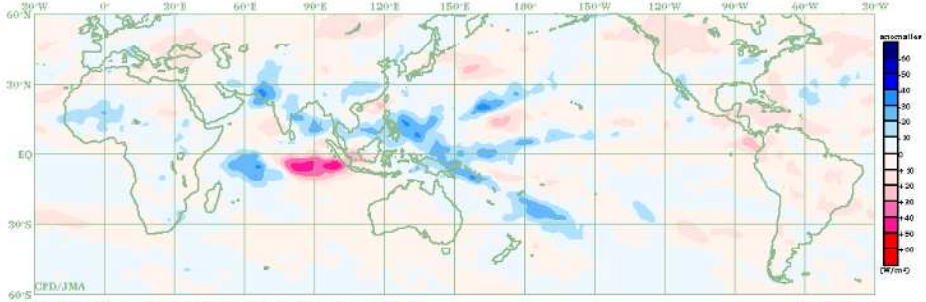
HOME > Climate System Monitoring > Analysis Charts and Monitoring Indices > Monthly Mean Figures

Monthly Mean Figures of Atmospheric Circulation and Snow Cover

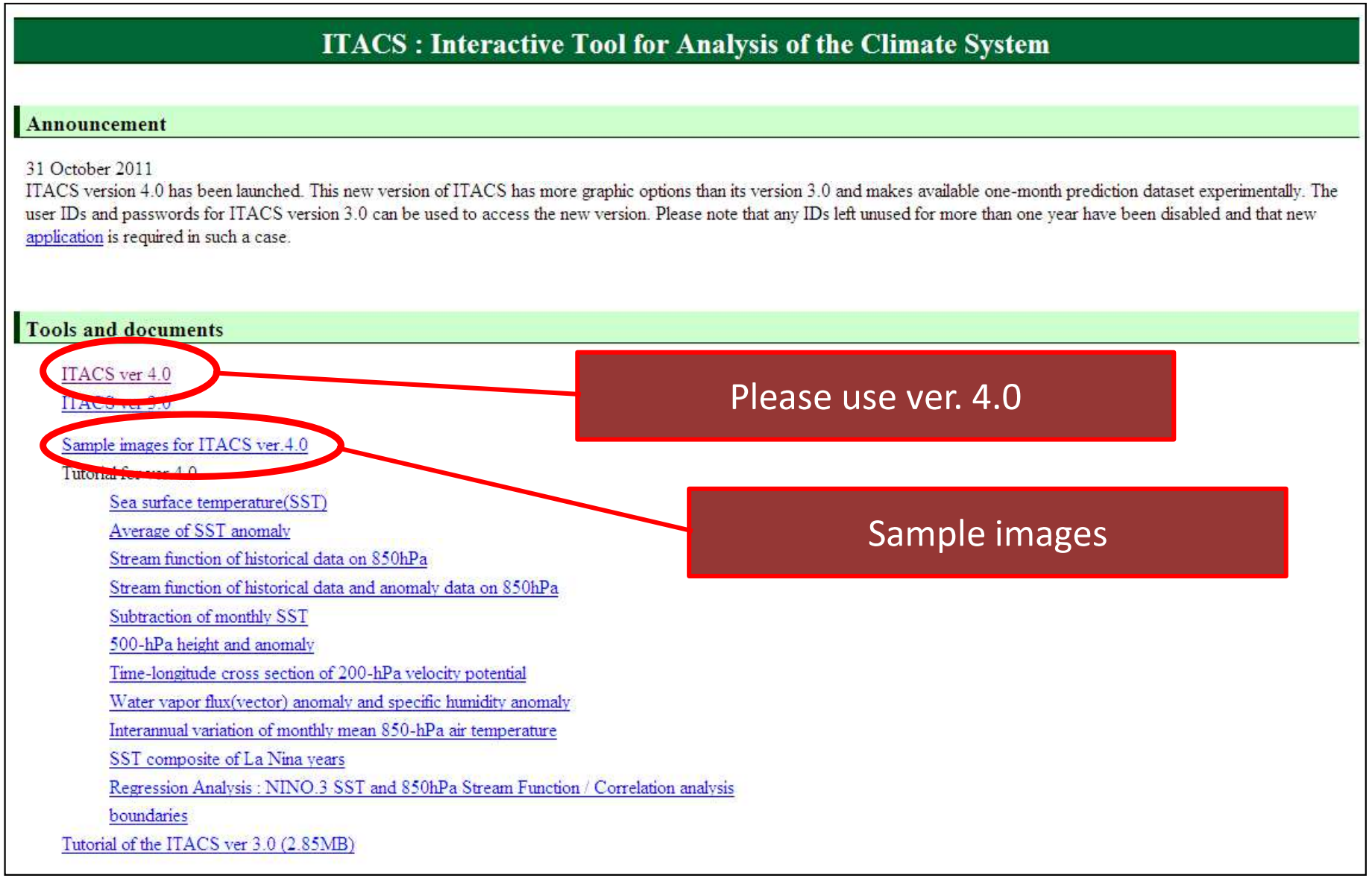
Field: Tropics | Hist: Hist & Anom
Element & Pressure Surface: Outgoing Longwave Radiation (OLR) Anomaly
Year: 2012 | Month: 9 | -> | Draw
Oldest | -1 month | +1 month | Latest | Animation | Start | Stop | Slow | Fast | Direction: Normal



Other figures
- 5-day Mean
- 10-day Mean
- Monthly Mean
- 3-Month Mean
- Time Cross Section & Indices
- ENSO Monitoring Indices
- Oceanographic Conditions
- Gridded Data (text format)

ITACS

http://extreme.kishou.go.jp/tool/itacs-tcc2011/



MJO products

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/mjo/moni_mjo.html

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Madden-Julian Oscillation (MJO)

Explanatory Notes

MJO Monitoring

- Phase and Amplitude monitor (last 40-day)
- Time-longitude cross section of phase and amplitude
- Time series of RMM1 and RMM2

Principal components of EOF (1980-2003)

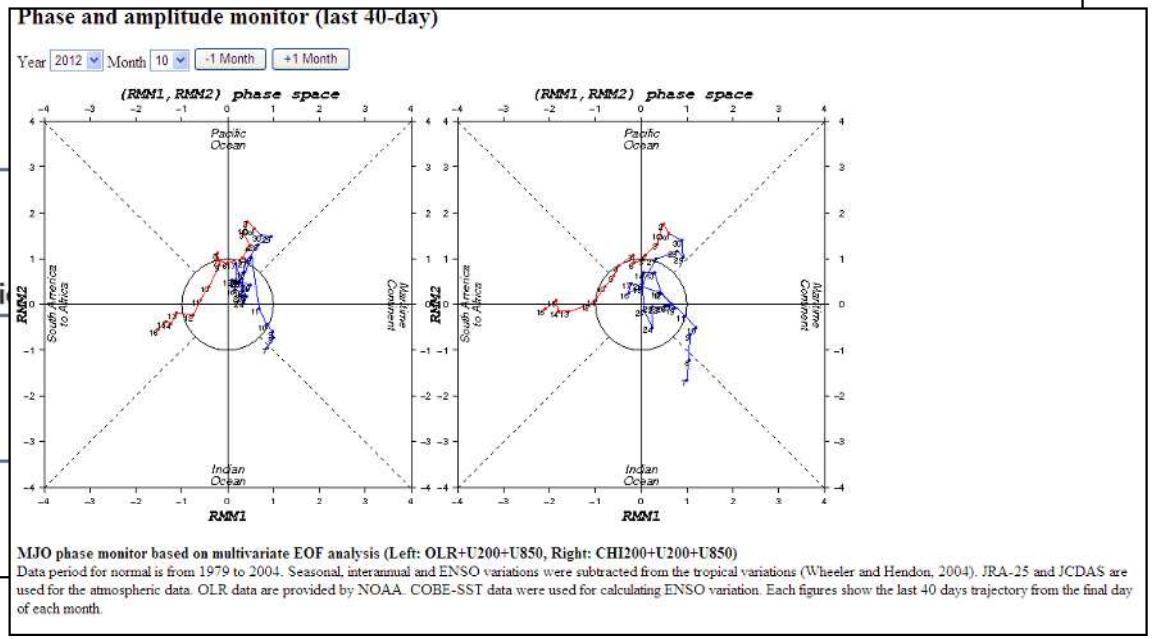
- 1st (RMM1), 2nd (RMM2)

Composite, Regression and Correlation map of anomali

- 8-phase (1980-2003)

CSV file (1980-)

- RMM1, RMM2, phase and amplitude (OLR+u850+u200)
- RMM1, RMM2, phase and amplitude (chi200+u850+u200)



MJO phase monitor based on multivariate EOF analysis (Left: OLR+U200+U850, Right: CHI200+U200+U850)

Data period for normal is from 1979 to 2004. Seasonal, interannual and ENSO variations were subtracted from the tropical variations (Wheeler and Hendon, 2004). JRA-25 and JCDAS are used for the atmospheric data. OLR data are provided by NOAA. COBE-SST data were used for calculating ENSO variation. Each figures show the last 40 days trajectory from the final day of each month.

El Niño monitoring

http://ds.data.jma.go.jp/tcc/tcc/products/elnino/index.html

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HOME > El Niño Monitoring

El Niño Monitoring and Outlook

JMA operates the Ocean Data Assimilation System and the El Niño Prediction System (an ocean-atmosphere coupled model) for monitoring and prediction of El Niño-Southern Oscillation (ENSO). Monthly diagnosis reports, ENSO monitoring products, ENSO indices and El Niño outlooks are available on this page.

Main Products

Latest Products last updated : 09 Nov 2012

- El Niño Outlook
- Figures and Tables
- Download El Niño Monitoring Indices
- Model forecast of SST anomalies for Niño regions

Animations

- SST and Anomaly
- Longitude-Depth Cross Section along the Equator

Gridded Data

- Download SST (COBE-SST from 1891 to the latest month)

ENSO Impacts

- Global Clima
- Atmosphere

Model Descriptions & Analysis Procedures

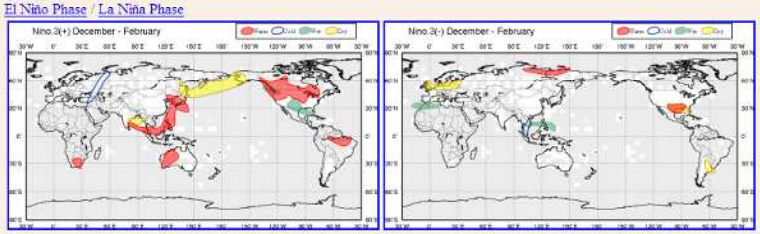
- Explanation of El Niño Monitoring Indices
- Description of Coupled Ocean-Atmosphere General Circulation Model (JMA/M
- Description of Ocean Data Assimilation System (MOVE/MRI.COM-G) since Mar

Global Climate Monitoring

World Climate associated with El Niño / La Niña events

Schematic View

- El Niño Phase / La Niña Phase



El Niño events in December to February | La Niña events in December to February

Schematic views show the areas to some degree in width with any consistent tendency for four seasons (DJF, MAM, JJA and SON) in El Niño/La Niña events.

Composite Analysis

- Composite Map

Composite maps with 5 x 5 degree grid data show the tendencies of temperature and precipitation in El Niño / La Niña phase in comparison with the neutral phase.

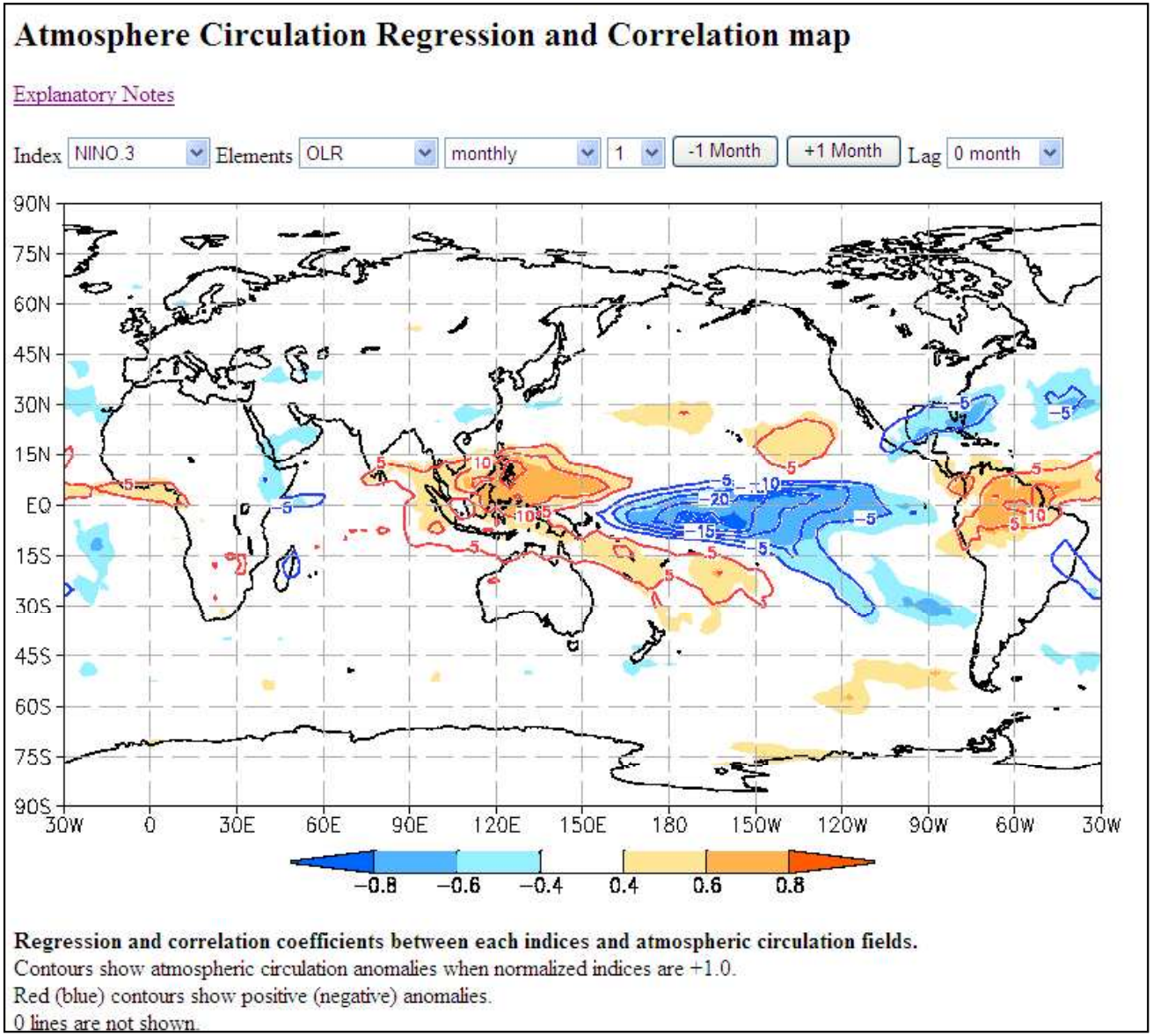
- Data Source / Calculating Method / Nino.3 Index

World Climate associated with other monitoring indices

- World Climate associated with Nino.West SST variation
- World Climate associated with IOBW SST variation

Statistical analysis related to ENSO

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/newoceanindex/index.html



Information on specific climate events

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/ASIA_TCC/index.html

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Asian Monsoon Monitoring

Reports on specific events

10 May 2012 NEW
- Asian Winter Monsoon Summary for 2011/2012

6 February 2012
- Cold wave over the Eurasian continent

28 November 2011
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31 October 2011
- Heavy rainfall over the Indochina Peninsula for June

Asian Winter Monsoon Summary for 2011/2012

Many parts of East and Central Asia experienced significantly below-normal temperatures throughout winter (December – February) 2011/2012. This report summarizes the related surface climate characteristics, atmospheric circulation and primary factors contributing to the cold conditions observed. The relevant factors were clarified based on investigation by JMA's Advisory Panel on Extreme Climate Events.

Note: JRA/JCDAS (Onogi et al. 2007) atmospheric circulation data and COBE-SST (JMA 2006) sea

e used for this investigation. The outgoing convective activity were originally provided

mid-latitudes experienced significantly low, while the northern part of Siberia and mperatures (Figure 1.1).

from December 2011 to February 2012. In d in eastern Mongolia and southern Central orthern Central Siberia to northern Western

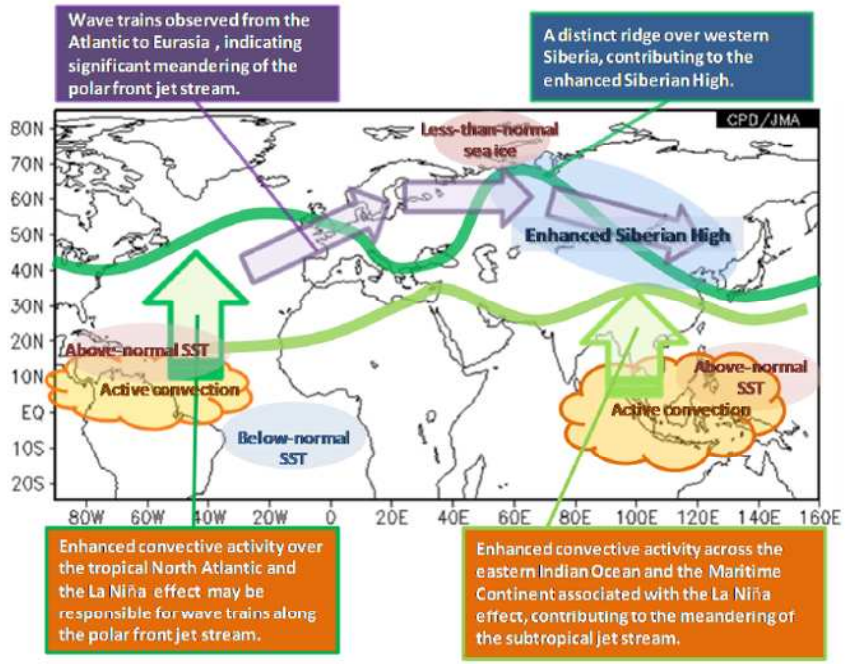
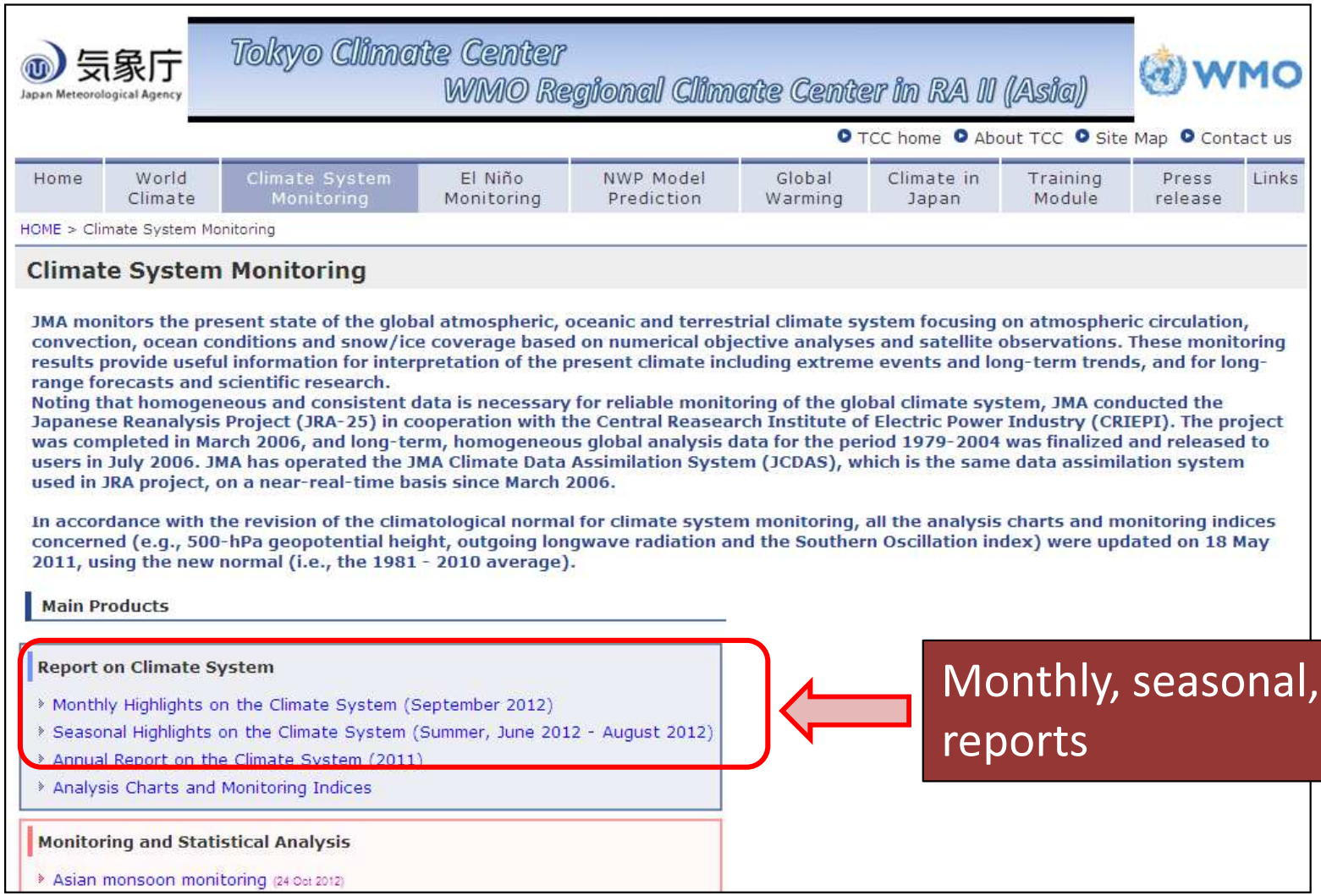


Figure 4.1 Primary factors contributing to the cold winter conditions of 2011/2012 in Central and East Asia

Monthly, seasonal and annual reports on climate system

http://ds.data.jma.go.jp/tcc/tcc/products/clisys/index.html



Monthly, seasonal, and annual reports