

Introduction of TCC & Outline and scope of this seminar

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Japan Meteorological Agency

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

Contents

- Introduction of TCC
- Outline and scope of this seminar

Tokyo Climate Center of the Japan Meteorological Agency (TCC/JMA)

- TCC serves as a WMO Regional Climate Center in the RA II.
- TCC supports NMHSs through data/information provision and capacity development activities.

Tokyo Climate Center (TCC)

Provision of climate data, information and tools via the Internet

- ❑ Seasonal forecasts
- ❑ El Nino Outlook
- ❑ Report on extreme events
- ❑ Global warming
- ❑ Climate system analysis
- ❑ Reanalysis data

Capacity Development

- ❑ Training seminar
- ❑ Expert visit

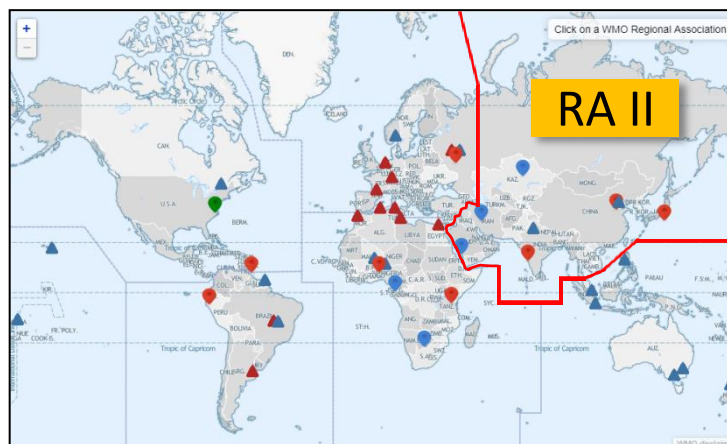
Asia and Pacific region

NMHSs

Provision of climate information using TCC data based on national requirements

Utilization of Climate Information

Disaster risk reduction, Food security, Water resource management etc.

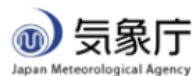


Current status of establishment of RCC

TCC was designated as RCCs in RA II in 2009.

- designated RCC
- ▲ designated RCC-Network
- RCC in demonstration phase
- ▲ RCC-Network in demonstration phase
- RCC proposed
- ▲ RCC-Network proposed

TCC Website



Tokyo Climate Center
WMO Regional Climate Center in RA II (Asia)



TCC home About TCC Site Map Contact us

Home	World Climate	Climate System Monitoring	El Niño Monitoring	NWP Model Prediction	Global Warming	Climate in Japan	Training Module	Press release	Links
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HOME

What are WMO RCCs

WMO RCCs are centres of excellence...

RCC Functions

Operational Activities for Long-range Forecasting

Operational Activities for Climate Monitoring

Operational Data Services, to support operational LRF and climate monitoring

Training in the use of operational RCC products and services

Latest Updates

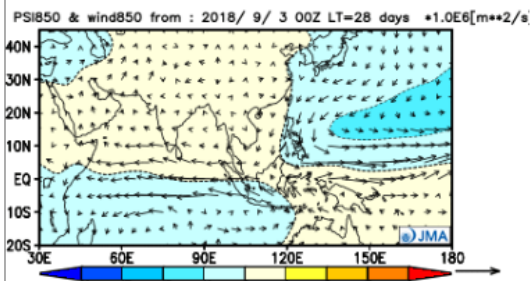
World Climate Updated: 14 September 2018

Climate System Monitoring Updated: 14 September 2018

El Niño Monitoring Updated: 10 September 2018

Monthly Discussion Updated: 25 September 2018

Monthly Discussion on Seasonal Climate Outlook No.55 is issued on 25 September 2018.



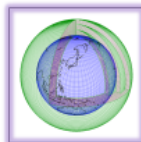
Ensemble forecast for stream function and wind vector at

Main Products



iTacs

iTacs, Interactive Tool for Analysis of the Climate System, is a web-based application to assist NMHSs to analyse extreme climate events and to monitor climate status.



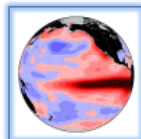
GPC Tokyo

Products of long-range forecast from Global Producing Center (GPC) Tokyo are available. These products are based on JMA's ensemble prediction system.



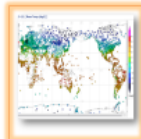
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This is intended to assist NMHSs in the Asia-Pacific region in interpreting GPC Tokyo's three-month prediction and warm/cold season prediction products.



El Niño Monitoring

"El Niño Outlook" consists of a diagnosis of current condition and prediction of El Niño/Southern Oscillation. This is issued every month around 10th.



ClimatView

The ClimatView tool enables viewing and downloading of monthly world climate data, including monthly temperature/precipitation statistics and 30-year climate normals.



TCC News

TCC News, a quarterly newsletter from Tokyo Climate Center, acquaints with significant climate disasters and

What's New



30 August 2018 **NEW**

- TCC News No. 53 (Summer 2018: PDF)
 - Upgrade of JMA's Supercomputer System
 - Primary Factors behind the Heavy Rain Event of July 2018 and the Subsequent Heatwave in Japan from Mid-July Onward
 - Sea Ice in the Sea of Okhotsk in the 2017/2018 Winter Season
 - Kosa (Aeolian dust) Events over Japan in January-June 2018
 - TCC Experts Visit the Philippines

22 August 2018 **NEW**

- Press release: Primary Factors behind the Heavy Rain Event of July 2018 and the Subsequent Heatwave in Japan from Mid-July Onward

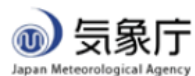
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 - World climate monitoring webpage revamp
 - TCC contributions to Regional Climate Outlook Forums in Asia

17 May 2018

- Announcement: World Climate Webpage revamp

TCC Website



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What are WMO RCCs

World Climate

Climate System Monitoring

El Niño Monitoring

NWP Model Prediction

Global Warming

Climate in Japan

Training Module

Press release

Links

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Latest Updates

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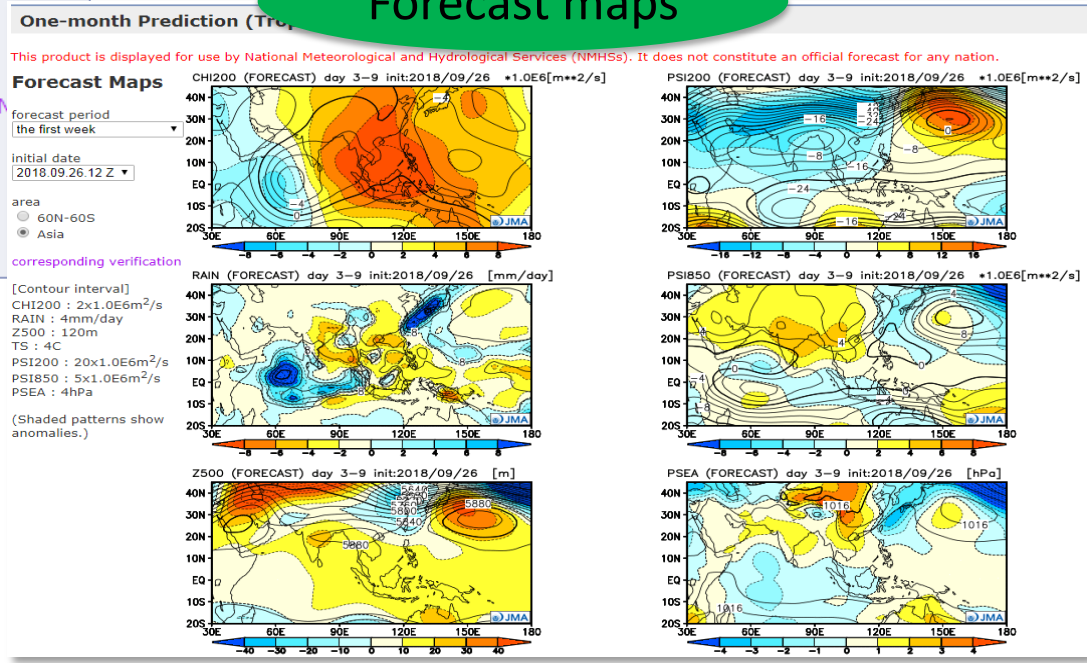
PS1850 & wind850 from : 2018/ 9/ 3 00Z LT=28 days +1.0E6[m**2/s]

Ensemble forecast for stream function and wind vector at

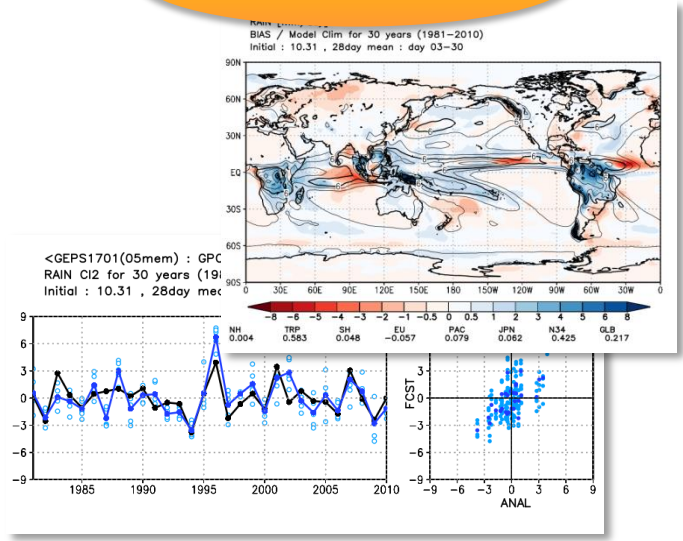
NWP Model Prediction

- One-month Prediction**
- ▶ One-month Prediction (27 Sep 2018)
 - ▶ Z500, T850 & SLP (Northern Hemisphere) (27 Sep 2018)
 - ▶ Stream Function, Velocity Potential & Surface Air Temperature (27 Sep 2018)
 - ▶ Verification (30 Sep 2018)
 - ▶ Hindcast Verification **NEW!**
 - ▶ One-month Probabilistic Forecasts at station points

Forecast maps



Verification



➤ Various results based on hindcast experiment are also available on this page.

NWP Model Prediction

Download GPC Long-range Forecast (LRF) Products

Download Gridded data File (Only registered NMHSs can access this page.)

Application

- If you have any questions about ID and/or password, please e-mail tcc@met.kishou.go.jp

**Password protected
We will give you later !**

Download Gridded Data File

Notice

- 14 March 2017 Announcement: Launch of the JMA's Global Ensemble Prediction System for one-month prediction
- 17 June 2015 JMA's new Seasonal Ensemble Prediction System (JMA/MRI-CPS2) is implemented. The additional gridded data indices are available.

Main Products

- NWP Model Prediction**
 - Global EPS for one-month prediction (26 Sep 2018)
 - Daily Statistics
 - All Members
 - Systematic Errors
 - Seasonal EPS (08 Sep 2018)
 - Statistics
 - All Members
 - Indices
 - Systematic Errors

Animation of One-month Prediction

- Seven-days running mean (26 Sep 2018)

Animation for one-month prediction (7-days running mean)

This product is displayed for use by National Meteorological and Hydrological Services (NMHSs). It does not constitute an official forecast for any nation.

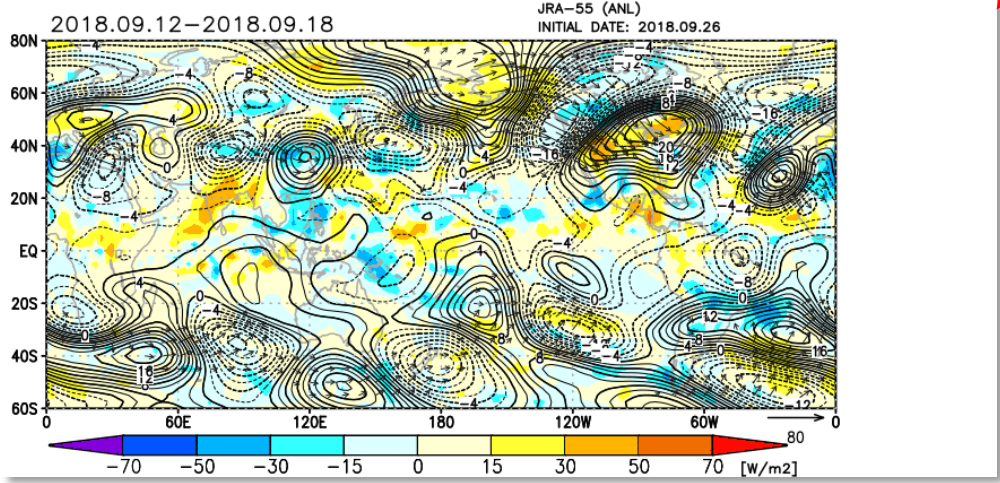
Initial date: 2018.09.26 Forecast lead time: Day -11

Setting for Animation

Oldest (lead Day -11) -1 day Initial +1 day Termination (lead Day +28) Animation: Start Stop << (Slow) >> (Fast)

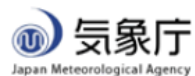
week-1 week-2 week-3 week-4

Parameter: PSI200 Anomaly & Rain Anomaly (Tropics)



➤ 7-day averaged animation maps for one-month forecast are available.

TCC Website



Tokyo Climate Center

Main products

WMO Regional Climate Center in RA II (Asia)

Latest news of TCC's activities



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HOME

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Update information on TCC products

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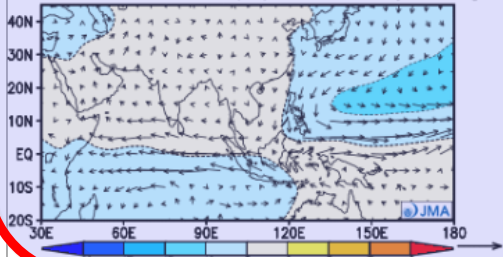
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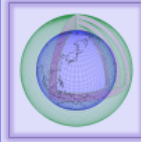
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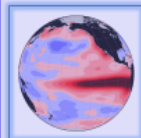
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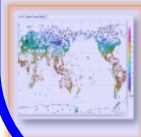
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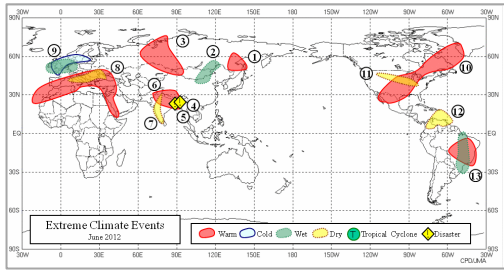
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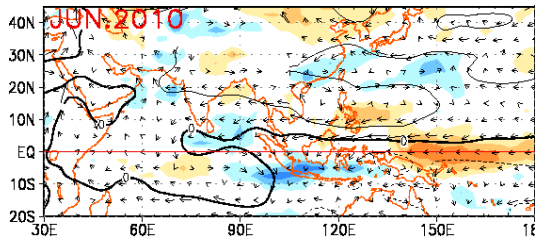
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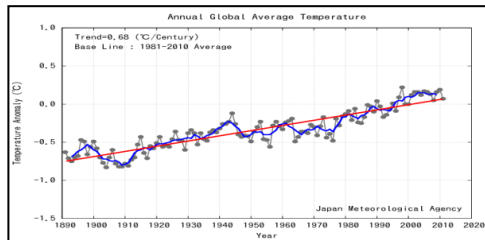
Examples of climate information, data, tool and products



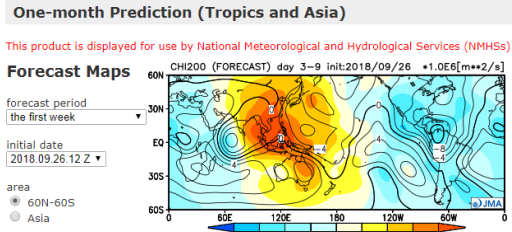
Monitoring of Extreme Climate Events



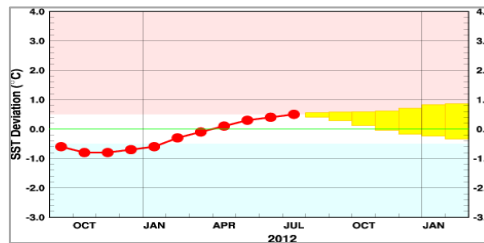
Asian Monsoon Monitoring



Global Average Surface Temperature Anomalies

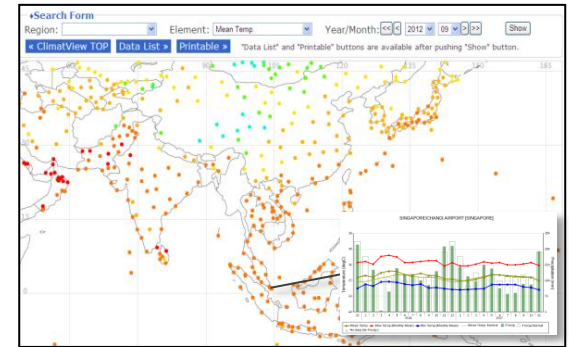


One-month Forecast maps



El Niño outlook

Gridded Data(1-month, 3-month, Seasonal forecast)



Climate database

iTacs

Interactive Tool for Analysis of the Climate System (iTacs)

Improvements of NWP technology allows us to provide a new service, **2 weeks temperature forecast**.

Weekly forecast

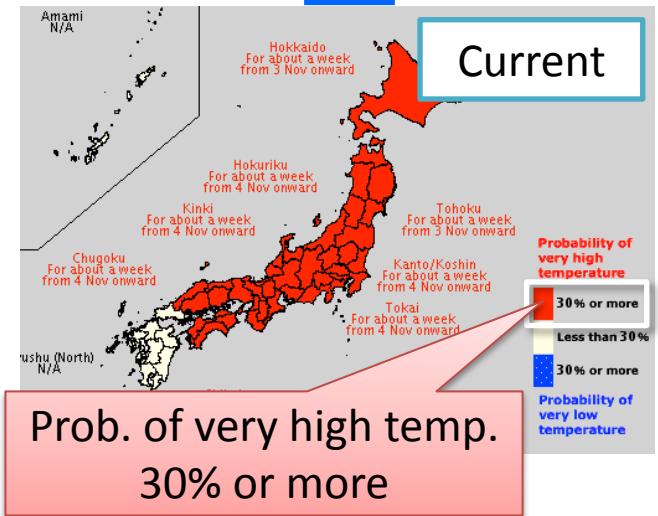
Date	Day1	Day2	Day3	Day4	Day5	Day6	Day7
Tokyo Daily Forecast							
Probability of precipitation (%)	-0/0/10	0/0/0/0	10	10	10	30	40
Reliability	/	/	A	A	A	A	C
Tokyo	High (°C)	30	32 (30 ~ 34)	34 (31 ~ 36)	33 (31 ~ 36)	30 (28 ~ 32)	30 (28 ~ 32)
	Low (°C)	/	24 (24 ~ 26)	25 (24 ~ 26)	26 (24 ~ 27)	26 (24 ~ 27)	24 (22 ~ 26)

2weeks temperature forecast

New!!

		Day8	Day9	Day10	Day11	Day12
Tokyo	High (°C)	34 (32-36)	34 (32-36)	33 (31-35)	33 (31-35)	32 (30-34)
	Low (°C)	27 (25-29)	27 (25-29)	26 (24-28)	25 (23-27)	24 (22-26)

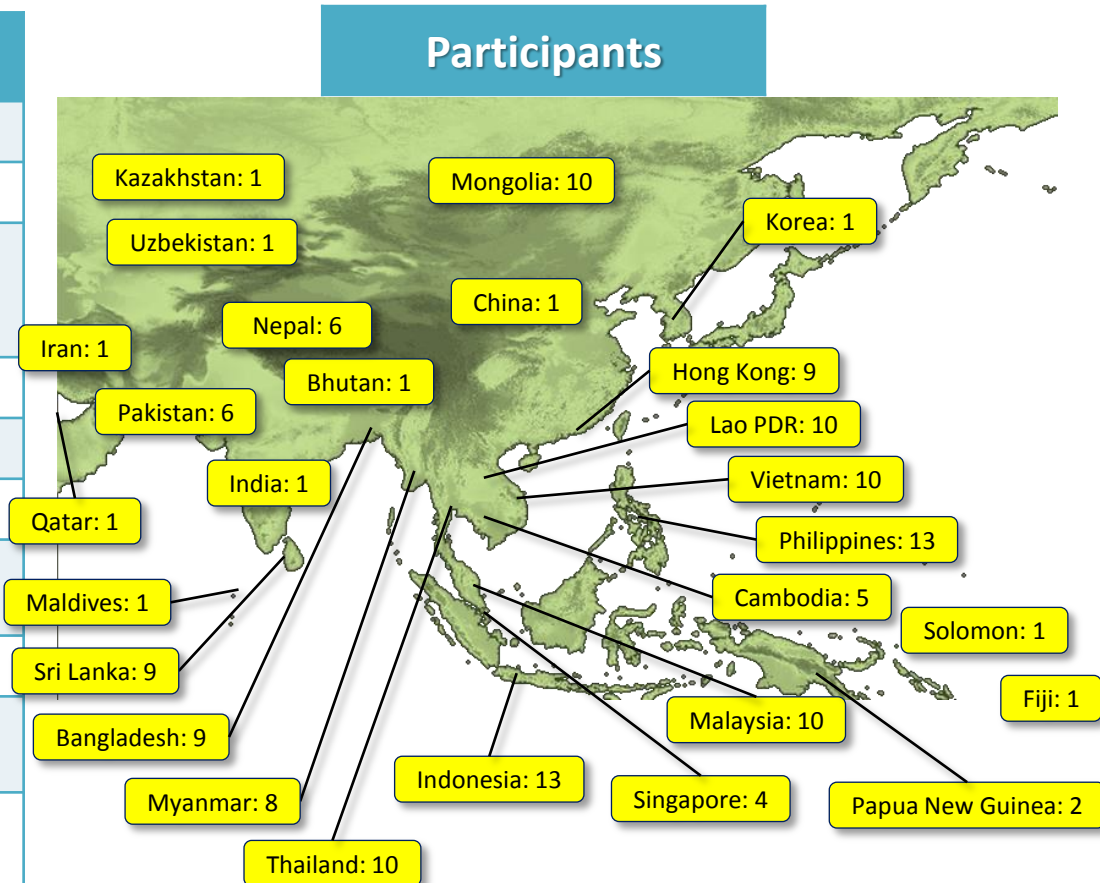
- Currently, we provide early warnings for extreme high/low temperature events for two weeks ahead. This information is targeted for 11 regions in Japan and provided twice a week only in probabilistic form.
- New service (planned to start next year) allows users to check **temperature value** (5day running mean) **for a specific station every day**.



Though this is a domestic service, we believe such technology development also contributes to the improvement of TCC products.

- TCC has organized an annual one-week training seminar since 2008 attended by a dozen of invited experts from NMHSs in Asia-Pacific region.
- Each seminar deals with a different theme from climate analysis, long-range forecast and global warming projection.

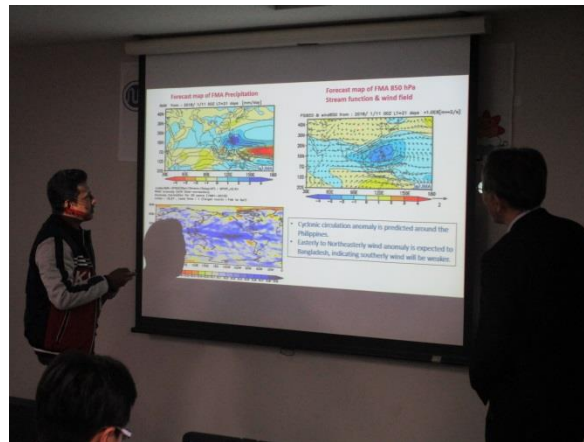
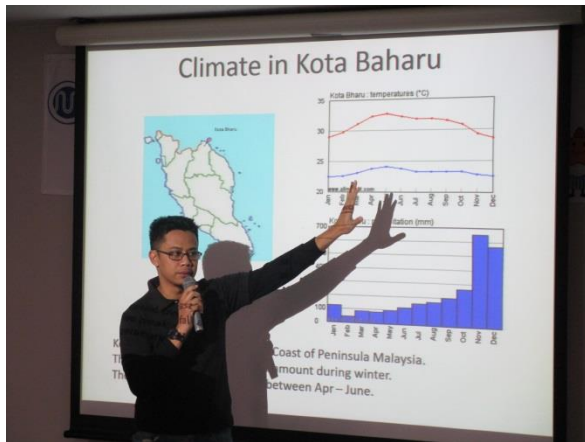
Theme		
1	Nov. 2008	Climate Information and Forecasting
2	Dec. 2009	Climate Analysis using Reanalysis Data
3	Jan. 2011	Application of Seasonal Forecast Gridded Data to Seasonal Forecast Products
4	Nov. 2011	One month Forecast Products
5	Nov. 2012	Climate Analysis Information
6	Nov. 2013	Seasonal Forecast Products
7	Jan. 2015	Global Warming Projection Information
8	Nov. 2015	One-month Forecast
9	Nov. 2016	Primary Modes of Global Climate Variability and Regional Climate
10	Jan. – Feb. 2018	Seasonal Forecast
11	Nov. 2018	One-month Forecast



Lecture and Exercise session



Presentation on results of the exercise



TCC Training Seminar on Seasonal Forecast (29 January to 2 February 2018)

Contents

- Introduction of TCC
- **Outline and scope of this seminar**

Purpose of this Seminar and its schedule

Purpose

- To familiarize the participants with outputs of JMA's numerical prediction model and tools for one-month forecast
- To assist the participants in improving skills in generating one-month forecast products using statistical downscaling methods

Schedule

See p. ii of the textbook for more detailed information

Day 1 (12 th Nov.)	Introduction to Climatology	lecture
	Introduction of reanalysis and the Japanese 55-year Reanalysis (JRA-55)	lecture
	Introduction and operation of iTacs (Basic)	exercise

Day 2 (13 th Nov.)	One-month Forecast	lecture
	Introduction of climate monitoring and analysis products for one-month forecast	lecture
	Introduction of global ensemble prediction system for one-month forecast	lecture
	Introduction and operation of iTacs (Advanced)	exercise
	Introduction of one-month forecast guidance	lecture
Day 3 (14 th Nov.)	One-month Forecast - Producing guidance and verification	exercise
	Interpretation of guidance, verification result and outputs from NWP	lecture
Day 4 (15 th Nov.)	Generating one-month forecast for your own country - Preparation of the presentation	exercise
	Presentation by participants	presentation!
Day 5 (16 th Nov.)	Presentation by participants (cont.)	presentation!

- **Please keep in mind that toward the end of the seminar, you will be requested to make a brief presentation on one-month forecast for your own country. The details will be shown in Day 2 (tomorrow).**

Some remarks on presentation session

The presentation session is scheduled to be held in the evening of Day 4 (Thu.) and in the morning of Day 5 (Fri.).

[Proposed order of speakers]

In the presentation session, participants will be invited to speak **in reverse alphabetical order of country name**.

[Format of presentation session]

All speakers are allocated 15 minutes of presentation, followed by 5 minutes of question and answer time.

[Prototype of presentation material]

A prototype of presentation material will be provided on Day 2 (Tue.). You can build your presentation either using this prototype or on your own, and we allocate a slot for preparation of the presentation in Day 4 (Thu.).

Day 4 (Thu. 15 th Nov.)	15:00-15:20	Viet Nam
	15:20-15:40	Thailand
	15:40-16:00	Sri Lanka
	Coffee Break	
	16:20-16:40	Philippines
	16:40-17:00	Pakistan
	17:00-17:20	Nepal
	17:20-17:40	Myanmar
	17:40-18:00	Mongolia
Day 5 (Fri. 16 th Nov.)	09:30-09:50	Malaysia
	09:50-10:10	Lao PDR
	10:10-10:30	Indonesia
	10:30-10:50	Hong Kong
	Coffee Break	
	11:10-11:30	Cambodia
	11:30-11:50	Bhutan
11:50-12:10	Bangladesh	

Training Module on the website

Materials and presentations of training seminars are available on the TCC website.



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HOME > Documents Library

Document Library (Materials on TCC Training Seminar and Regional Climate Outlook Forum)

This is the location of our documents/presentations on research and development activities and training modules for capacity building on climate monitoring and seasonal forecasting.

Main Products

Training Modules

- ▶ [TCC Training Seminar on Seasonal Forecast \(29 January - 2 February 2018\)](#) **NEW**
- ▶ [TCC Training Seminar on Primary Modes of Global Climate Variability and Regional Climate \(14 - 18 November 2016\)](#)
- ▶ [TCC Training Seminar on One-month Forecast \(16 - 20 November 2015\)](#)
- ▶ [TCC Training Seminar on Global Warming Projection Information \(26 - 30 January 2015\)](#)
- ▶ [TCC Training Seminar on Seasonal Prediction Products \(11 - 15 November 2013\)](#)
- ▶ [TCC Training Seminar on Climate Analysis Information \(26 - 30 November 2012\)](#)
- ▶ [TCC Training Seminar on One-month Forecast Products \(7-9 November 2011\)](#)
- ▶ [TCC Training Seminar on Application of Seasonal Forecast GPV Data to Seasonal Forecast Products \(18-21 January 2011\)](#)
- ▶ [TCC Training Seminar on Climate Analysis using Re-analysis Data \(1-4 December 2009\)](#)

Abstracts and Presentations by JMA

- Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAII)
- East Asia winter Climate Outlook Forum (EASCOF)
- South Asian Climate Outlook Forum (SASCOF)
- ASEAN Climate Outlook Forum (ASEANCOF)

Training Module: <https://ds.data.jma.go.jp/tcc/tcc/library/index.htm>