

**WMO OMM**

World Meteorological Organization
Organisation météorologique mondiale
Organización Meteorológica Mundial
Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
世界气象组织

Secrétariat

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Our ref.: WCAS/LC-LRFMME

GENEVA, 30 September 2016

Annex: 1 (available in English only)

Subject: World Meteorological Organization Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME) Website

Action required: Sign up and provide feedback through an online user survey conducted from **October to December 2016**

Dear Sir/Madam,

In 2006, the World Meteorological Organization (WMO) began the process of designating centres producing global seasonal forecasts and making them operationally available to all WMO Members as an integral part of the WMO Global Data-Processing and Forecasting System (GDPFS). Within this framework, these centres, designated as Global Producing Centres for Long-range Forecasts (GPCLRFs), adhere to well-defined standard procedures, aiding the consistency and usability of specific forecast production cycles, defined sets of forecast products and WMO standard verification procedures. Up to now, WMO has designated 12 GPCLRFs and two lead centres; the WMO Lead Centre for Long-range Forecast Multi-Model Ensemble (LC-LRFMME) and the WMO Lead Centre for the Standardized Verification System for Long-range Forecast (LC-SVSLRF).

The LC-LRFMME, jointly coordinated by the Korea Meteorological Administration (KMA) and the National Oceanic and Atmospheric Administration (NOAA)/Climate Prediction Centre, assembles and makes available forecast information from the 12 GPCLRFs, which follow agreed procedures and products in the delivery of global long-range forecasts, in order to increase reliability. A flyer providing details on the structure of and services provided by the LC-LRFMME is attached herewith for your information.

WMO Members can access the wide range of products provided by the LC-LRFMME through its website located at <https://www.wmolc.org/>. I encourage you to sign up for an account to utilize available products, and to participate in the 2016 user survey, which is accessible on the above-mentioned website from October to December 2016. Your feedback will provide a better understanding of the specific needs of WMO Members for the further improvement of the LC-LRFMME's services.

I thank you in advance for your cooperation.

Yours faithfully,

(E. Manaenkova)
for the Secretary-General

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services) of Members of WMO (PR-6933)



WMO LC-LRFMME

12 WMO Global producing Centres (GPCs) for Long-Range Forecasts



- **Beijing:** China Meteorological Administration (CMA) / Beijing Climate Center (BCC)
- **CPTC:** Center for Weather Forecasting and Climate Research / National Institute for Space Research (INPE), Brazil
- **ECMWF:** European Centre for Medium-Range Weather Forecasts
- **Exeter:** Met Office, United Kingdom
- **Melbourne:** Bureau of Meteorology (BOM), Australia
- **Montreal:** Meteorological Service of Canada (MSC)
- **Moscow:** Hydrometeorological Centre of Russia
- **Pretoria:** South African Weather Services (SAWS)
- **Seoul:** Korea Meteorological Administration (KMA)
- **Tokyo:** Japan Meteorological Agency (JMA) / Tokyo Climate Center (TCC)
- **Toulouse:** Météo-France
- **Washington:** Climate Prediction Center (CPC) / National Oceanic and Atmospheric Administration (NOAA), United States of America

Goal



Provide

a conduit for sharing
global prediction models



Develop

a well-calibrated
MME system and
user-friendly services



Maximize

the benefit from
favorable climate
conditions

Background

- 12 WMO-designated Global Producing Centres (GPCs) for long-range forecasts
 - adhering to agreed procedures/standards in delivery of global long-range forecasts (e.g. products, timeliness, verification/validation info, system documentation)
- Linkage is needed among GPCs and other organizations including NMHSs, RCCs and RCOFs to ensure wider and more effective use of LRF

Objectives

- The LC-LRFMME aims to support collecting and sharing GPCs forecast information to increase the reliability of LRFs. Improved LRFs can help reduce socioeconomic losses associated with seasonal variability and protect life and property.

Functions of WMO LC-LRFMME

LC-LRFMME provides a conduit between GPC and NMHS, RCC, RCOF etc.



Available products of WMO LC-LRFMME

Digital products

Both forecast and hindcast of monthly mean anomalies of the GPCs' ensemble mean for lead time of 1-3 months, following the month of submission

- 2m surface temperature
- Precipitation
- Mean sea level pressure
- 850hPa temperature
- 500hPa geopotential height
- Sea surface temperature



Graphical products

Individual forecast

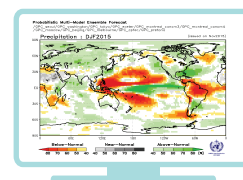
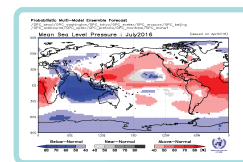
- Plots for each GPCs' forecast anomalies in common graphical format (Rectangular, Time series, Stereographic type, etc.)
- Consistency map
- SST Plume (Nino3.4 SST anomalies)

Deterministic MME

- Simple composite mean (SCM)
- Regular Multiple Regression
- Singular Value Decomposition (SVD)
- Genetic Algorithm (AG)

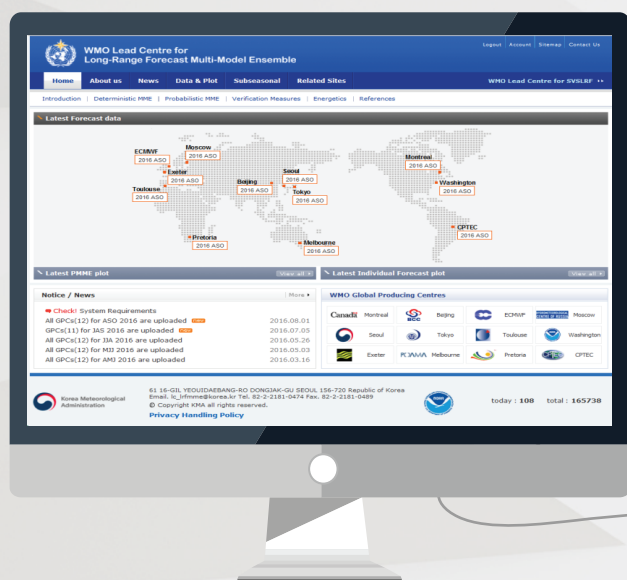
Probabilistic MME

- Tercile-based categorical probabilities



Verification

- Hindcast for both MME and Individual GPCs
- Forecast for MME



Click!

<http://www.wmolc.org>



For more Information of WMO LC-LRFMME

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How to register on the WMO LC-LRFMME

www.wmolc.org

The screenshot shows the homepage of the WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME). Key features highlighted with callouts include:

- LC-LRFMME URL:** The website address in the browser's address bar.
- LC-LRFMME tabs:** Navigation tabs at the top including Home, About us, News, Data & Plot, and Related Sites.
- Login | Sign up:** Buttons in the top right corner for user authentication.
- Latest Forecast data:** A section featuring a world map with various locations marked, such as Seoul, Tokyo, Beijing, and others, indicating the availability of forecast data for these regions.
- LC-LRFMME Notice and News:** A section providing updates, including system requirements and new leaflets.
- WMO Global Producing Centres:** A list of participating centers from various countries, including Canada, Mexico, Beijing, ECMWF, Moscow, Seoul, Tokyo, Toulouse, Washington, Exeter, PCWMA, Melbourne, Pretoria, and CPTC.

Login | Sign up

Login

You can log in to LC-LRFMME homepage by clicking this button and entering your ID and password.

Sign up

You can register on the website after signing up.

For more information in detail

Please see the WMO LC-LRFMME Website User Manual in Notice and News

The screenshot displays the 'Sign Up Form' on the WMO LC-LRFMME website. The form is divided into several sections:

- Key information:** Includes fields for First Name, Last Name, Desired login ID, Password (with a strength indicator), Confirm Password, Official e-mail, Other e-mail, A identification question, answer, Country, Your job title, and Affiliation.
- Agreement:** Contains checkboxes for 'I agree' to the Terms of Service, Privacy Handling Policy, and Agreement to collecting personal information. It also includes a section for 'Consignment of Personal Information Processing' with details about the task and consent.
- Terms of Service:** A scrollable area containing the website's terms and conditions.
- Privacy Handling Policy:** A scrollable area detailing the website's privacy practices.
- Agreement to collecting personal information:** A scrollable area explaining the purposes for data collection and user consent.

At the bottom of the form, there is a 'Make a New Account' button.

Step 01

To register with the website, click on the "Sign Up" button. Then fill out your basic information.

Step 02

Please read the Terms of Service, Privacy Handling Policy, and Agreement, and check each box "I agree" to confirm that you agree with the terms. Then click "Make a New Account."

Step 03

After signing up, click on a hyperlink "[LINK]" in your email message that you filled in the "Sign up" page.

Step 04

At this link page, you will get authentication after entering logging in with your ID, password.

Step 05

The administrator will give you a membership grade, such as grade A, B or C, depending on your affiliation.

* The authentication function is intended to restrict and limit unauthorized users to access the website.

Membership Grade

- **Grade A** (GPCs) can upload and download digital data and can download image plots.
- **Grade B** (NMHSs and RCCs) can download digital data and image plots.
- **Grade C** (Others) can download only Multi-model ensemble image plots.