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MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA
AEMet
Agencia Estatal de Meteorología

Update on the LC LRFMME operations

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AEMET


::: WMO LRF MME ::: - Internet Explorer
https://www.wmol...
::: WMO LRF MME :::
Archivo Edición Ver Favoritos Herramientas Ayuda
WMO Lead Centre for
Long-Range Forecast Multi-Model Ensemble
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Introduction Deterministic MME | Probabilistic MME | References
Latest Forecast data
Offenbach 2018 DJF
ECMWF 2018 DJF
Moscow 2018 DJF
Exeter 2018 DJF
Toulouse 2018 DJF
Beijing 2018 DJF
Seoul 2018 DJF
Tokyo 2018 DJF
Pretoria 2018 DJF
Melbourne 2018 DJF
Montreal 2018 DJF
Washington 2018 DJF
CPTEC 2018 NDJ
Latest PMME plot
View all
Latest Individual Forecast plot
View all
Notice / News
More
Check! System Requirements
A new leaflet of LC-LRFMME is published! 2016.08.31
User guide of the LC-LRFMME website is published! 2016.08.19
All GPCs(13) for NDJ 2018 are uploaded 2018.10.17
All GPCs(13) for OND 2018 are uploaded 2018.09.28
All GPCs(13) for JAS 2018 are uploaded 2018.06.22
All GPCs(13) for JJA 2018 are uploaded 2018.05.17
All GPCs(13) for MJJ 2018 are uploaded 2018.05.03
WMO Global Producing Centres
Canada Montreal
Beijing
ECMWF
Moscow
Seoul
Tokyo
Toulouse
Washington
Exeter
Melbourne
Pretoria
CPTEC
Offenbach
Korea Meteorological Administration
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today : 70 total : 331205

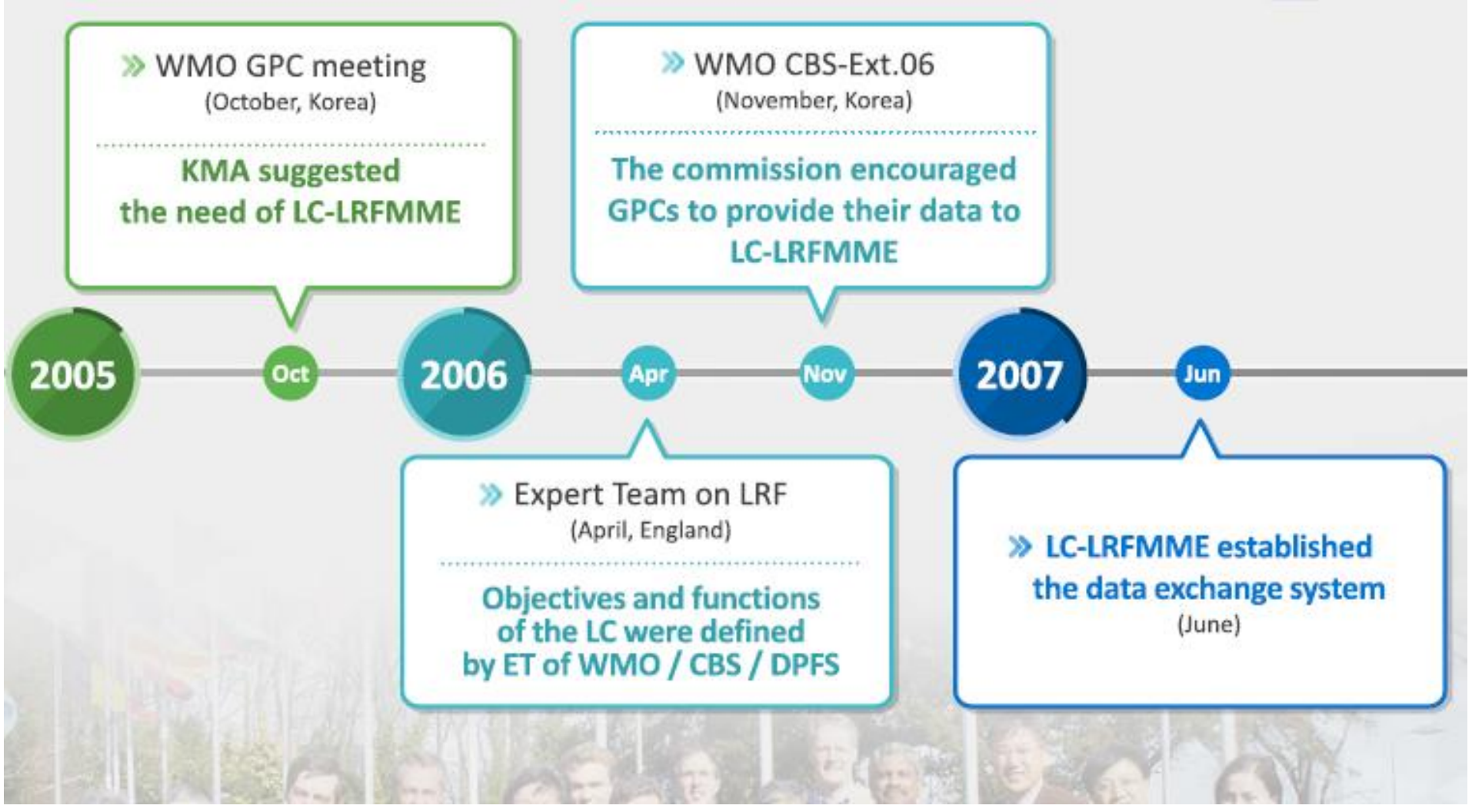
Outline

- Updated the GPC-LRF seasonal forecast systems from GPC-ECMWF, GPC-Seoul, GPC-OffenbachNew models
- Included seasonal forecasts from GPC-Offenbach
- Graphics on NH polar projection (to support ArcRCC)
- Taken on responsibilities for verifications (that formally were the responsibility of LC-SVSLRF);
- Developed the pilot phase for sub-seasonal forecasts;
- Continued support for GSCU;
- Opened the access of the graphical products at the LC-LRFMME website.

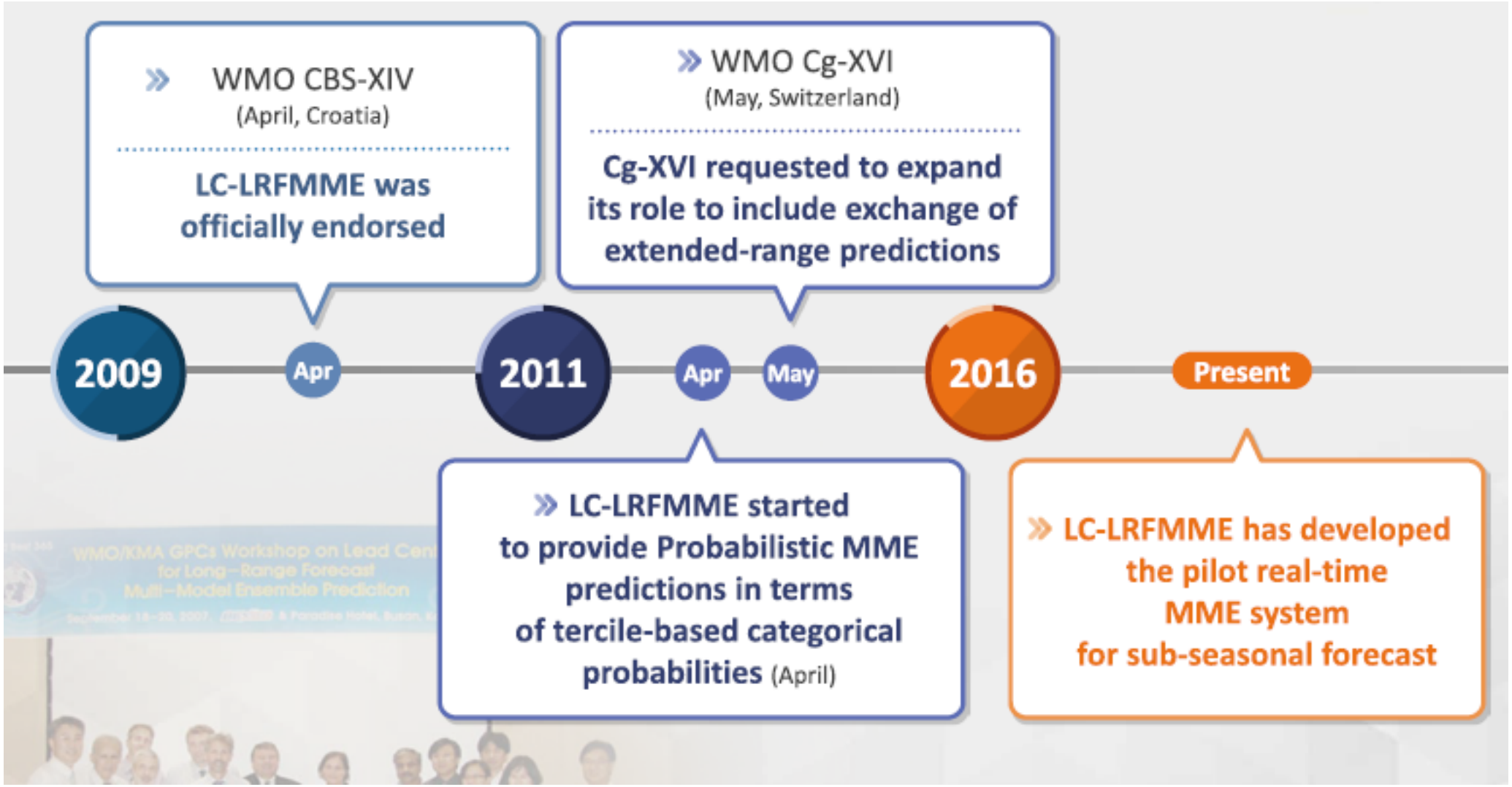
Graphical Products Opened

- As of 8th March 2018, WMO LC-LRFMME opens the graphical products to the public without password restriction by agreement among GPCs. Anyone can use the graphical products freely

History (I)


» WMO GPC meeting
(October, Korea)
KMA suggested
the need of LC-LRFMME
» WMO CBS-Ext.06
(November, Korea)
The commission encouraged
GPCs to provide their data to
LC-LRFMME
2005
Oct
2006
Apr
Nov
2007
Jun
» Expert Team on LRF
(April, England)
Objectives and functions
of the LC were defined
by ET of WMO / CBS / DPFS
» LC-LRFMME established
the data exchange system
(June)

History (II)


» WMO CBS-XIV
(April, Croatia)
LC-LRFMME was officially endorsed
» WMO Cg-XVI
(May, Switzerland)
Cg-XVI requested to expand its role to include exchange of extended-range predictions
2009
Apr
2011
Apr
May
2016
Present
» LC-LRFMME started to provide Probabilistic MME predictions in terms of tercile-based categorical probabilities (April)
» LC-LRFMME has developed the pilot real-time MME system for sub-seasonal forecast

Designated GPC-LRF

Links to 13 designated GPCs: **Target audience: NMHSs, RCCs and RCOFs**

http://www.wmo.int/pages/prog/wcp/wcasp/gpc/gpc.php

Digital products

Both forecast and hindcast of monthly mean anomalies of the GPCs' ensemble mean for lead time of 1~3 month, 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
- Sigular Value Decomposition(SVD)
- Genetic Algorithm(AG)

Probabilistic MME

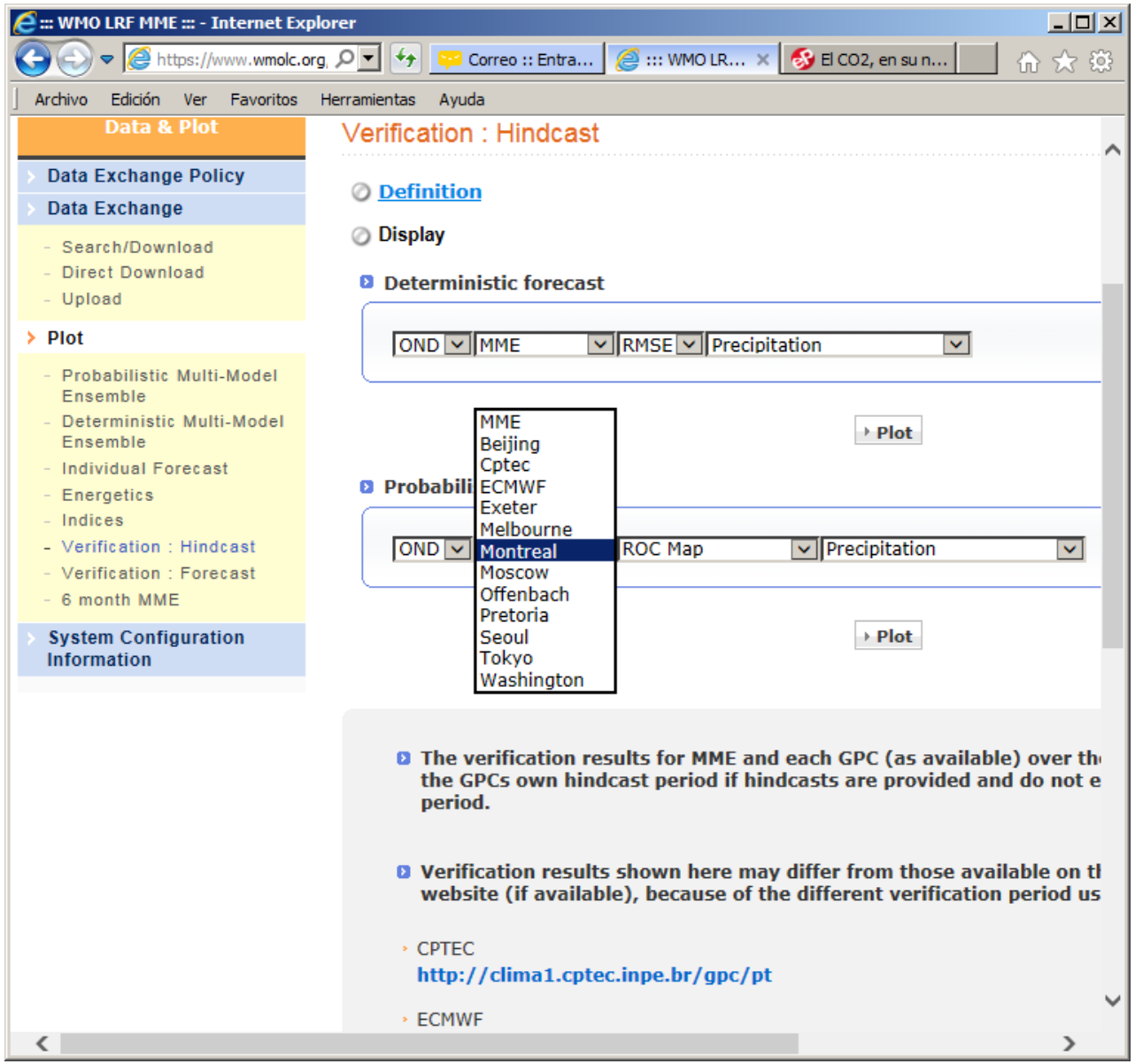
- Tercile-based categorical probabilities

Verification

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

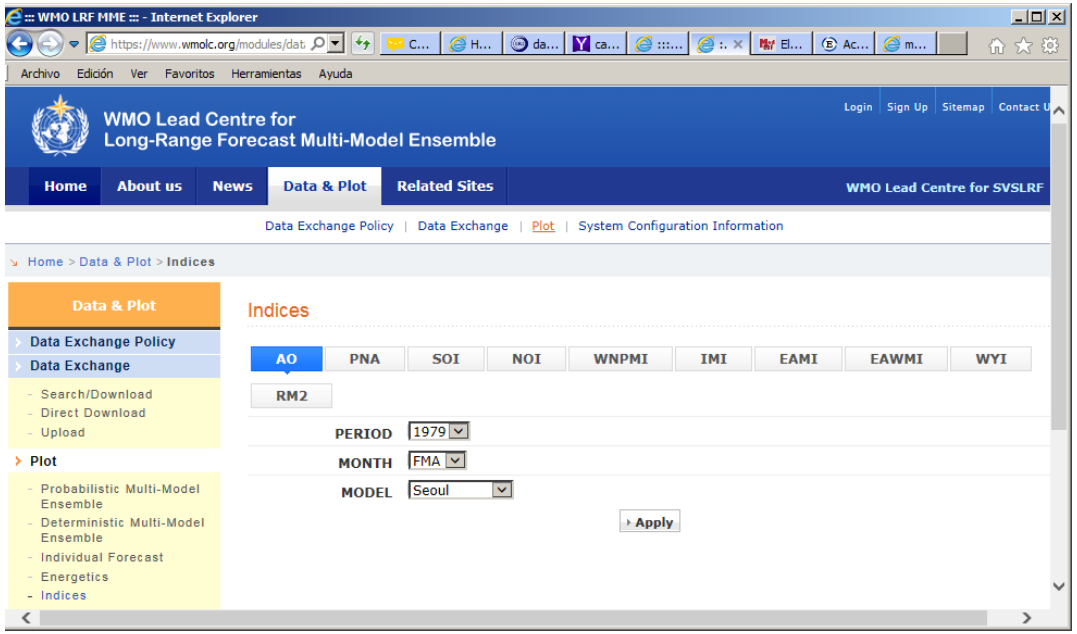
Taken on **responsibilities for verification** (that formally were the responsibility of LC-SVSLRF)

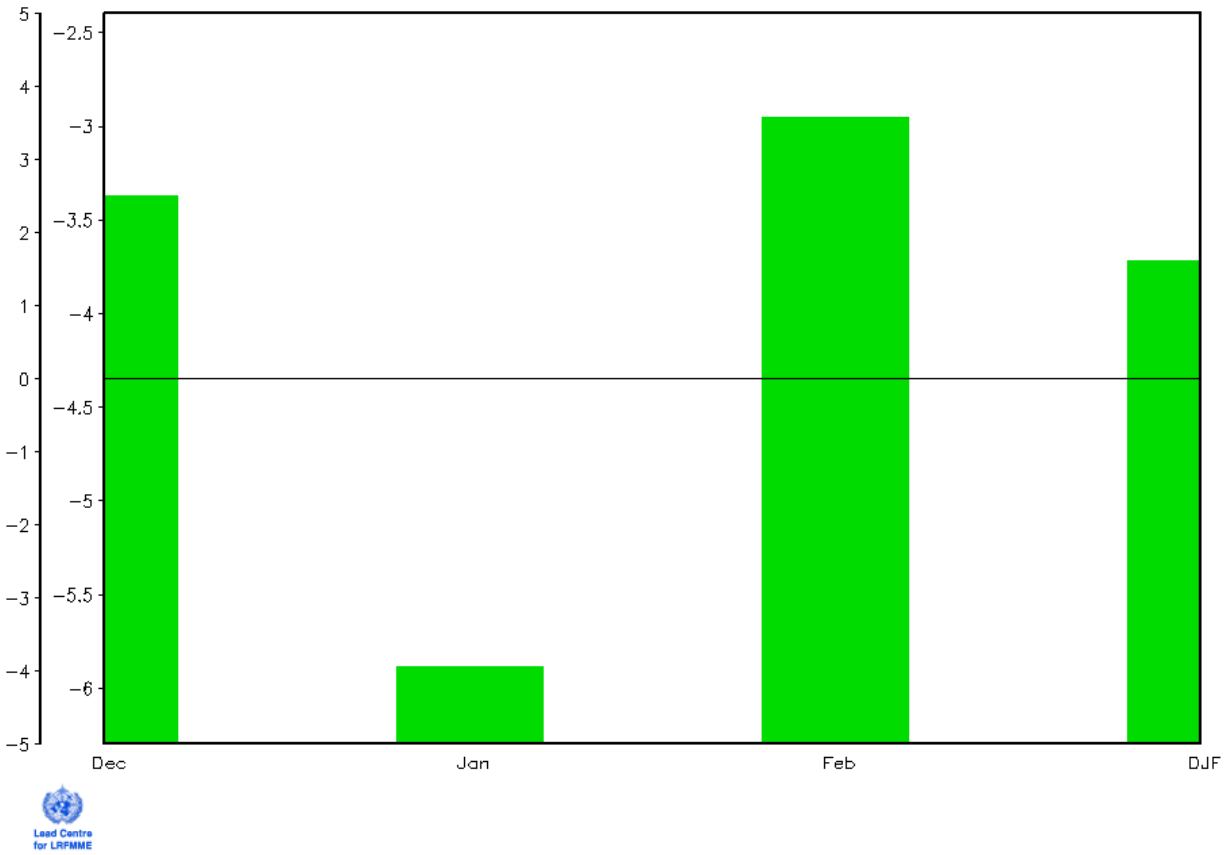
However, many options are still not working!



Indices: AO

PERIOD: 1979 – 2018, DJF, MODEL: Exeter





Latest Global Seasonal Forecasts in WMO webpage

Summary of data provided by the GPCs

Information on the data configuration supplied by the 13GPCs

GPC	Beijing	CPTEC	ECMWF	Exeter	Melbourne	Montreal	Moscow	Offenbach	Pretoria	Seoul	Tokyo	Toulouse	Washington
Forecast system	1-tier	2-tier	1-tier	1-tier	1-tier	1-tier	2-tier	1-tier	1-tier	1-tier	1-tier	1-tier	1-tier
Forecast													
Ensemble size	24	15	41	42	33	20	10	30	40	42	51	41	40
Hindcast													
Period	1991-2010	1979-2001	1981-2010	1993-2015	1981-2011	1981-2010	1986-2010	1981-2010	1981-2001	1991-2010	1981-2010	1979-2007	1982-2010
Ensemble size	24	10	15	28	99	20	10	15	10	12	10	11	20
Digital data	◎	◎	×	×	◎	◎	◎	◎	◎	◎	×	×	◎

An "×" indicates that data is not currently available in LC-LRFMME, because of GPC's data Policy

Record of the GPC system upgrades GPC's system specifications (updated 2018)

GPC name (last update)	Centre	Ensemble size of forecast	Resolution (atmosphere)	Hindcast period
Beijing (2005, 2016)	Beijing Climate Centre	Coupled (48) Coupled (24)	T63/L16 T106/L26	1983-2004 1991-2013
CPTEC (2009)	Centre for Weather Forecasts and Climate Studies	2-tier (15)	T62/L28	1979-2001 1979-2010
ECMWF (2010, 2017)	European Centre for Medium range Weather Forecasts	Coupled (41) Coupled (51)	T159/L62 T255/L91 T319/L91	1981-2005 1981-2010 1981-2016
Exeter (2010, 2012, 2015)	Met Office Hadley Centre	Coupled (42)	1.85ºx1.25º/L38/L85 0.83ºx 0.56º/L85	1989-2002 1996-2009 1993-2015
Melbourne (2010, 2015)	Australian Bureau of Meteorology	Coupled (30) Coupled (99) Coupled (165)	T47/L17	1980-2006 1961-2010 1981-2010
Montreal (2011)	Meteorological Service of Canada	2-tier (40) Coupled (20)	T32/T63/T95/2.0°x2.0°(4model combination) CanCM3+CanCM4 T63/L31 and T63/L35	1969-2004 1981-2010
Moscow (2007, 2010. 2012)	Hydromet Centre of Russia	2-tier (10) 2-tier (20)	1.1°x1.4°/L28	1979-2003 1981-2010
Offenbach (2016)	Deutscher Wetterdienst	Coupled (30)	T63L47	1981-2015
Pretoria (2007, 2014)	South African Weather Service	2-tier (6) Coupled (40)	T42/L17	1983-2001 1982-2009
Seoul (1999, 2010, 2012, 2014, 2016)	Korean Meteorological Administration	2-tier (20) Coupled (42)	T106/L21 0.83ºx 0.56º/L85	1979-2007 1979-2010 1979-2012 1996-2009 1991-2010
Tokyo (2010, 2012, 2015)	Japan Meteorological Agency	Coupled (51)	T95/L40 T159/L60	1979-2008 1979-2010 1979-2014
Toulouse (2008) (2013, YEAR?, 2016)	Météo-France	Coupled (41) Coupled (51)	T63/L91 T127/L31 T255L91? T359/L91	1979-2007 1991-2010 1993-2016
Washington (2004, 2011)	National Centresfor Environmental Prediction	Coupled (40)	T62/L64 T126/L64	1981-2004 1981-2010

LC-LRFMME to take the responsibility for operational production of GSCU

Global Seasonal Climate Update (GSCU) Schedule

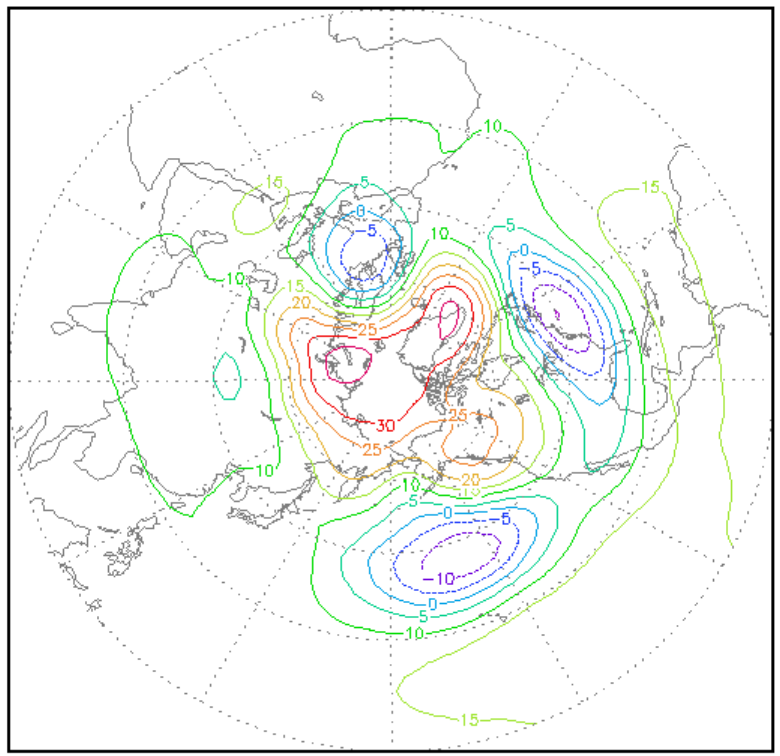
Process	Actions	Date (Nov, Feb, May, Aug)
MONITORING	Production of monitoring components	20th
PREDICTION	Production of prediction components	18th (15th + 3 days) 20th (18th + 2 days)
COMPILATION	Drafting, reviewing and completion of GSCU	23rd (20th + 3 days)
PUBLICATION	Dissemination of the GSCU	24th (23rh + 1 day)

Graphics on NH polar projection (to support ArcRCC)

lat=0 90
lon=
lev=500
Unit : [gpm]

(issued on Nov2018)

500hPa GPH : DJF2018



GrADS: COLA/IGES

2018-11-23-20:48 GrADS: COLA/IGES

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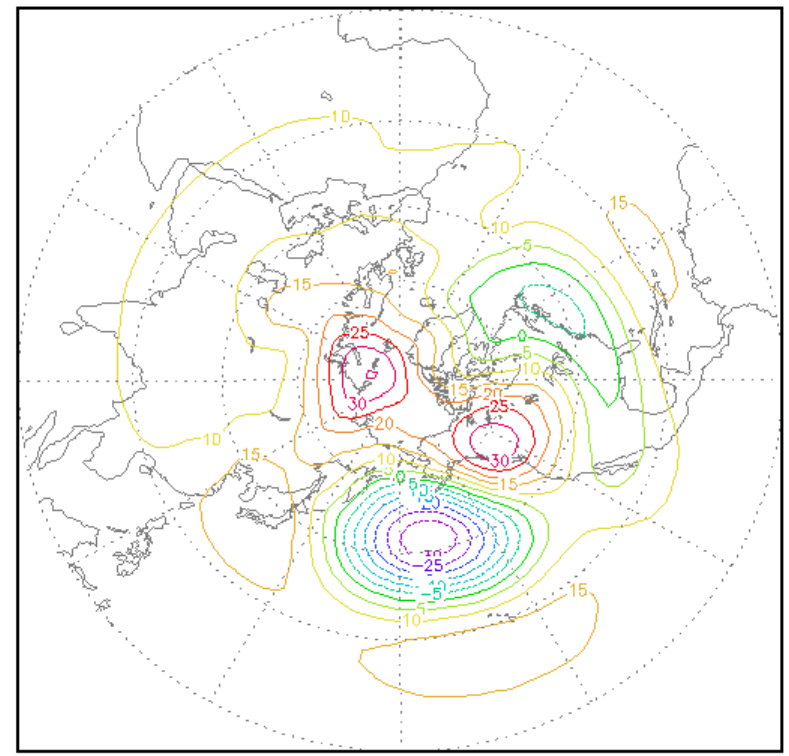
lon=
lev=500
Unit : [gpm]

(issued on Nov2018)

500hPa GPH : DJF2018



2018-11-23-20:52

Conclusions

- More open policy as reaction to competitors
- More visibility
- New products, but still work needed to reach fully operationalization
- More responsibilities: verification, subseasonal, GSCU production, etc
- More resources needed
- Need to approach SFS, e.g., hindcast periods, number of ensemble members, ensemble generation strategy, …