

Recent upgrades

of satellite data assimilation at JMA

1. Outline of NWP systems at JMA

- Global Spectral Model & Analysis (GSM, GA)
- Global Ensemble Prediction System (GEPS)
- Meso-scale Model & Analysis (MSM, MA)
- Local Forecast Model & Analysis (LFM, LA)

2. List of Upgrades

- Meteosat-11 AMV, CSR (GA, Mar. 2018)
- Computer system replacement to Cray XC50 (Jun. 2018)
- Use of surface-sensitive CSR (GA, Oct. 2018)
- Use of ASCAT Coastal Wind (MA, Mar.2019)
- **NOAA-20/ATMS, CrIS (GA, Mar. 2019)**
(⇒ 12p.17 poster by H. Murata)

- Use of GOES-16 CSR (GA, Jun. 2019)

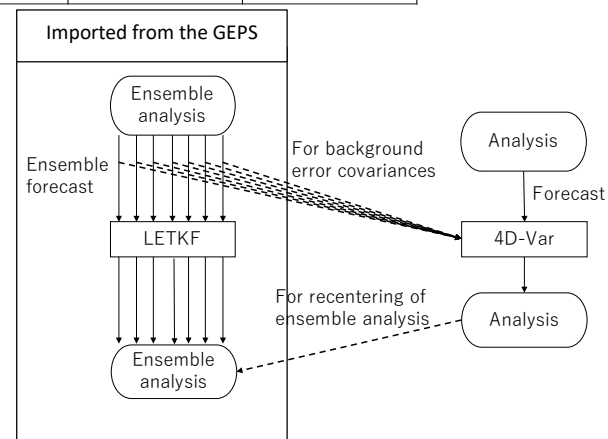
3. Global assimilation system upgrade in Nov. 2019

- EnKF Hybrid 4D-var
- **Outer-loop update**
- **All-sky satellite data assimilation**

(⇒ 5p.07 poster by M. Kazumori)

CSRs in red were implemented in the operational system

Geo Satellite	Band (micron)	USE
Himawari-8/AHI	6.2	sea / land
	6.9	sea / land
	7.3	sea / land
Meteosat-8/SEVIRI	6.2	sea / land
Meteosat-11/SEVIRI	7.3	sea / land
GOES-16/ABI	6.2	sea / land
	6.9	
	7.3	
GOES-15	6.5	sea / land



A schematic diagram of the hybrid LETKF/4D-Var