

Status of satellite data assimilation in Meteorological Service Singapore

SINGVDA: TROPICAL CONVECTIVE SCALE DATA ASSIMILATION SYSTEM

- ❖ Tropical version of the Unified Model with 3 hourly-cycling DA using 3D-VAR FGAT. LBCs from ECMWF deterministic run.
- ❖ Horizontal resolution of 1.5km, with 80 vertical levels up to 38.5km.
- ❖ Several OSEs are being carried out to investigate/understand the sensitivity of tropical precipitation to various infrared/microwave radiances.

Observations assimilated operationally in SINGVDA

		Satellite radiances	
Infrared	AIRS	AQUA	
	CrIS	Suomi NPP	
	IASI	Metop A/B	
	AHICSR	Himawari-8	Himawari-9*
	Geocloud [§]	Himawari-8	Himawari-9*
Microwave	ATMS	Suomi NPP	
	AMSU-B/MHS	Metop-A	Metop-B NOAA-18/19
	SAPHIR	Megha-Tropiques	
	GMI [†]	GPM	

* Under development

† In the planning/evaluation phase

§ 1DVar retrieved parameters over cloudy region

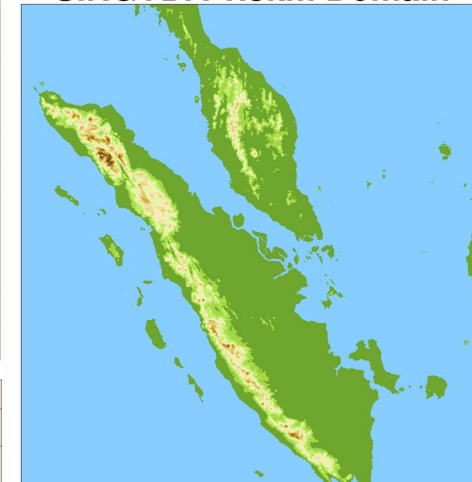
Conventional

		Conventional
Surface	Automatic/Manual land SYNOP	
	METAR	
	SHIP	
Sonde	DRIBU	
	Land TEMP	
	Land PILOT	
Aircraft	AMDAR	
	AIREP	
	MODE-S*	
	TAMDAR*	

Derived winds

Geostationary AMV	Himawari-8
Scatterometer winds	Metop-A ASCAT

SINGVDA 1.5km Domain



- ❖ Major tasks for this year include 1) major scientific (RAL3) upgrade to the core UM model. 2) operationalizing Himawari-9 and 3) updating the SINGVDA system to use observations from new satellite platforms.

Please visit poster 4p.17 for more details on our recent technical upgrade and results from OSEs etc.