

Use of satellite data in the JRA-55 reanalysis

Kazutoshi Onogi

Climate Prediction Division / JMA

2011. 12. 9

The mission of “satellite climatology” at JMA

JMA's Contribution to GSICS and SCOPE-CM

GSICS : Global Space-based Inter-Calibration System

SCOPE-CM : Sustained, Coordinated Processing of Environmental
Satellite Data for Climate Monitoring

The purpose is to provide
Essential Climate Variables (ECV)
satellite products (AMV and CSR)
as an input to the **JMA's second
reanalysis : JRA-55**

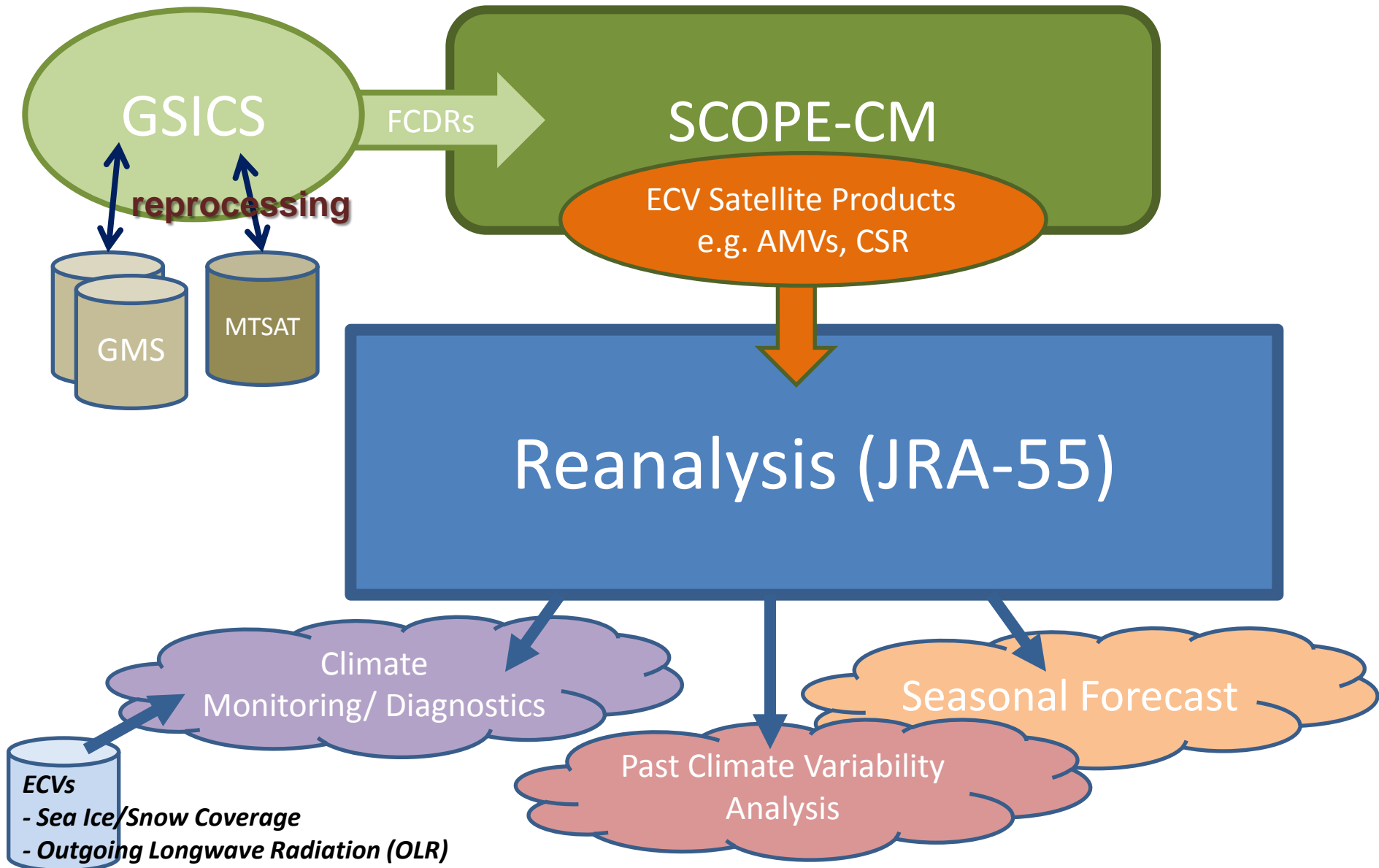


JRA-55 Reference : Ebita et. al 2011

http://www.jstage.jst.go.jp/article/sola/7/0/7_149/_article

A Strategy of JMA for Satellite Climatology

GMS, MTSAT-1R/2 and Himawari-8/9 Observation over 30 years

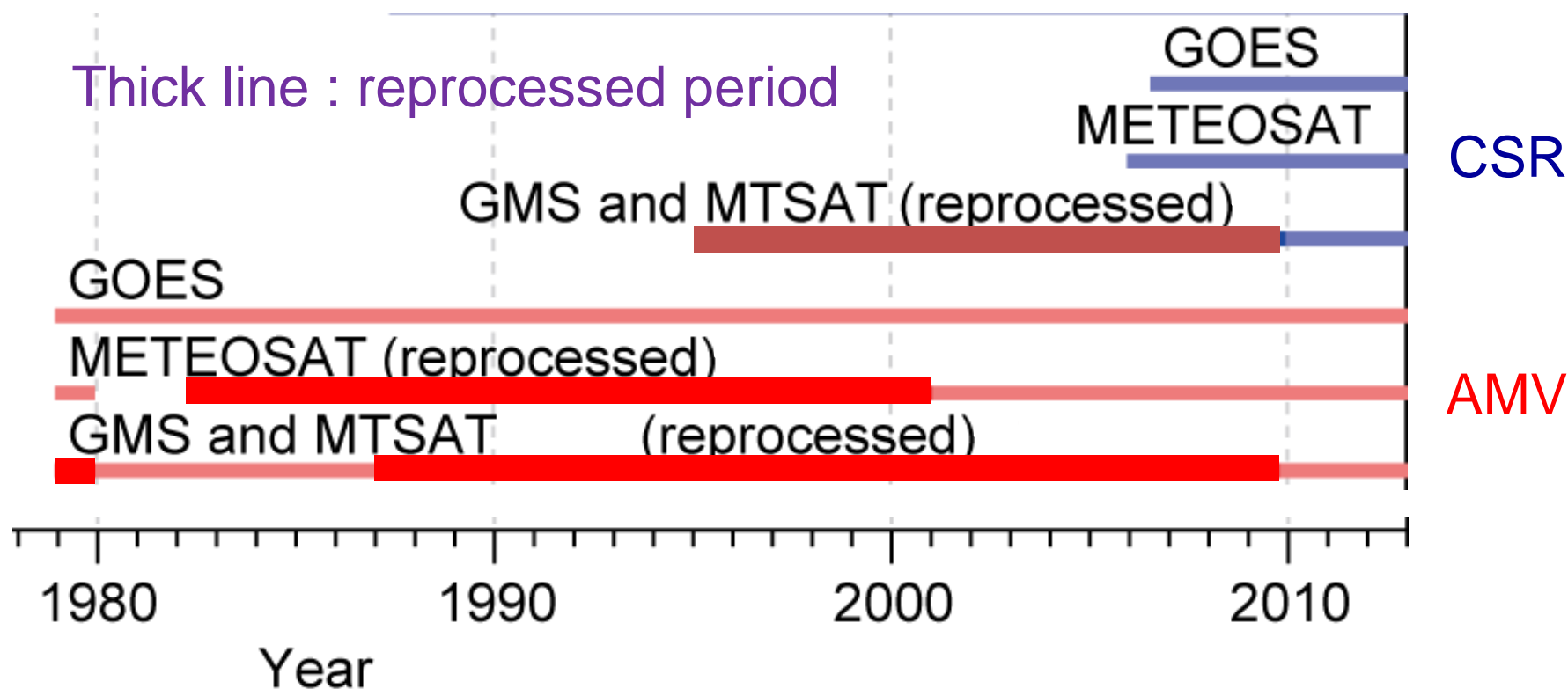


Available Reprocessed AMV and CSR data for JRA-55

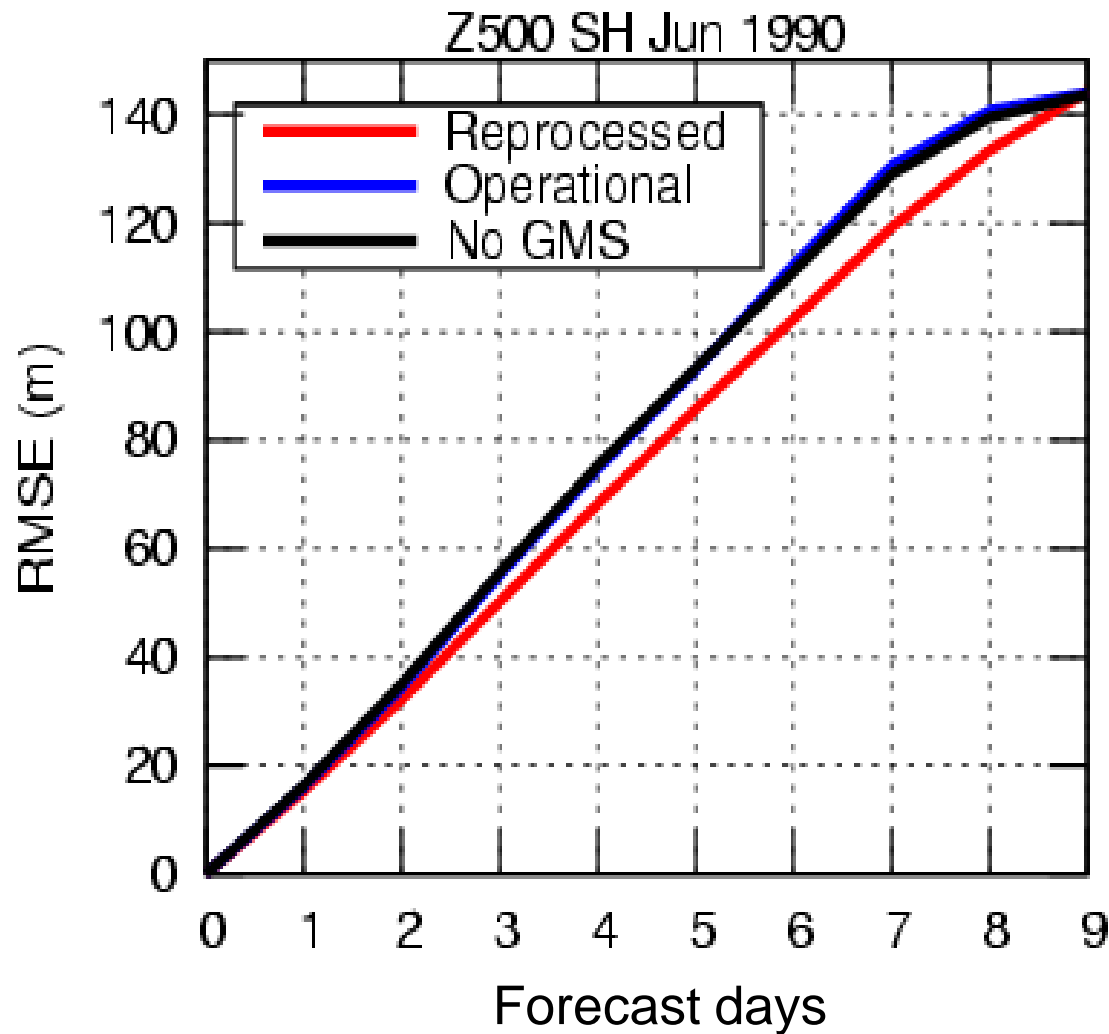
JRA-55 covers 55 years (1958 – 2012).

Resolution : TL319L60 (~60km in horizontal)

4D-var, with variational bias correction for satellite radiance



Impact of reprocessed AMV on forecasts



Forecast experiments

With reprocessed AMV

With operational AMV

With no AMV

Forecasts from analyses assimilating reprocessed AMV data have much better qualities.

Reprocessed AMV data give significant positive impact.