H23F-1641: Assessing Applications of GPM and IMERG Passive Microwave Rain Rates in Modeling and Operational Forecasting

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Applications in RFC Operations

Description

Determine whether and how IMERG rain rates will impact hydrologic forecasting in NWS River Forecast Centers.
Forecasters could view products in AWIPS and on web.
Forecasters intensively evaluated IMERG over approximately 6 weeks..

Model output capturing atmospheric river event on 23 July 2016
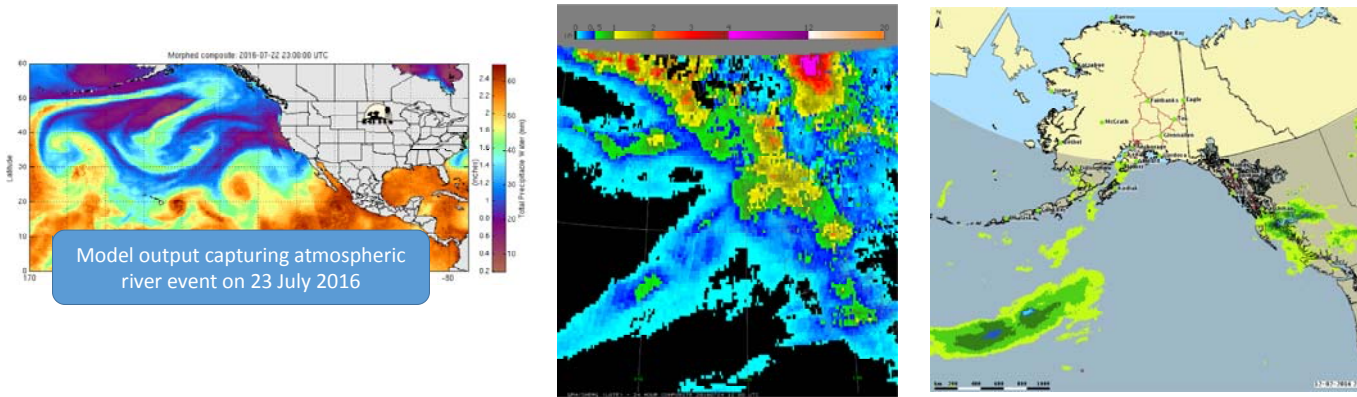
Impacts

- Latency of IMERG products not a significant concern in RFC activities.
- Rain accumulations can help supplement rain and river gauge data to help improve hydrographs.
- IMERG data incorporated into model framework found to be more beneficial that viewing on web or AWIPS.

Applications in WFO Operations

Description

Determine whether and how GPM rain rate data will aid nowcasting/forecasting in NWS Weather Forecast Offices.
Forecasters intensively evaluated IMERG over approximately 6 weeks..
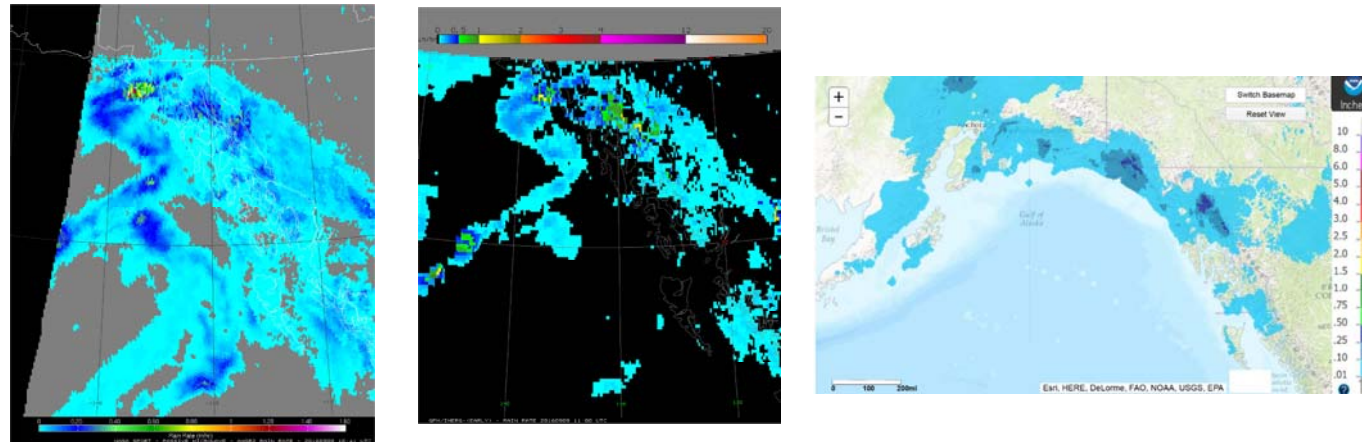
Impacts

- Latency of IMERG products limit practical use in short-term operational forecasting.
- GPM swaths show some promise in data-void regions, e.g., off shore.

Applications/Validation in Precip Forcing: NASA SERIVIR/SPoRT efforts in East Africa

Description

Using IMERG as a precip forcing in the NASA Land Information System over East Africa Project in conjunction with NASA SERVIR to bring data products and methods to developing nations
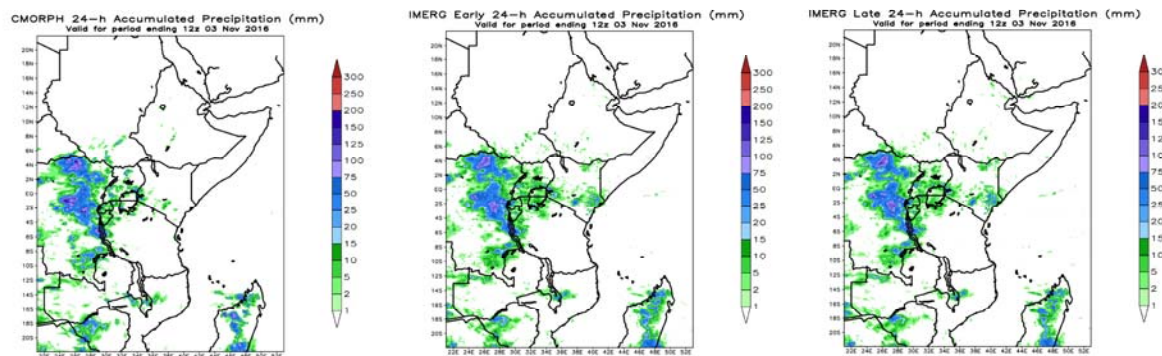
Impacts

- IMERG shows good comparison to CMORPH for use as precip forcing mechanism in modeling data-void regions
- Current use in East Africa for NASA Land Infomration System soil moisture products
- Impacts include providing necessary decision support for flood info, monitoring/mapping drought and related agricultural/food security issues, and provide hydrologic forecasting