W-22

NESDIS Operational Precipitation Products and Services

Limin Zhao[1], Ralph Ferraro[2] and Bob Kuligowski[2]

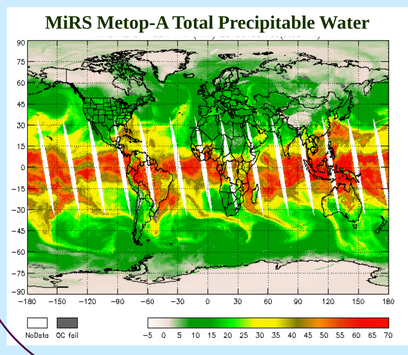
[1]NOAA/NESDIS/OSPO/Satellite Product and Service Division [2] NOAA/NESDIS/Center of Satellite Application and Research

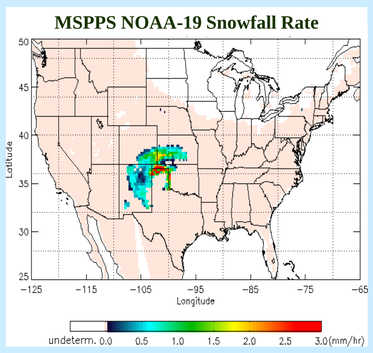
The NOAA/NESDIS Office of Satellite and Product Operations (OSPO) generates and distributes operational precipitation products from a variety of satellites, including both polar (LEO) and geostationary (GEO) satellites, etc. Those products are being utilized to support NWS operations from short-term forecasts and warnings (e.g., flash floods, rainfall potential from tropical systems, etc) to long term climate studies (e.g., seasonal to inter-annual variability). Presented here is a snapshot of basic information of products and data access, including the upcoming and future operational precipitation products as NOAA enters to S-NPP, JPSS, GOES-R and GPM era.

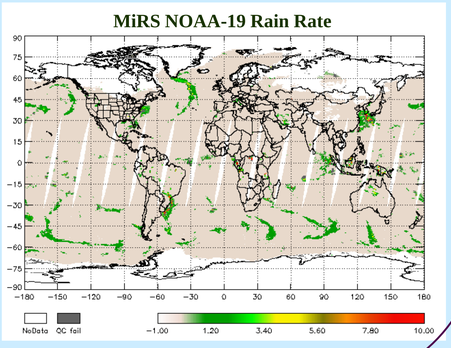
Microwave Precipitation Products from LOEs

MSPPS – Microwave Surface and Precipitation Products System
MiRS – Microwave Integration Retrieval System

Algo	Satellites/Sensors	Products	Type	Formats
MSPPS	NOAA-18, NOAA-19, Metop-A and Metop-B – AMSU-A&MHS	Rainfall rate, Snowfall rate, TPW, CLW, etc	Level-2, Level-3	HDF-EOS, McIDAS, PNG
MiRS	NOAA-18, NOAA-19, Metop-A and Metop-B – AMSU-A&MHS; DMSP F16 and F18 – SSMIS	Rainfall rate, TPW, CLW, etc	Level-2, Level-3	HDF-EOS, netCDF4, McIDAS, PNG

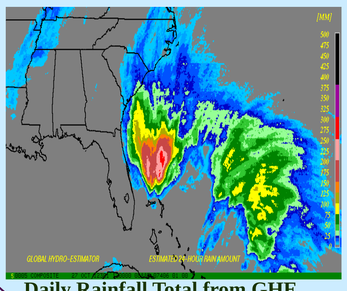


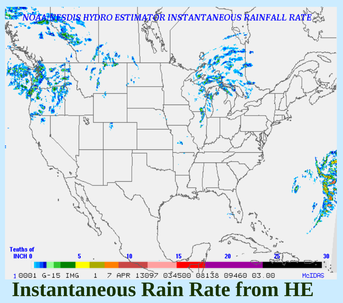


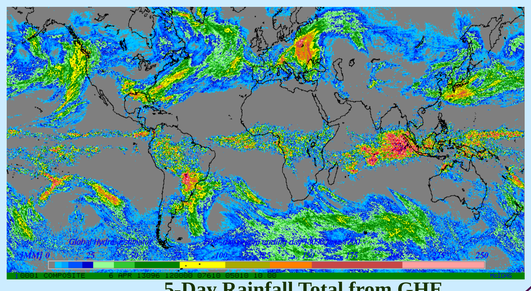


IR Precipitation Products from GEOs

Algorithms	Satellites/Sensors	Products	Formats
HE – Hydro-Estimator	GOES-E & GOES-W IR Imager	Rainfall Rate and multi-hour rainfall total, 4km	McIDAS, GRIB1/GRIB2, GIF
GHE – Global Hydro-Estimator	GOES-E, GOES-W, MTSAT, Meteosat-7 & -10 IR Imager	Rainfall Rate and multi-hour and multi-day rainfall total , 4 km	McIDAS, GRIB1/GRIB2, GIF


Daily Rainfall Total from GHE


Instantaneous Rain Rate from HE

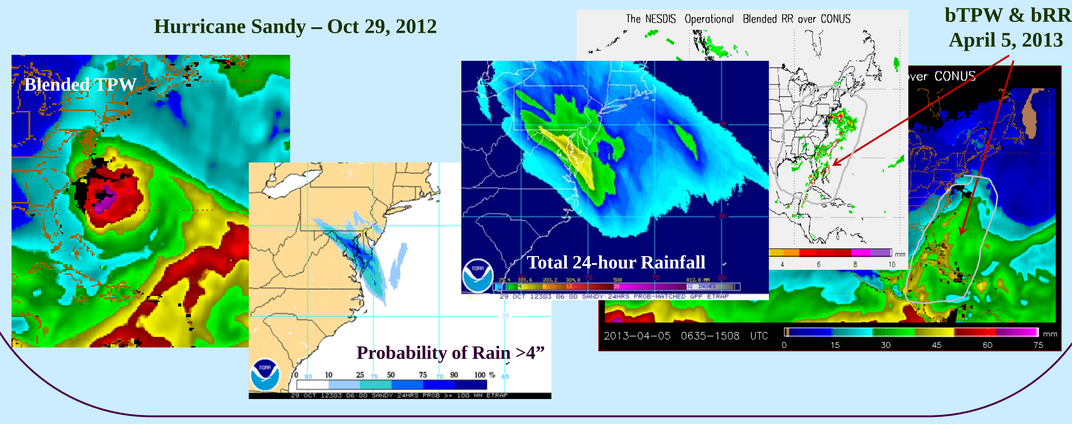

5-Day Rainfall Total from GHE

Upcoming New Satellite Capability

Satellites/Sensors	Algorithms	Products
S-NPP/ATMS	MiRS	Rainfall Rate, TPW, CLW, etc
GCOM-W1/AMSR-2	GPROF	Rainfall Rate, TPW, CLW, etc
Megha-Tropiques/MADRAS&SAPHIR	MiRS	Rainfall Rate, TPW, CLW, etc
GOES-R/ABI	SCaMPR	Probability of rainfall, Rainfall potential, QPE
GPM/GMI	MiRS	Rainfall Rate, TPW, CLW, etc

Blended Products

Algo	Satellites/Sensors	Products	Type	Formats
bTPW – Blended TPW	NOAA-15, NOAA-16, NOAA-18, NOAA-19, Metop-A – AMSU/MHS; DMSP F16, F17 and F18 – SSMIS; GOES-East & -West IR Imager, GPS-Met	TPW, Percentage of TPW normal	Level-3, 16km	HDF-EOS, PNG
bRR – Blended RR	NOAA-18, NOAA-19, Metop-A – AMSU/MHS; DMSP F16, F17 and F18 - SSMIS	Rainfall Rate	Level-3, 16 km	HDF-EOS, PNG
eTRAP	NOAA-18, NOAA-19, Metop-A – AMSU/MHS; DMSP F16, F17 and F18 – SSMIS; TRIMM/TMI	6 and 24 hour QPF rain rate and POPs	Level-3, 8 km	McIDAS, ASCII, GIF



Looking Forward

- **The GPM core and constellation satellites would provide precipitation and related products with near-global every 3 hours or less**
- **NOAA is developing the enterprise approach to utilize the GPM constellation resource and capability in supporting the need of NOAA operational precipitation mission**
- **Improved blended products through the inclusion of newer satellite capabilities, improved science, etc.**

Data Access

- **Real-time data access to ESPC DDS through Data Access Request (DAR):** *http://www.ospo.noaa.gov/Organization/About/access.html*
- **Historical data access through NOAA/CLASS/NCDC**: *http://www.class.ngdc.noaa.gov/saa/products/welcome*
- **Imagery Products through Internet:**
  MSPPS - *http://www.ospo.noaa.gov/Products/atmosphere/mspps*
  MiRS - *http://www.ospo.noaa.gov/Products/atmosphere/mirs*
  GHE - *http:// ://www.ospo.noaa.gov/Products/atmosphere/ghe*
  bRR - *http://www.ospo.noaa.gov/Products/atmosphere/brr*
  bTPW - *http://www.ospo.noaa.gov/bTPW*
  eTRAP - *http://www.ssd.noaa.gov/PS/TROP/etrap.html*
- **Point of Contact:** *Limin.Zhao@noaa.gov*

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