1. Description/Theory

The Multi-sensor Precipitation Estimate (MPE) is an instantaneous rain rate product which is derived from the IR-data of the geo-stationary EUMETSAT satellites by continuous re-calibration of the algorithm with rain-rate data from polar orbiting microwave sensors. The basic assumption is a monotonic relation between the cloud top temperature and the

Links to detailed descriptions of the algorithm, including references can be found on:
EUMETSAT - Access to Data - Multi-Sensor Precipitation Estimate

2. Strengths and Weaknesses

The algorithm is only suitable in convective weather situations. Frontal precipitation, especially at warm fronts is very often wrongly located and overestimated. Two quality indicators distributed together with the GRIB-2 MPE product give indications where the product should be used and where it may be problematic.

3. Algorithm Inputs

A. Satellite Data

1. Geostationary

10.8 micron IR window channel of:

METEOSAT-7 (57° East)
METEOSAT-8 (0°)
METEOSAT-9,RSS (9.5° East), only available North of 35° latitude

2. Low Earth Orbit

SSM/I instruments on DMSP satellites

B. Ancillary Data

Cloud mask from multi-channel geo-algorithm

5. Output Products

MPE real-time product

1. Temporal/Spatial Resolution

Original resolution of geostationary IR-images:
Every 30 minutes for METEOSAT-7
Every 15 minutes for METEOSAT-9
Every 5 minutes for METEOSAT- 8, RSS

2. Spatial Coverage

+/- 60° from the sub-satellite point of the METEOSAT satellites (for METEOSAT-8 RSS, only North of 35° North)

3. Dedicated Product Web Page Location

EUMETSAT - Access to Data - Multi-Sensor Precipitation Estimate

5. Operational Availability of Product

A. Source

Products are available in GRIB-2 data format:

On the internet for METEOSAT-7 and METEOSAT-9 MPE GRIB-2 data

Via EUMETCAST satellite transmission for METEOSAT-8 and METEOSAT-9 (EUMETCAST information: EUMETCAST )

and as JPEG images for METEOSAT-7 and METEOSAT-9: Real time imagery: MPE

B. Latency

8-15 minutes after end of the image reception of the METEOSAT image

C. Update Frequency

Every IR image (see temporal resolution))

D. Available Record Length

On the internet, 48 hours rolling archive

6. Historical Availability of Product

A. Source

EUMETSAT archive UMARF: UMARF

B. Update Frequency

Real-time ingestion into the archive

C. Available Record Length

Products available, with small gaps, since January 2006. Some older data.

6. Planned Modifications/Improvements

The change of the MW data source from SSM/I to AMSU-A/MHS is foreseen for mid 2009.

7. Capability of Producing Retrospective Data

Limited re-processing capabilities available

8. Contact Personnel

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For all questions on data availability, please contact EUMETSAT users service: User Service