

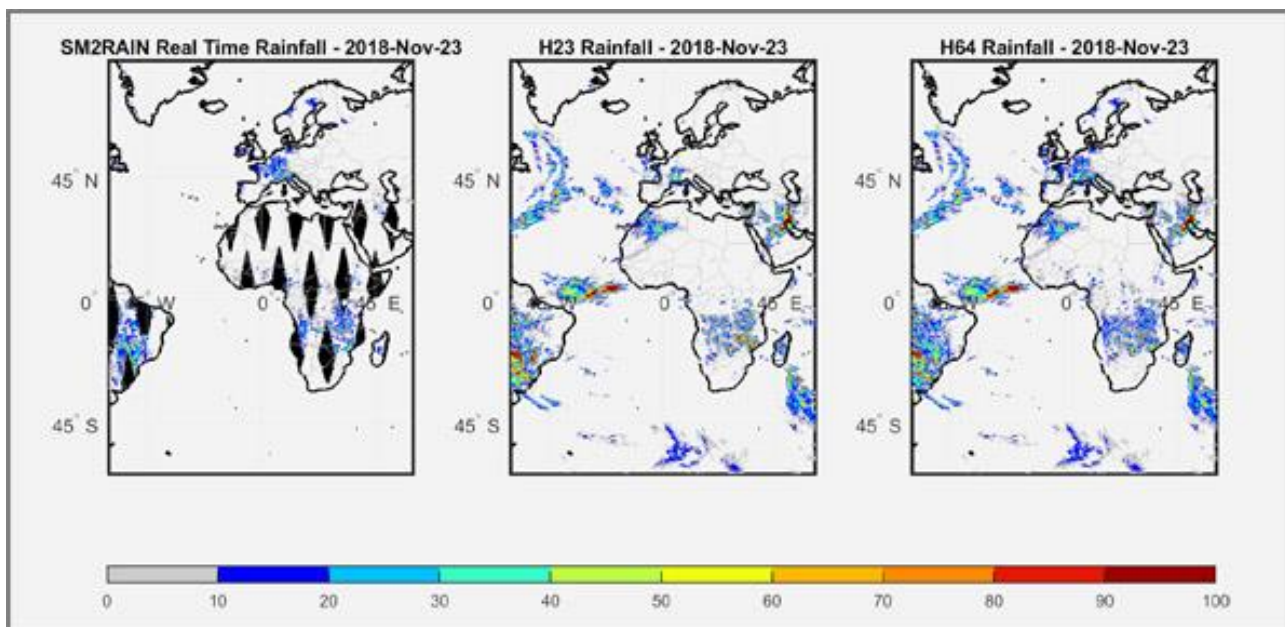
Research Institute for Geo-Hydrological Protection

in the Department of Earth System Sciences and Environmental Technology

an Institute of the Italian National Research Council (CNR)

Rainfall estimate from space

A new near real-time satellite rainfall product



We have developed a new satellite rainfall product in near real-time. The product, called H64, is based on the integration of rainfall estimates obtained through two satellite sources. The developed algorithm combines estimates obtained by applying the SM2RAIN algorithm to satellite soil moisture data and those provided by a state-of-the-art product already operating on the full-disk area of the Meteosat satellites (60° West – 60° East, 60° South – 75° North).

The integration between two estimates obtained through such different techniques provides a product characterized by greater accuracy and better performance that will provide a valid input to early warning system for predicting natural risks.

The product has been developed within the HSAF (Satellite Application Facility on Support to Operational Hydrology and Water Management) project, funded by Eumetsat, the European Organization for the Exploitation of Meteorological Satellites and in collaboration with CNR ISAC.

The product is available daily and will soon be released within the HSAF project.

Results

Although the product is still in the development and testing phase, H64 estimates were used to monitor the Idai cyclone that hit Mozambique in March 2019. The next image shows the daily rainfall estimated by H64 (on the left) and the cumulative rainfall since the start of the event (on the right). The estimates showed good agreement in terms of spatial pattern and quantity with respect to other state-of-the-art satellite estimates.

Granting institutions

- EUMETSAT

To know more

[Si veda il sito web del progetto H-SAF »](#)

Ciabatta L., Marra A.C., Panegrossi G., Casella D., Sanò P., Dietrich S., Massari C., Brocca L. 2017. Daily precipitation estimation through different microwave sensors: verification study over Italy. *Journal of Hydrology*, 545, 436-450. [doi: 10.1016/j.jhydrol.2016.12.057](#).

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