4–8 November 2019, Kraków, Poland ECSS2019-135 © Author(s) 2019. CC Attribution 4.0 License.



Detection and monitoring of mid latitude convective rainfall using H-SAF blended SEVIRI and LEO MW convection precipitation product

Bozena Lapeta (1), Davide Melfi (2), Rafał Iwański (1), and Piotr Struzik (1)

(1) Institute of Meteorology and Water Management - National Research Institute, Satellite Remote Sensing Department, Krakow, Poland (bozena.lapeta@imgw.pl), (2) Centro Operativo per la Meteorologia, Aeronautica Militare, Italy

Satellite data provide the unique opportunity to investigate atmospheric phenomena with very good spatial and temporal resolutions. This feature is especially important for monitoring precipitation, which can be very local phenomenon and may not be easily observed by ground measurement network. Therefore a big effort is put in developing the algorithms for convective precipitation intensity retrievals from satellite data, especially geostationary ones characterized by very good temporal resolution.

Provision of quality satellite precipitation products in near real time mode for use in operational hydrology is aimed by EUMETSAT Satellite Application Facility in Support to Operational Hydrology and Water Management (H-SAF). Among them, the blended SEVIRI Convection area/ LEO MW Convective precipitation products. Detection of the convective structures of cloudy areas is performed using the NEOFODINA tool, an automatic tool dedicated to now-casting applications in Italy.

In the presentation, the ability of the mentioned above H-SAF precipitation product in convective precipitation detection and estimation is analyzed and presented for selected cases over Poland. Special attention was drawn to convective rainfall detection ability as the mid latitude convection is usually not so strong as over the Mediterranean region for which NEOFODINA tool was developed. The analysis was performed using data from Polish ground measurement networks: rain gauges, radar data and lightning detection. The quality of the satellite product will be also presented along with the description of its algorithm.