



An evaluation of the MSG-based operational rainfall product H05 based on a comparison with the raingauges network in Italy

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The interest for the monitoring and nowcasting/forecasting the rainfall on large areas is nowadays well established all around the world. The applications span from agriculture purposes to flood and drought monitoring forecasts, with particular interest in flash floods and relatively short but intense events that can cause consistent damages to urban settlements, industrial facilities and agricultural production. While the main and most reliable tool for the rainfall monitoring remains the raingauge, with opportune networks and operational data transmission chains, the extreme spatial variability of the rainfall fields shows all the limits of such instruments. Different alternatives exist, such as meteorological radar and satellite-derived rainfall, that allows a monitoring on medium-large areas with the production of continuous and instantaneous maps at high temporal frequencies. However, these alternatives present different problems on the reliability of the data, both on the rainfall intensity and on the actual presence of rainfall. In this work, the data time series of the Italian raingauges network are employed for an evaluation of the operational satellite rainfall product H05, produced by the EUMETSAT Satellite Application Facility on Support to Operational Hydrology and Water Management (H-SAF), and based on MSG (Meteosat Second Generation) satellite platform. The analysis is constituted by a series of synthetic indexes that compare the rainfall field produced by satellite with the actual point observations obtained by the ground sensors network. The analysis was conducted on the whole Italian territory, in the period 2009-2013.