



Use of the H-SAF precipitation products for the characterization and monitoring of heavy precipitation events in the Mediterranean area

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The Mediterranean region is often impacted by heavy precipitation events, that are responsible for damages and sometimes casualties, especially over the coastal areas. Because of its peculiar geographical characteristics, conventional ground-based instruments, such as raingauge and radar networks, cannot be fully exploited for the monitoring, characterization and forecasting of severe events, in particular during their offshore development. For these reasons in the last decades satellite observations, both over geostationary and LEO platforms, have been recognized as a powerful tool to overcome the limitations of ground-based observations.

In this presentation we analyze severe events that have recently affected the Mediterranean area, and the Italian coastal regions in particular, causing damages at the ground and challenging observational and forecasting capabilities. Heavy precipitation systems are described and analyzed here by exploiting active and passive microwave measurements and state-of-the-art precipitation products available in the HSAF project during the Global Precipitation Measurement (GPM) mission era. We also address the problem of estimating precipitation of small-scale and short-living intense thunderstorms and the key role of spaceborne microwave sensors in monitoring and characterizing tropical-like cyclones precipitation.

We highlight how the HSAF satellite products specifically developed for the European area, and thus tailored for the Mediterranean region, show better performances than algorithms designed for global application. We also show few strategies to blend satellite data and products with conventional meteorological data, with the aim to increase the knowledge on severe systems in the Mediterranean area and to support operational forecasting activities in a climate change perspective.