



Combining microwave and VIS/IR satellite data in order to refine precipitation estimation from space - a case study.

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Satellite precipitation estimation from space is normally done using passive microwave data and the estimation methods, with only a few exceptions, make very little use of microphysical information from visible/infrared sensors that are widely available on geostationary and polar orbits.

These two classes of sensors have their own well known strengths and weaknesses in identifying and estimate precipitation areas and intensities. While the infrared channels have better spatial and temporal coverage, they are not sensitive to the lower part of the cloud and its microphysics. Microwave imagery is sensitive to different cloud characteristics, depending on the use of emission or scattering channels, which are sensitive to water and ice through the cloud column. This sensitivity is also very much dependent on the vertical distribution of hydrometeors and their phase.

Additional information on the vertical profile of cloud phase could help improving precipitation estimation from microwave sensors. Here we present a refinement of precipitation estimation from microwave data by using cloud phase profiles derived from the SEVIRI sensor.