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# How to account for uncertainties when assessing rainfall products by direct comparison with gauges

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## Abstract

In the framework of the new French-Indian mission Megha-Tropiques, dedicated to the water and energy budget in the tropics an inter-tropical ground validation plan (MTGV) has been set up. The ground validation data set includes weather radar for the validation of instant rainfall retrieval and gauges networks for the validation of gridded daily accumulations. Both dedicated super sites and operational network are used. The dedicated sites provide a ground truth with a relatively low uncertainty but they are limited to a few places and do not cover the whole variety of tropical climatic and environment conditions . The operational network are useful for regional/continental scale validation but their sampling uncertainties are high because of network scarcity in the Tropics . One challenge in MTGV is to account for the uncertainties in the ground truth in the evaluation of the products. The most recent rainfall products, such as the TAPEER rainfall accumulations provided with MT, come with a tentative uncertainty or error bar. This also needs to be considered in the validation. We will discuss in this talk the methods that we are developing to characterize and account for uncertainties (in both ground truth and product) in satellite-ground surface rainfall comparisons.

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