



Precipitation validation synergies from local, to regional and global scales.

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The validation of satellite derived quantitative precipitation estimates is important for a range of users, including the algorithm developers, hydrologists, climatologists and numerical weather prediction modellers. There is therefore a need for ongoing and comprehensive validation of the more widely used operational satellite precipitation algorithms to benefit both the developers and the users of those algorithms. The International Precipitation Working Group currently provides significant validation effort at the daily time-scales with several operational and semi-operational satellite products and numerical weather prediction models being validated in near real time over Australia, the United States, Western Europe, Japan and South America. Validation of precipitation estimates at increasingly finer space and time scales is becoming more important: for sub-daily time scales radar data is required for validation over large regions. However, errors associated with regional radar data are often too great to accurately measure the satellite errors thus, high quality gauge datasets (e.g. Oklahoma Mesonet, Korean gauge network), must be used.

The Program to Evaluate High Resolution Precipitation Products (PEHRPP) aims to characterize errors in various high resolution precipitation products at many spatial and temporal scales, over varying surfaces and climatic regimes. This is aimed at enabling developers of HRPP to improve their products and potential users to understand the relevant characteristics of the products. The validation of fine-resolution products is seen as complementary to the traditional physical validation strategies used in the verification of mission-specific objectives. In particular, many regional and national surface networks are at temporal and spatial resolutions that are commensurate with satellite observation cycles and spatial resolutions. This paper outlines the current precipitation validation activities and demonstrates the synergies with future validation efforts of new satellite missions.