First results from comparison of rainfall estimations by GPM IMERG with rainfall measurements from the WegenerNet high density network

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The research level products of the Integrated Multi-Satellite Retrievals for Global Precipitation Measurement (IMERG "Final" run datasets) were compared with rainfall measurements from the WegenerNet high density network as part of ground validation (GV) projects of GPM missions. The WegenerNet network comprises 151 ground level weather stations in an area of 15 km × 20 km in south-eastern Austria (Feldbach region, ∼46.93˚N, ∼15.90˚E) designed to serve as a long-term monitoring and validation facility for weather and climate research and applications. While the IMERG provides rainfall estimations every half hour at 0.1˚ resolution, the Wegener-Net network measures rainfall every 5 minutes at around 2 km^2 resolution and produces 200 m × 200 m gridded datasets.

The study was conducted on the domain of the WegenerNet network; eight IMERG grids are overlapped with the network, two of which are entirely covered by the WegenerNet (40 and 39 stations in each grid). We investigated data from April to September of the years 2014 to 2015; the date of first two years after the launch of the GPM Core Observatory. Since the network has a flexibility to work with various spatial and temporal scales, the comparison could be conducted on average-points to pixel basis at both sub-daily and daily timescales. This presentation will summarize the first results of the comparison and future plans to explore the characteristics of errors in the IMERG datasets.