

## Abstract: **Evaluation of Satellite Quantitative Precipitation Estimates (QPEs) Products**

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In this work, we conduct a long-term assessment of the different Satellite based precipitation products from the Reference Environmental Data Records (PERSIANN-CDR; GPCP; CMORPH-CDR; AMSU-A,B, Hydrologic bundle) and from the PMM/GPM suite of products (TMPA, TMPA-RT, IMERG). PERSIANN-CDR is a 30-year record of daily-adjusted global precipitation. GPCP is an approximately 30-year record of monthly and pentad adjusted global precipitation and 17-year record of daily-adjusted global precipitation. CMORPH-CDR is a 17-year record of daily and sub-daily adjusted global precipitation. AMSU-A,B, Hydro-bundle is an 11-year record of a bundle of precipitable water, cloud water, and ice water among others. The products inter-comparisons are performed at various temporal and spatial scales over the concurrent period of record. The evaluation of the different products will include trend analysis and comparison with in-situ data sets from the Global Historical Climatology Network (GHCN-Daily). In addition, we will compare the datasets ability to capture global precipitation patterns and local extreme precipitation events in order to derive a detailed picture of each product strengths and weaknesses.