



Precipitation Datasets for the GPM Iowa Flood Studies (IFloodS) Field Experiment

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In the spring of 2013 NASA will launch a field experiment called Iowa Flood Studies (IFloodS) as a part of the Ground Validation (GV) program for the Global Precipitation Measurement (GPM) mission. The purpose of IFloodS is to enhance the understanding of flood-related precipitation processes in events worldwide. While a number of scientific instruments such as ground-based radars, rain gauges, and disdrometers will be deployed to monitor upcoming rainfall events in Iowa, various precipitation datasets from weather radars, satellites, and rain gauges have been collected over past several years (up to eleven years) and processed to support validation and flood-related rainfall-runoff modeling studies. These historical datasets include TMPA (TRMM Multi-satellite Precipitation Analysis), PERSIANN (Precipitation Estimation from Remotely Sensed Information using Artificial Neural Network), and CMORPH (Climate Prediction Center morphing method) products for satellite estimates; Stage IV, Hydro-NEXRAD, NMQ (National Mosaic and Multi-Sensor QPE), and IFC (Iowa Flood Center) products for radar estimates; ASOS (Automated Surface Observing System), NWS COOP (Cooperative Observer Program), and IFC research network for rain gauge data. These datasets have all different temporal and spatial resolutions as well as uncertainty characteristics, and this provides benefits for product validation using multi-scale data as well as hydrologic modeling where different models require different scale of rainfall inputs. The datasets are organized in a database and available via a web browser-based interface, allowing the users to specify time and space domain of interest. The database connects users' requests with data storage and information and also assists them in finding significant rainfall events with ease and speed by showing basic rainfall statistics for the domain defined by users.