



On the assimilation of hourly data to scale CHIRPS daily precipitation in Uruguay

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The Climate Hazards Group Infrared Precipitation with Stations (CHIRPS) data is a long period precipitation product based on infrared cloud detection and World Meteorological Organization's global telecommunication system Gauge Data (WMO-GD). CHIRPS offer daily, pentadal and monthly precipitation estimations, with 0.05° spatial resolution, from 1981 to near present. CHIRPS products could be improved by merging with new gauge data which are not included in the WMO-GD. However, it is often not possible to directly merge CHIRPS with new gauge data at a daily scale because the daily accumulation period differs. This work aims to scale the CHIRPS daily precipitation to match ground observations. For this purpose, a method based on two weighing coefficients and the conservation of total amount of CHIRPS precipitation is proposed. The data set consist of 4-hourly rain gauges and 40 daily rain gauges with accumulation periods from 04:00 of one day to 03:59 GMT of the following day. Preliminary results show better correlations between scaled CHIRPS and the rain gauge data. The results of this study will provide the baseline for a long-term daily precipitation reanalysis in Uruguay and offers a new technique to scale satellite-derived precipitation data.