Complex topographic features of CHIRPS based precipitation product against IMD dataset over Tamil Nadu, India

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ABSTRACT

In developing countries, the availability of weather data is constricted. The precise analysis of spatial and temporal for hydrological application requires dense network of rain gauge stations. This study seeks to evaluate the spatio-temporal relationship between the gridded India meteorological department (IMD) and Climate Hazards Group Infrared Precipitation (CHIRPS) datasets at different scales (daily, monthly, seasonally and annually) over Tamil Nadu in India for the period of 1981 to 2020. Results show that the high accuracy of CHIRPS in monthly and seasonally. CHIRPS and IMD datasets showed better statistical results in coastal areas. The decrease in correlation with increase in elevation. In particular, the CHIRPS product showed an overestimation of precipitation in the mountains area especially that was in below 500m elevation.