PRELIMINARY EVALUATION OF GPM PRECIPTATION ESTIMATES OVER TWO DISTINCT CLIMATE ZONES WITH HIGH RESOLUTION APHRODITE PRODUCT

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Evaluation of High resolution GPM-IMERG precipitation products are performed over Nepal and Philippines regions against further improved APHRODITE gridded product. Improvement is being reflected in final APHRODITE gridded product with consideration of blacklist/white list as part of quality control method. The evolution is carried out for two consecutive years 2014-15. Various qualitative and quantitative statistical indices such as mean bias, RMSE, correlation coefficient, False alarming ratio, misses and Probability of detection have been considered to evaluate GPM-IMERG precipitation products with APHRODITE. In addition to these statistical indices, intra annual variability of two products during various seasons is shown to highlight the seasonal dependency of GPM performance over two different reasons. The performance of GPM –IMERG subjected to different rainfall intensities is shown by the cumulative probability distribution of two datasets.

The overall performance of GPM –IMERG seems to be good over Philippines region than Nepal region. This is clearly evidenced in terms of mean bias, RMSE and correlation magnitudes over Philippines and Nepal regions. GPM-IMERG is able to follow the intra annual variability shown by APHRODITE product with minor difference observed in precipitation maximum values during rainy seasons. There is good agreement is seen between GPM –IMERG and APHRODITE at different rain fall intensities except underestimation during medium rainfall events over either of regions. However, there is noticeable overestimation of rainfall events is seen over light rainfall intensity over Nepal region with complex topography.

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