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## Intermodel comparison of Short to Medium Range Precipitation Forecasts over the Indian Sub-Continent

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Reliable and accurate precipitation forecast information is needed for various disaster management and mitigation purposes. Spatio-temporal variability of forecast and uncertainty in the NWP models reduces the skill and reliability of the forecasts, hampering greater uptake for various purposes. This study aims to quantify the performance of short to medium range (1 to 7 days) precipitation forecast information from four different NWP models over the Indian sub-continent. The precipitation forecasts from these four models, namely Climate Forecast System version 2 (CFSv2), European Centre for Medium Range Weather Forecasts (ECMWF), Global Ensemble Forecast System (GEFS), and Indian Institute of Tropical Meteorology (IITM), has been assessed using different precipitation indices namely number of rainy days, accumulated precipitation, consecutive wet days, and consecutive dry days. The indices are evaluated for all the models using the evaluation metrics Heidke Skill Scores (HSS) for different seasons and basins. HSS for different indices shows that monthly HSS value was around 0.2 for the consecutive wet days while being 0.4 for the consecutive dry days showing that model's performance was good for the consecutive dry days than consecutive wet days. Results also show that the models are able to capture the number of rainy days and accumulated precipitation satisfactorily. The assessment of models and indices for monsoon and non-monsoon season showed better performance in the non-monsoon season. The evaluation of models and indices spatially over different basins in India showed that the performance was good in the central region (i.e., Narmada and Tapti basin). Overall, the forecasts from the ECMWF performed better compared to GEFS, CFSv2, and IITM.