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Analysis of GFS and GEFS model forecasts at IMD during South west monsoon 2021 , abstract ID - 86

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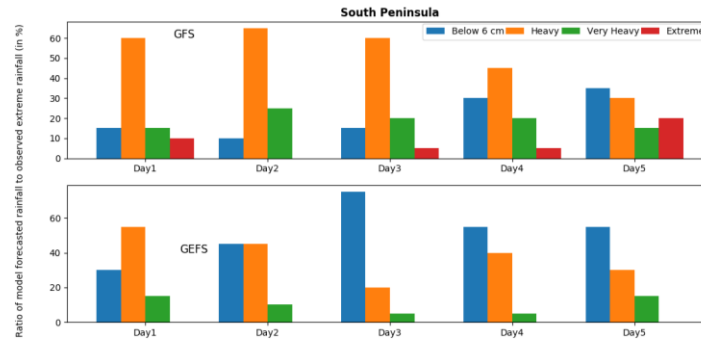
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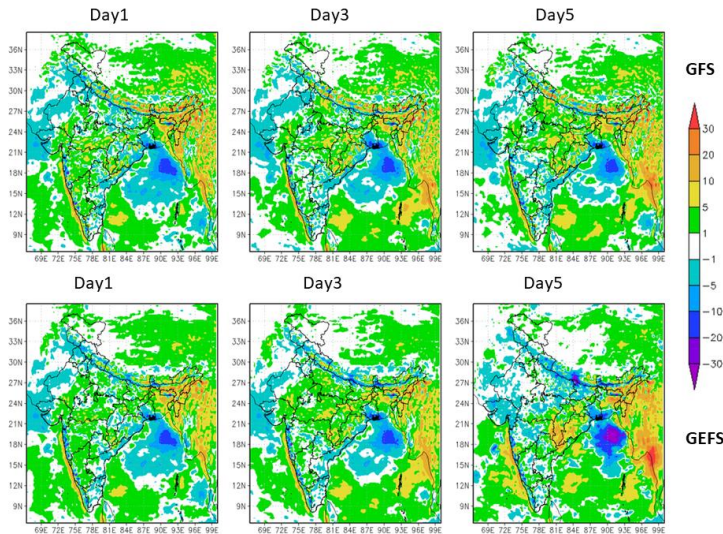
Objective of the paper : India Meteorological Department (IMD) routinely provides forecasts in medium range scale at T1534 resolution using deterministic model Global forecast system (GFS) and ensemble model Global ensemble Forecast system (GEFS) with 21 ensemble members. GFS and GEFS model forecasts are evaluated during South west monsoon season from June to September, 2021 over different spatial domains and different rainfall categories over Indian region. Models forecasts in prediction of extreme rainfall events over the region is investigated

Data, Methodology, Results & Summary

GFS and GEFS model Rainfall forecasts over Indian region are verified against gridded rainfall observations combining IMD rain gauge observations and satellite derived rainfall (Mitra et.al., 2009). Extreme rainfall events over Indian region are investigated separately to find out ability of models to forecast these events .



Ratio model forecasted rainfall in different rainfall thresholds to extreme rainfall observations in South Peninsula



Mean error in GFS and GEFS model Rainfall forecasts during JJAS period

Summary

There is an overall under estimation of rainfall over land region of west coast of India and over estimation of rainfall over North East region in both the models. In the forecast of extreme rainfall events, there is under estimation in both the models while GFS forecasted these events better than GEFS ensemble mean forecasts. GFS model forecasted 85 % observed extreme rainfall events in heavy rain or above category in the homogeneous regions South Peninsula, Central India and East and North East India.