Forecasts of Rainfall (Departures From Normal) Over India By Dynamical Model

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Abstract

Intra-seasonal lack(excess) of rainfall that lead to situations of meteorological drought (flood) in one or other part of country every year apart from inter-annual variability of rainfall(Krishnamurthy, 2000). India received 88% of long period average (normal) rainfall 886.9 mm during southwest monsoon season(monsoon) in 2014. Northwest(NW), central, northeast (NE) and south peninsula of India received 79%, 90%, 88% and 93% of normal rain respectively. Twelve meteorological subdivisions i.e. about 30% area of country received deficient category(below 19% of normal) by the end of monsoon. Forecasts of Global Forecasting System(GFS/ T574L64) at ESSO-NCMRWF have been studied for all the thirty six meteorological subdivisions(subdivisions) of India during monsoon(June to September) 2014. Predicted values of weekly percentage departure of rainfall from normal are found in good agreement with observed kind of departures(-ve or less than normal) on more than about 80% of the cases at sub divisional spatial scales. Model forecasts for monsoon season were consistently found reasonably good for both the recent years 2009 and 2014 when India received 22% and 12% less rainfall than normal respectively. Scores of models forecasted weekly rainfall over meteorological subdivisions for monsoon 2014 are found improved compared to those for monsoon in 2009.

Keywords: Rinfall; Model; Forecast; Meteorological subdivisions; Monsoon; % departure of rainfal (weekly) from normal