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Supplemental Material

Weather and Forecasting

Skill Evaluation of Extended-Range Forecasts of Rainfall and Temperature over the
Meteorological Subdivisions of India

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Supplementary material to "Skill Evaluation of Extended Range Forecast of Rainfall and Temperature over Meteorological Subdivisions of India" authored by Susmitha Joseph, A. K. Sahai, R. Phani, R. Mandal, A. Dey, R. Chattopadhyay and S. Abhilash

S1. Example of a ROC curve

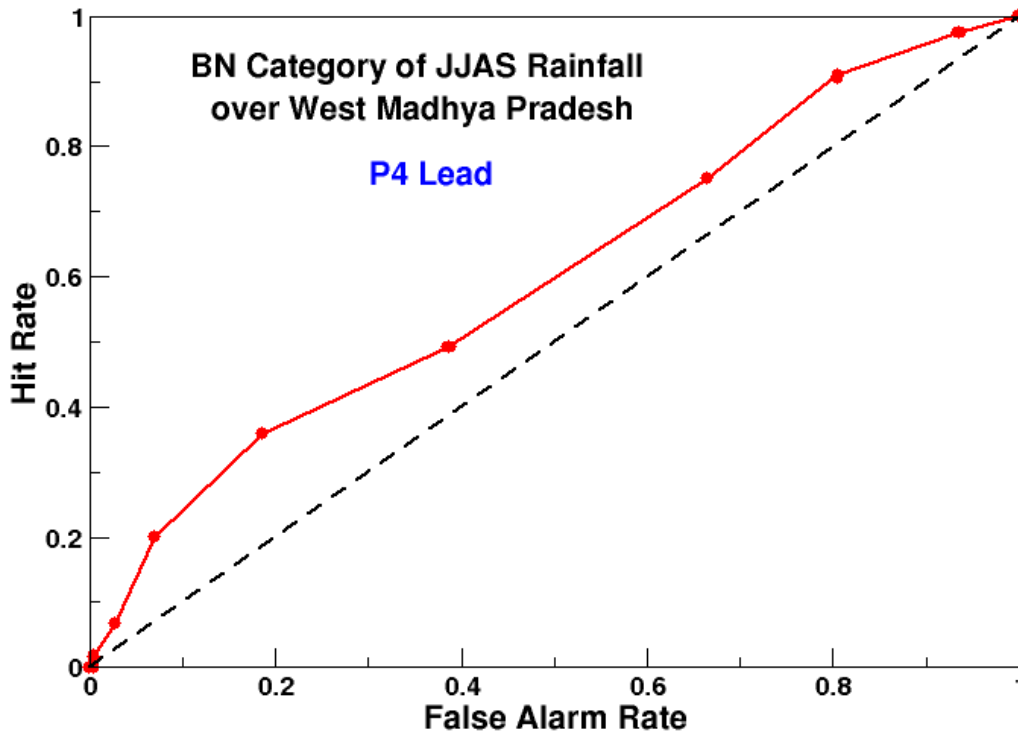


Figure S1: An example ROC diagram of the P4 lead forecast of below normal (BN) category of JJAS rainfall over the meteorological subdivision, West Madhya Pradesh.

S2. General skill of extremes in rainfall and temperature

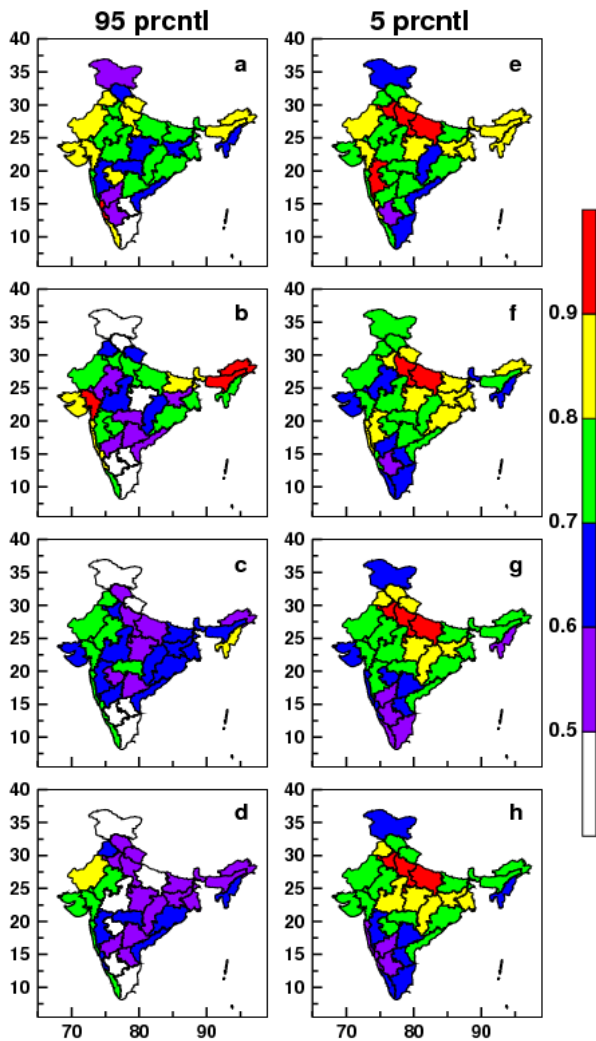


Fig. S2: Pentad wise (P1 to P4) Relative Operative Characteristic Area Skill Score (AUC) of extremes in JJAS rainfall. Panels a-d correspond to the extremes above 95 percentile, whereas panels e-h represent those below 5 percentile.

The skill of the EPS in predicting the extremes in JJAS rainfall is shown in Fig. S2. The left (right) column shows the area under Relative Operative Characteristic curve (AUC) for the higher (lower) percentiles of JJAS rainfall. It is seen that the AUC values are skillful over all subdivisions for the 5th percentile, compared to 95th percentile. However, it is noted that the EPS is skillful in predicting the high extremes until 4th pentad lead, over most parts of the country.

Fig S3 depicts the prediction skill of extremes in OND rainfall. It is clear from the figure that the EPS possess reasonable skill in the predicting both side of the extremes, i.e, the 95th and 5th percentiles.

AUC skill scores for high extremes (95th percentile) in maximum temperature during AMJ is shown in the left column of Fig. S4. The right column of the figure delineates the same for low extremes (5th percentile) of minimum temperature during NDJF. It is noted that the EPS is pretty good in predicting these extremes as well.

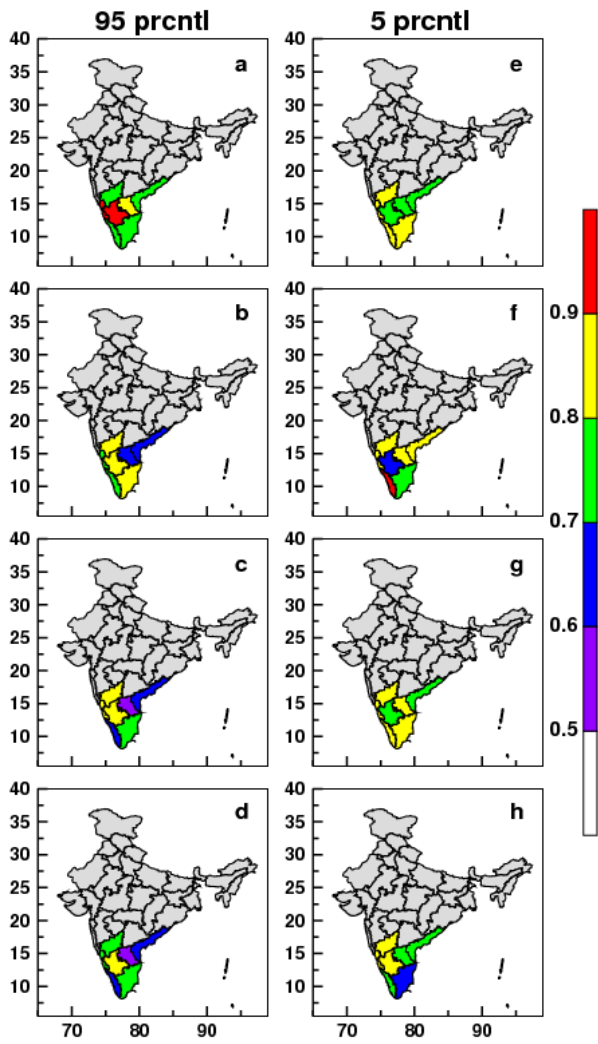


Fig.S3: Same as Fig S2, but for OND rainfall. The subdivisions that are not affected by OND season as shaded using grey scale.

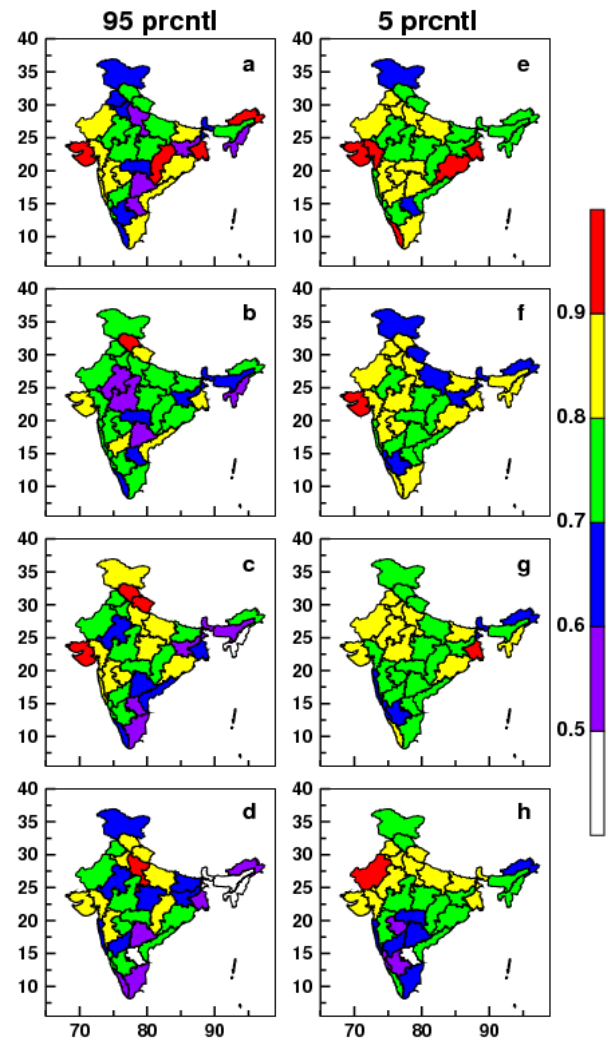


Fig.S4: (a-d) Same as subfigures a-d of Fig. S2, but for maximum temperature during AMJ, (e-h) same as subfigures e-h of Fig. S2, but for minimum temperature during NDJF.