SESSION: (B3) S2D ensemble predictions and forecast information

(B3-09)

Evaluating a new calibration method for Seasonal Probabilistic Prediction for Indian Summer Monsoon

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Though a plethora of study exists to make deterministic model for predicting seasonal Indian summer monsoon rainfall (ISMR), a few studies have described probabilistic prediction which conveys the inherent uncertainty of the forecast. Probabilistic seasonal prediction can be done based on the general circulation model (GCM)'s outputs, however the output from these ensemble prediction systems cannot be used directly and requires further calibration in order to produce reliable forecasts. In this study, Extended Logistic Regression (ELR) based calibration method implemented in models from The North American Multi-Model Ensemble (NMME) project with gridded data from Indian Meteorological Department. Though, ELR method has been successfully applied in the past to ensemble weather and sub-seasonal forecast, this is the first time to our knowledge that it has been used to produce seasonal probabilistic forecast of ISMR. ELR methods also allowed generating forecast in more flexible format in addition to commonly used tercile probability forecast. The flexible format enables users to extract information for those parts of the forecast distribution of greatest interest to them, especially the probability of extremely dry/wet conditions. The skill of ELR-based forecasts is evaluated over 1982-2010 following a leave-one-year-out cross-validation and are found to be more skillful than the more familiar approach of estimating the forecast probabilities by counting how many members exceed a certain threshold.