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Seasonal climate predictability in multiple model ensembles

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In this study, the superiorities of the super ensemble for seasonal climate prediction are investigated based on multiple model ensembles. The investigations are carried out mainly in two aspects: i) a comprehensive evaluation of predictions for each grid over the global domain by the deterministic, probabilistic and potential prediction skill measures; 2) the most predictable component analysis using
information-based method. It is found that improvements of the super ensemble are mainly due to the increase of ensemble size in the mid-high latitudes, and the offsets of model uncertainties in the tropical regions. Further, the role of the coupling of air-sea in seasonal climate predictability is systematically investigated by comparing ECMWF multiple model ensemble and Canadian historic forecast project (HFP) ensembles.