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Seasonal forecast skill of East Asia summer monsoon using CCA associated with ENSO

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Prediction of precipitation associated with East Asian summer monsoon band is not easy using state-of-the-art atmospheric general circulation models (AGCMs) which participate in Intergovernmental Panel on Climate Change 5th Assessment Report (IPCC-AR5). Also, those models have problems in realistic simulation of rain band, which may result from its complex features including narrow meridional scale characterized by moisture contrast. The intensity of the East Asian summer monsoon is highly correlated with the western North Pacific subtropical High variability which is the most dominant climate anomaly in the western North Pacific-East Asian region in summer season. Based on this relationship, we suggest a seasonal prediction model using canonical correlation analysis (CCA). The forecast skill by the seasonal prediction model for East Asia summer monsoon region is discussed in this study. In particular, it is suggested that the forecast skill of the prediction system, which depends on geographical locations, is relatively high during El Nino rather than La Nina. Also the controlling factors for changes in the forecast skill are discussed in association with ENSO.