

Evaluation of northeast monsoon cold surges and the impact of air-sea interaction over Southeast Asia in coupled NWP

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Abstract:

Extreme rainfall events over Southeast Asia are influenced by large-scale processes, such as the Madden-Julian Oscillation and cold surges during the northeast winter monsoon season, which have promising predictability for forecasting. We evaluate the skill of the Met Office global NWP system and the experimental coupled NWP system in representing extreme rainfall events over this region and their large scale drivers. The importance of air-sea interactions for these processes is also looked at for extended range up to 15 days and also in climate simulations. Northeast monsoon cold surges are well predicted in these models, and their nonlinear interaction with MJO events explains some of the highest impact weather events. This provides better understanding of the region's sub seasonal variability with scope for better preparedness.