



Atmosphere-ocean interaction in the Indian monsoon

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Air-sea interaction is an important mechanism contributing to the northward propagation of monsoon oscillations. Recent field programs such as MISO-BOB aim to examine such interactions in the Indian Ocean, especially the impact of atmospheric convection on the upper ocean in the Bay of Bengal. The goal of this work is to examine how local interactions translate into intraseasonal variability and how these processes are represented in global coupled models. We examine large-scale summer ISO indices based on monsoon area winds, OLR, and precipitation and their correlations with ocean surface parameters both in observations and in global coupled models. The observed lag correlations using various indices and surface variables data indicate significant air-sea interaction in areas characterized by large intraseasonal variability, such as the Bay of Bengal. This interaction appears to be weakened in model simulations. We examine the ISO forecast skill and the feedbacks between intraseasonal variability and the atmosphere-ocean interaction in various areas of the Indian Ocean.