



SST forcing of decadal Indian monsoon rainfall variability

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Using ensemble integrations of an Atmospheric General Circulation Model (AGCM) forced globally with observed sea surface temperature (SST) anomalies it is shown that the observed decadal variability of Indian monsoon rainfall (IMR) can be reproduced, although amplitudes are somewhat overestimated. A second AGCM ensemble forced only in the Indian Ocean region suggests that the local Indian Ocean SST forcing is contributing significantly to the decadal IMR variability. Here, cold (warm) equatorial SSTs cause low-level divergence (convergence) that in turn modifies the local Hadley circulation and strengthens (weakens) the Indian monsoon circulation. This result is complementary to previous findings that IMR variability is mainly determined by an atmospheric teleconnection with ENSO.