



Projected Increases in Daily to Decadal Variability of Asian-Australian Monsoon Rainfall

Aurel Moise, Josephine Brown, and Robert Colman

Australian Bureau of Meteorology, Melbourne, Australia (aurel.moise@bom.gov.au)

Changes in tropical rainfall variability in future climate will pose challenges for adaptation. To evaluate changes in Asian-Australian regional monsoon wet season rainfall, daily data from historical and future (RCP8.5 scenario) coupled climate simulations is band-pass-filtered to isolate variability on near-daily, weekly, monthly, intra-seasonal, annual, interannual and decadal time scales. This method is used to quantify changes in variability from 35 CMIP5 models for each time scale over the Australian, South Asian and East Asian monsoon domains.

The role of increased atmospheric moisture is examined by estimating the change due to an idealized thermodynamic enhancement. This produces larger increases in variability than the projected change for the Australian monsoon on all time scales, while the South Asian and East Asian monsoon response is smaller or larger than projections for different time scales.