



Assessment of South Asian Summer monsoon simulation in the CMIP5 coupled climate models

V. Prasanna

APEC Climate Center, Busan-612020, Korea, Republic Of (prasa_arnala@yahoo.com)

This paper evaluates the performance of twenty eight state-of-art CMIP-5 coupled atmosphere-ocean general circulation models (AOGCM) in their representation of regional characteristics of monsoon simulation over South Asia. The AOGCMs, despite their relatively coarse resolution, have shown some reasonable skill in depicting the hydrological cycle over the South Asian monsoon region. However, considerable biases do exist with reference to the observed precipitation and also inter-model differences. The models are evaluated for the ENSO-monsoon teleconnection as well as the veracity of modeled air-sea interactions in the Indian Ocean during the summer monsoon season. The monsoon rainfall and surface flux bias with respect to the observations from the Historical run for the period nominally 1850-2005 are discussed in detail. Our results show that the coupled model simulations over south Asia exhibit large uncertainties from one model to another. The analysis shows the presence of large systematic biases in coupled simulations of boreal summer precipitation, evaporation, and sea surface temperature (SST) in the Indian Ocean, often exceeding 50% of the climatological values. Many of the biases are common to many models. Overall, the coupled models are found to be deficient in portraying boreal summer monsoon over the south Asian monsoon region and needs further improvement.