Applying a monsoon index to model data

A. Turner, P. Inness and J. Slingo
Centre for Global Atmospheric Modelling (CGAM), University of Reading, Reading,
U.K.
a.g.turner@rdg.ac.uk

Given that the monsoon and coupled ocean-atmosphere system of the Pacific basin undergo interannual oscillations, then any criteria which could successfully identify the presence of a strong or weak monsoon could be useful in aiding its predictability. A commonly used measure of monsoon strength is the dynamical monsoon index (DMI), and here I apply it to a 20 year integration of the UK Met Office model HadCM3, concentrating on the Indian summer monsoon region. Composites are generated for strong and weak monsoon years as defined by the DMI, and comparisons are made of their wind, outgoing longwave radiation (OLR), and precipitation fields. OLR is found to be reduced over the Indian region in anomalously strong monsoon years, coupled with enhanced precipitation in this region and stronger Pacific basin trade wind patterns. Further work will involve looking for basic state errors in the HadCM3 model by making comparisons with a flux-adjusted version of the model.

Meteorology (Poster)