

The Indian monsoon, zonal mean easterlies, and implications on precipitation in the subtropical Americas in northern summer.Patrick Kelly[†];[†] University of Miami / RSMAS, USALeading author: pkelly@rsmas.miami.edu

Teleconnections between the Indian monsoon and the Americas midsummer drought are studied in observations and global model experiments. Eddy momentum fluxes from stationary eddies—most prominently the western sector of the Indian monsoon Tibetan High—are the primary mechanism governing the negative tendency of zonal mean momentum in the northern summer subtropics. The strengthening of the zonal mean easterlies around July is significantly correlated with the concurrent strengthening of the North Atlantic Subtropical High (NASH) and rainfall deficit in the western North Atlantic basin. Interannual variations of the Indian monsoon reflect changes in the strength of these zonal mean easterlies, with downstream teleconnections on the westward displacement of the NASH and precipitation in the western Atlantic. An increase in rainfall in India corresponds to a decrease in rainfall in the subtropical Americas. This observed anticorrelation is investigated further with modeling work using the Community Atmosphere Model (CAM).