

A Madden-Julian Oscillation Simulation Using a Global Cloud-Resolving Model

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A Madden-Julian Oscillation (MJO) simulation was performed on the Earth Simulator using a model which allows direct coupling of the atmospheric circulation and clouds. We successfully simulated the slow eastward migration of the MJO event occurred during December 2006 and January 2007. The principal factors governing the realistic eastward migration of the MJO were the interference from the mountains of New Guinea and drier air over an area with a relatively cool SST, an eastward propagating signal that originated from a tropical depression-type disturbance, and abundant moisture supply from the east probably in association with a westward propagating disturbance.