



Reduction of Double ITCZ Biases Associated with Convection in CAM5

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A previous study indicates that the uncertainty in the projection of global warming due to doubling of CO₂ is closely related to the double ITCZ biases in global climate models. Thus, reducing the double ITCZ biases is not only important to getting the current climate features right, but also important to narrowing the uncertainty in future climate projection. In this work, we present recent progress in alleviating the double ITCZ problem through improvement in convective parameterization, including modifying trigger conditions for convection onset, accounting for convective memory, a better representation of entrainment rate, updraft model and closure. These changes together have resulted in a dramatic improvement in the simulation of the ITCZ. In this presentation I will show results based on both atmospheric only and coupled simulations with incremental changes of each element to understand the roles of different factors in convective parameterization and coupled atmosphere-ocean interaction that lead to the improved simulation of ITCZ.