



Effects of vertical resolution, dynamical core, and top boundary condition on the simulation of the Quasi-Biennial Oscillation in the Community Atmosphere Model, Version 5

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The Quasi-Biennial Oscillation (QBO) of the tropical zonal mean wind is a prominent feature of the tropical stratosphere. Although the basic driving mechanism for the QBO has been understood for many years, only a few contemporary GCMs can reproduce it. We have successfully simulated the QBO using the Community Atmosphere Model, Version 5 by increasing the vertical resolution and adding parameterized non-orographic gravity waves. Although the existence of a tropical wind oscillation is very robust in our model, its characteristics are very sensitive to the choice of vertical levels, choice of dynamical core, and top boundary condition for non-orographic gravity waves. We will present here the sensitivity of the resolved wave spectrum and the simulation of the QBO to these three factors.