



## **Evaluation of the simulation of quasi-biweekly oscillations over the South China Sea in early and late summer in CAM5**

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The quasi-biweekly oscillation (QBWO, 10-20 days) is one of the significant variations in the tropics, closely related to important climate and weather systems, such as monsoon, typhoon, and heavy rainfall in southern China. The QBWO has a distinct intraseasonal difference over the South China Sea (SCS) between early and late summer. A nearly local periodic variation over the SCS is observed in early (May-June, MJ) summer, whereas it shows a clear northwestward-to-westward propagation from east of the Philippines to the SCS in late (August-September, AS) summer. This work evaluates the simulations of QBWO in CAM5. Results show that CAM5 simulates the overall features of QBWO well over the SCS in MJ and AS, although the intensity is overestimated in both periods. Diagnosis of eddy vorticity budget is performed to understand the simulation of the QBWO. Results show that advection of the beta effected by the meridional wind anomaly is a crucial contributor to the evolution of QBWO, consistent with previous observations. Dynamically, the evolution of the QBWO is due to the oscillation in meridional wind. Thus, the correct simulation of circulation at quasi-biweekly timescale by the model is responsible for the well simulated evolution of the QBWO.