

Comparing observed equatorial zonal winds around the stratopause with the QBOi model ensemble

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This study uses simulation results from the Quasi-biennial Oscillation initiative (QBOi) comparing global models that are able to internally generate the QBO. While the focus of the main initiative is on the QBO, many of the participating models extend into the mesosphere or higher and therefore simulate the altitude range where the tropical semi-annual oscillation (SAO) in zonal wind has peak amplitude. The multi-model average of the simulations shows realistic amplitude and phase for the stratopause SAO but the majority of the models simulate annual mean zonal winds that are stronger easterly than the wind deduced from observations. The comparisons will focus on understanding the underlying source of differences in the Kelvin wave momentum forcing between the simulations and that calculated from SABER observations.

Key words: SAO, Kelvin waves, multi-model, SABER