

Climatological vertical features of Hadley circulation depicted by the NCEP/NCAR, ERA-40, NCEP-DOE AMIP-2, and JRA-25 reanalysis

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The climatological features of the pole-ward, equator-ward edges, and the width of the tropical Hadley Cell (HC) during the annual cycle is studied based on four reanalyses datasets. The result indicates that the amplitude of HC in the Northern Hemisphere is much intense than that in the Southern Hemisphere. And the amplitude of equator-ward edge is much larger than that of the pole-ward edges in both hemispheres. In addition, it is found that the ERA and JRA show big inconsistency comparing with the other datasets in depicting the locations of pole-ward edges of HC.

Key words: tropical Hadley circulation, pole-ward edges, equator-ward edge, seasonal march