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LONG-TERM CHANGES IN QUASI-STATIONARY PLANETARY WAVES IN ANTARCTIC REGION FROM THE TOMS TOTAL OZONE DATA

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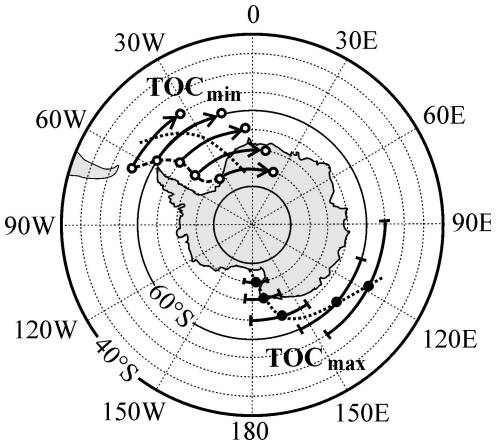
Decadal variations of the quasi-stationary wave amplitude and zonal structure are analyzed using the TOMS satellite data. Seasonal dependence of total ozone content (TOC) is considered. The amplitudes of quasi-stationary planetary waves in TOC zonal distribution at high latitudes of Southern Hemisphere are calculated for 1979-2005. The spring period September-November is considered owing to the ozone hole development and planetary wave activity increasing during these months. We analyze the latitude band 55-75S, which covers edge and inner parts of ozone depletion. The highest values of the quasi-stationary wave amplitude at latitude 65S in October are observed. The positions of wave minimum and maximum at five latitude circles are obtained. It is shown that maximum is nearly invariable and minimum drifts eastward toward the Greenwich meridian.



Average geographical locations of the quasi-stationary zonal maximum in total ozone longitudinal distribution (TOC_{max}, close circles with indication of standard deviations) and zonal minimum (TOC_{min}, open circles and arrows toward the drift direction) in 1979-2004.