



Quasi-stationary planetary waves in ozone distribution in Arctic and Antarctic regions

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The quasi-stationary planetary waves in ozone distribution in the high latitudes of Northern and Southern hemispheres are investigated. Version 8 of TOMS total ozone satellite data is used for visualization of the variations of the longitudinal ozone distribution from day to day was made using the five-month time–longitude plots for the 1979–2004 period. The five-month average longitudinal profiles were analyzed to determine the main characteristics of the quasi-stationary distribution of total ozone content. Seasonal variations of amplitude and phase values are compared for Arctic and Antarctic regions. The quasi-stationary planetary wave 1 is prevailing in the region of ozone hole in spring in Southern hemisphere, in Northern hemisphere the wave 1 is also predominate, although in separate years the wave 2 dominates. The maximal total ozone disturbances by planetary waves in Arctic region are observed in a winter-spring period (January-March). The difference in ozone distribution in polar regions can impact on tropopause height changes because of colder (up to 10°C) lower stratosphere of Antarctic region. Long-term changes of quasi-stationary wave characteristics are discussed. The influence of underlying surface is considered as one of the possible causes of the differences existence.

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