



Quasi-stationary planetary wave in total ozone over Antarctica and continent boundary effect in the wave extreme positions

A. Grytsai (1,2) O. Agapitov (2) O. Evtushevsky (2) **G. Milinevsky** (1,2)

(1) National Antarctic Scientific Center, Kyiv, Ukraine, (2) National Taras Shevchenko University of Kyiv, Ukraine (science@uac.gov.ua / Fax: +38 044 2463880 / Phone: +38 044 2463883)

Characteristics of the zonal asymmetry in total ozone content, caused by the quasi-stationary planetary waves, are studied using the 8th version of TOMS satellite spectrometer data for 1979-2004. Latitude band 55-75°S is considered. The daily longitudinal TOC distributions at one latitudinal circle are analyzed. This method allows to calculate amplitudes and phases of spectral components in zonal distribution and to compare their latitudinal changes. Monthly and three-month mean characteristics of quasi-stationary distribution are determined. The stationary wave with zonal wave number $m = 1$ gives the most important contribution in ozone allocation. Averaging through the three spring months September-November shows, that (1) the highest zonal wave amplitude 60 DU and the rate of amplitude rise about 10 DU per decade are observed at the latitude 65°S; (2) the region of the zonal minimum is displaced systematically to the East from 150°W to the Greenwich meridian; (3) geographical location of the extremes reproduces the continent contour in the corresponding longitudinal sectors. Results display a distinction in the influence of the topographic and thermal sources of the stationary planetary waves on the formation of the ozone zonal asymmetry over Antarctica.