

## **TOTAL OZONE EVOLUTION IN THE NORTHERN MID- AND HIGH LATITUDES**

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During the last three years, the estimates of the mean rate of the global column ozone decrease over the Northern mid- and high latitudes have changed considerably. Column ozone decrease over the period 1979-2000 in mid- and high latitudes of the Northern Hemisphere was largely due to the increased frequency and magnitude of negative column ozone anomalies observed in 1992-1997. During that period, column ozone deficiency in the high latitudes of the Northern Hemisphere was up to 40 % (Russia, Siberia), the duration of the anomalies being up to 2 months and the area covering an essential part of Russia. In 1998 and 1999, spring-time ozone reduction in the high latitudes of Russia was practically absent and in 2000, it was essentially less than measured in 1995 and 1997. During the last three years, the process of column ozone increase is observed over the most part of the mid- and high latitudes of the Northern Hemisphere. In Russia, specifically, the Siberian-Yakutian spring ozone anomaly (that was the main regular ozone anomaly observed in the Northern Hemisphere) has almost disappeared, and both the magnitude and statistical significance of column ozone trend over the European part of Russia have diminished. The reasons for column ozone evolution and anomalies ("holes" and "mini-holes") in both hemispheres seem to be largely related with climate changes and meteorological conditions. The present-day scientific understanding of the current state of and the reasons for the observed evolution of the ozone layer is far from being comprehensive and, particularly, it failed to enable the prediction of both ozone changes at the end of 1990s and the formation of separate ozone anomalies in the Northern Hemisphere. The work is supported by RFBI Projects 99-05-64977 and 00-05-64152.