VALIDATION OF ENVISAT SCIAMACHY LEVEL 2 PRODUCTS WITH THE DATA OF RUSSIAN GROUND-BASED MEASUREMENTS

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The Russia and NIS (New Independent States) have a network of ground-based measurements of the total content and near-surface concentration of ozone and other trace gases. The network is equipped with a number UV/visible and IR spectrometers, providing regular data on O3, NO2, CO, CH4 and H2O vertical column amounts. Some of the instruments are involved in the international NDSC (Network for the Detection of Stratospheric Change) program as secondary stations. Besides, a special ground-based ozone monitoring network enumerates about 40 stations over the Russia and NIS with a regular measurements of total ozone content. The network is equipped with filter ozonometers M-124 calibrated against Dobson spectrophotometer, which is regularly compared with the WMO standard.

Up to now, the data of Russian ground-based atmospheric trace gases measurements have been barely used for validation of satellite data. The recent validation of ERS-2 GOME operational products that involved comparisons with correlative Russian ground-based measurements (O3 and NO2), have demonstrated an importance of using that data in order to extend the geographical region, duration and measurement conditions of the comparisons and, consequently, to enhance the quality of satellite data.

The present study is focused on the first validation results of SCIAMACHY nadir level 2 data by means of comparisons with correlative ground-based measurements (ENVISAT AO-427). The recent experience of GOME level2 products with Russian ground-based network will be also presented in short (ERS AO3-174). Geophysical validation of SCIAMACHY nadir products will involve the data of ozone vertical
columns observed over the network of about 20 stations (14-130E/43-78N), and also NO2, CO, CH4 and H2O column measurements at several locations in Russia and NIS. The respective performance of SCIAMACHY measurements will be investigated and the reasons of possible discrepancies found out.

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