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Seasonal variability of concentrations of small gaseous impurities in atmosphere of Ulan-Ude

G. Zhamsueva, A. Zayakhanov, B. Tsydypov, V. Tsydypov, A. Ayurzhanaev
Buryat Science Center SB RAS, Russia (lrf@ofpsrv.bsc.buryatia.ru / Phone: +7-3012-434664)

For revealing seasonal and diurnal variations of gaseous impurities of atmosphere of Ulan-Ude (51.8 N, 107.6 E) synchronous continuous measurements had been carried out from 2000 until 2005. Supervisions were carried out at height of 10 m from a ground surface and on distance of 30 m from the transport highway on the monitoring site located in a centre of the city. Measurements of concentrations of gaseous impurities were carried out continuously by means of the automated system of registration and statistical data processing. The chemo luminescent gas analyzers of ozone, oxides of nitrogen and electrochemical gas ana-lyzer of carbon oxide are a part of the given system. Measurements and record were carried out continuously with the period of quantization 1 second, sampling volume equals 250000 values with the subsequent averaging for 1 hour. The observations of meteorological parameters (tem-perature, pressure and relative humidity, velocity and direction of wind) were conducted with the help of automated acoustic 2-level meteorological complex AMK-02B. The high values of ozone concentration are observed in the late spring and in the beginning of summer, the low values are observed in January. The content of carbon oxide has well-defined seasonal variation with the maximal values of concentration in July and minimal in December. Seasonal variabilities of oxide nitrogen concentration with a maximum during the cold period of year are defined by influence of emissions of stationary sources and auto transport basically. The minimal values of oxide nitrogen concentration during summer period are defined by its outgo on formation of dioxide nitrogen owing to interaction with ozone. Such behavior proves out in an interannual variation of seasonal variability of concentrations of gaseous impurities. Thus from 2000 until 2002 the tendency of increase of mid-annual concen-trations of ozone, oxides of nitrogen on the average on 1,1 mkg/m3, carbon oxide on 1,8 mkg/m3 is noted. Average concentrations of NO2, NO are insignificant for city conditions, but

considera-bly higher for rural sites of the Baikal region. In the given report comparison of diurnal variations in Ulan-Ude city, in the Desert Gobi and on Lake Baikal are also presented.