Analytical model of [NO], N_e and T_n in the ionosphere D-region

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The model of the altitude distribution of T_n (the temperature of neutrals) was made on base of experimental data. The analytical model of the altitude distribution of the NO density was made on a base of numerical results of the mesosphere and the low thermosphere (50-500 km) models. Resulting analytical expression for NO density depends on main atmospheric species densities N_2 and O_2 and neutral gas temperature. Altitude distribution of N_e density was obtained from expression for NO. The analytical expressions for NO and N_e easily explains winter [NO] and [N_e] exceeding over summer values and winter anomaly in ionosphere D-region.