



MODEL OF VERTICAL DISTRIBUTION OF ATOMIC OXYGEN CONCENTRATION IN REGION OF THE MESOPAUSE AND LOWER THERMOSPHERE

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The model of altitude distribution of atomic oxygen concentration for night time at heights of mesopause and lower thermosphere is created. It uses the long-term (1955-1995) data about the altitude distributions of temperature of the middle atmosphere, empirical model of variations of intensity, temperatures and heights of a radiating layer of atomic oxygen emission 557.7 nm for the night, and also photochemical processes of its excitation. The seasonal variations of altitude distribution of atomic oxygen concentration calculated by this model depend on a solar activity and a long-term temperature trend. Comparison of model results with a number of available data of the rocket measurements has shown their consent. The obtained altitude distributions of the atomic oxygen concentration demonstrate the wide variations caused by seasonal changes. However, model CIRA-1996 operates with smaller values of absolute concentration and does not display the revealed temporal variations of the atomic oxygen concentration and dependence on solar activity. This work was supported by the Grant N 2274 of ISTC.