

To the problem of modelling of long-term changes of structure of the middle and upper atmosphere

N.N.Shefov (*Obukhov Institute of Atmospheric Physics RAS, 119017 Moscow, e-mail: meso@omega.ifaran.ru*)

Results of the analysis of long-term changes of temperature and density of a middle and upper atmosphere have enabled to obtain the data on altitude distribution of the subsidence rate r_s of the upper atmosphere. This regularity is described by power dependence (correlation coefficient $r = 0.987 \pm 0.009$) $r_s = r_{s0} (Z/Z_1)^S$, km / yr, where $Z_1 = 213 \pm 10$ km is a height on which there is a subsidence rate $r_{s0} = 1$ km / yr, $S = 2.63 \pm 0.05$. Thus, Z_1 and S are the generalized characteristics of process of subsidence the atmosphere, determined by operational climatic mechanism, creating its long-term cooling. Therefore modelling construction of the processes causing cooling and subsidence of the upper atmosphere, should provide the determination of parameters Z_1 and S for the control of the agreement of the accepted model with the results of measurements as to various scripts of theoretical models there will correspond their values Z_1 and S . Integration of the subsidence rate allows to make an estimation of time of subsidence of an atmosphere at given limits of heights.