



SOME PROPERTIES OF ACOUSTIC-GRAVITY WAVES IN AN ATMOSPHERE WITH THE REALISTIC PROFILE OF THE TEMPERATURE

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Model problems of propagation of acoustic-gravity waves in an atmosphere are considered in view of its nonisothermality. The analytical models of the realistic high-altitude temperature profile permitting to find precise solution of a wave equation are obtained. The character of upper boundary conditions for the lowest mode of a high-frequency branch of acoustic-gravity waves, whose dissipation is unessential, is found out. The characteristics of the lowest mode of oscillations for fast acoustic-gravity waves are defined. The influence of nonlinear saturation on the value of this frequency is cleared up. The instability of waves conditioned by the atmosphere's nonisothermality is considered. For the model profile of temperature, given analytically and well describing an experimental dependence, the precise solution for fields of internal gravity waves is found. The characteristic equation for these waves in an atmosphere with a linear dependence of temperature on height is obtained, the problem of stability is researched.