



Disturbances of the upper atmosphere , initiated of infrasound and internal gravity waves from moving sources on the Earth's surface and lower atmosphere.

Sergey Kshevetskii and Ivan Karpov

I.Kant Baltic Federal University, Theoretical Physics, Kaliningrad, Russian Federation (spkshev@gmail.com)

Numerical simulation methods were applied for consideration the problem of perturbations of the upper atmosphere due to propagation of wave disturbances from moved sources of acoustic gravity waves (AGW) in the Earth's surface and lower atmosphere. Such sources can be associated with meteorological and seismic processes , as well as disturbances in the atmosphere due to the passage of the solar terminator. Model description of wave disturbances in the atmosphere takes into account the nonlinear effects of the interaction of AGW among themselves and with the mean state of the atmosphere, as well as dissipative effects in the propagation of waves from the Earth's surface to an altitude of 500km. Model perturbation source generates wave disturbances at frequencies close to the Brunt-Vaisala frequency at the surface of the Earth. The variants of the calculations in which the source is propagated along the surface of the Earth at different velocities were calculated. As shown earlier , infrasonic waves and internal gravity waves effectively penetrate to the heights of the upper atmosphere and form large-scale disturbances at altitudes of 200 km due to dissipation. In the present calculations were analyzed asymmetric reaction of the upper atmosphere due to the motion of the wave source along the Earth's surface and its dependence on the velocity of the source .