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of the effect of a fine layered structure of the lower troposphere on propagation of acoustic pulses

The results of acoustic sounding of the lower troposphere by using detonation generators of acoustic pulses are presented. Such sounding method is based on a partial reflection of the acoustic pulses with shock fronts from vertical wind-velocity and temperature gradients continuously varying with height in the troposphere, and on the penetration of reflected signals into the acoustic shadow zone. The anti-hail acoustic system developed in Armenia (Talin) was first used as a generator of acoustic pulses for sounding of the troposphere. The experimental results have been compared with those obtained earlier in similar experiments carried out near Zvenigorod with the use of a special detonation generator of acoustic pulses. Due to high vertical resolution of the sounding method (about 1 m) the vertical profiles of layered effective sound speed fluctuations with vertical scales from a few to a few tens of meters have been retrieved in stably stratified atmospheric boundary layer (altitudes are in the range 250-650m). The influence of these fluctuations on the form and amplitude of low-frequency acoustic signals at a long distance from their pulsed source has been studied.

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