

**Numerical model of radial wind velocity in case of Gaussian approximation of range weighting function.** Evgeniya Shelekhova and Alexander Shelekhov, IMCES SB RAS (Russia).

**ABSTRACT**

In this paper a calculation results of standard deviation of radial wind velocity depending on the Doppler lidar parameters and state of atmospheric turbulence during the day are presented. We used Gaussian approximation of range weighting function for the numerical simulation of standard deviation of radial wind velocity. For this approximation formula of size of scattering volume agrees with Frehlich's equation in case of small and large sizes of scattering volume. Using Gaussian approximation of range weighting function approximation formula of standard deviation of radial wind velocity was calculated. The approximation formula is shown to be within 15% of exact formula. The approximation formula allows us to decrease a calculation time.