Two-phase atmospheric flows in boundary laers on complex area

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In present work three-dimension model of transport of solid particles and aerosols near solid surface is proposed. This model base on two main physical ideas:

Ţ Description two-phases atmospheric flows on base Nigmatulin's equations (equations perfect gas with renormalized equation of state) Ţ Using Godunov's method, which has a scheme viscosity, for numerical solution of models equations.

The main advantage of our model consists of possibility of modeling of two-phases atmospheric flows in a range where vertical scale of inhomogeneities is much higher then horizontal scale. As usual, in this case traditional modeling methods fail.

In our work we showed, that presence of two mechanisms of scheme viscosity in created algorithm, namely, presence innhomogeneities of surface and gradients of concentration of solid admixture, allows to reproduce the dynamics of transport of admixtures in boundary layers with obstacles.