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## Statistical Characteristics of Turbulence in an Urban Canyon

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Parametrizations which traditionally are used in atmospheric modeling, energy-balance and biogeochemical calculations are based on the Monin-Obukhov similarity theory (MOST). MOST assumes a uniform horizontal distribution of aerodynamic and temperature roughness of an underlying surface. These conditions are violated in heterogeneous landscapes, what requires special experiments to establish the limits of MOST applicability. Investigation of the atmospheric boundary layer (ABL) turbulent structure within urban area is an important task. The aim of our work is to establish links between statistical characteristics of turbulence in the urban landscape under different regimes of ABL.

This paper presents some results of an experiment in which all-season monitoring of the temporal variability and spatial structure of atmospheric turbulence is carried out under conditions close to those of an urban canyon. Measurements are made on the basis of the Geophysical observatory of the Institute of monitoring of climatic and ecological systems SB RAS, Russia, Tomsk. The measurement system includes five sonic anemometers located at different points and heights. This approach makes it possible to estimate the terms of the balance equations of statistical moments and, accordingly, the value of the contribution of horizontal and vertical transport to the formation of turbulent fluxes.

The possibility of parametrizing the third moment (flux of heat flux) by the type of convective advection for the conditions of an urban canyon has been confirmed. It is experimentally shown that in the inner region of the layer at a height of 10 m this third moment is expressed as the product of the potential temperature flux and the convective advection rate. Near the underlying surface, the third moment is expressed according to the approximation of turbulent diffusion.

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