

Inhomogeneity of the land surface and parameterization of the turbulent fluxes in natural conditions (Session 4: Problems for Flux Measurements studies)

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Abstract

The effect of the ignored input of turbulent fluxes within the classic theories of turbulence under stationarity and **h**orizontal **h**omogeneity (SHH) conditions near the complex terrain surfaces is parametrized by the additional roughness here. Using as examples the experimental results of FIFE, KUREX, TARTEX and SADE, coincidence was detected between the underestimation of the turbulent fluxes and the terrain inhomogeneity. To systematize the correction for this effect a parameterization is suggested which empirically makes use of the involved fetch lengths in the environment of a site. In addition, the horizontal distinction of atmospheric stability above different surfaces is included also. Assuming the parameterization to be valid for the complex terrain surfaces a simple relationships are obtained for surface turbulent fluxes, bulk transfer coefficients, roughness length and etc.