

Abstract: The Charles University Large-eddy Microscale Model (CLMM) and its application are presented. It is a numerical model for simulation of turbulent flow and dispersion in the planetary boundary layer. CLMM solves the incompressible Navier-Stokes equations in the Boussinesq approximation and describes turbulence using the large eddy simulation. Three applications of the model are presented. In the first case, the model is applied to the stable boundary layer over a flat terrain. The second case presents the simulations of stably stratified flows over obstacles. The last case deals with the dispersion of a hazardous material within an urban canopy. It was performed in the frame of the COST Action ES1006 and uses the Michelstadt flow and dispersion dataset for model validation.