A NUMERICAL PREDICTION OF LOCAL ATMOSPHERIC PROCESSES

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Results of application of mesoscale meteorological models MM5 (Mesoscale Model 5, http://www.mmm.ucar.edu/mm5/mm5-home.html) and WRF (Weather Research and Forecast, http://wrf-model.org) to analyze a development of local atmospheric processes over the Western Siberia terrain are presented. These models take into account a surface curvature and underlying surface properties, allow to select various parameterization schemes of subgrid physical processes (short-wave and long-wave radiation, moisture microphysics, convective parameterization in clouds, planetary boundary layer, development of soil temperature and moisture) in dependence of spatial scale of investigated problem. Also these models allow to make predictions in the nested domains with one-way or two-way interaction. The considered mesoscale models were realized with usage of multiprocessor computing system with distributed memory. For various weather conditions a comparison of predictions of wind speed and wind direction and of near surface temperature and humidity with results of meteorological observations, as soon as formation of cloudiness and precipitation over the research domain was performed.