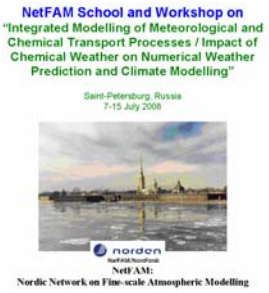
POSTER PRESENTATION



P-08. Andres Luhamaa: New micro-physics module for non-hydrostatic HIRLAM

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Non-hydrostatic extension for the weather prediction model HIRLAM has been available for several years now. Non-hydrostatic dynamics is considered to be an important component of mesoscale, 3-1km horizontal resolution modeling. With the help of this extension, the HIRLAM model can be used more efficiently for mesoscale simulations. On the other hand, the current HIRLAM development strategy suggests using and improving AROME for mesoscale modeling instead, and thus, other parts of HIRLAM are not optimal for mesoscale usage, especially representation of clouds and microphysics.

This work is an effort to introduce more detailed microphysics module to the HIRLAM environment. Main goal is better representation of moist, deep convective processes, which require explicit representation of frozen cloud particles, hydrometeors and rain in three-dimensional grid. Therefore, new microphysics scheme, which uses five variables for liquid and ice phases, is used.

Besides moist convection, improved microphysics could be feasible also for aerosol-cloud feedback and radiation studies at synoptic scale modeling.

Current status of the model development and the first modeling results with the new microphysics in combination with the hydrostatic HIRLAM are represented.