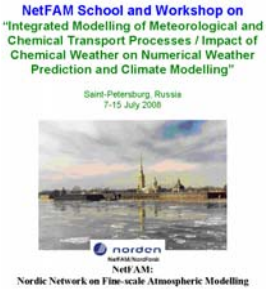

ORAL PRESENTATION

O-01. Sander Tijm: HIRLAM strategy and connection with ACT

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The three main goals of the HIRLAM-A project are the:
(i) development of an accurate mesoscale model, (ii) development of a reliable short term ensemble prediction system, (iii) extension of the HIRLAM model to an earth system model.

At this moment the HIRLAM model is primarily a numerical weather prediction model with parameterizations that are aimed at the short range weather forecast only. This means that the model is not used very much in other types of research and applications, such as climate research, hydrological research and air-quality modelling (except where the HIRLAM model output is used to drive ACT models). To enable this type of use one of the three major scientific goals of the HIRLAM-A project is to evolve towards an earth system model.

The components of such a model are the atmosphere, the land surface and biosphere (vegetation), the ocean surface and atmospheric chemistry. The atmospheric part can be taken from the current HIRLAM model, as can the land surface and biosphere. However, en extension of the last two with components such as a model that mimics the impact of towns, buildings and other anthropogenic influences is necessary. The second missing component from the current HIRLAM model is a coupled ocean model, which can give the right feedback from the sea surface to the atmosphere.

To enable a better use of the meteorology (e.g. every time step) in the Air Chemistry Transport modelling, and the interaction between the chemistry and meteorology, e.g. cloud-aerosol interaction, we are aiming at a HIRLAM version with online chemistry coupling. We want the system to be flexible enough to enable the plugging in of any chemistry component that one would like to use.

Many chemistry models and modules are currently used in the different HIRLAM countries, and even more outside these countries. This variety of chemistry models is caused by the different needs and possibilities in the countries that use them. We aim for a system that is flexible and easy enough that one can plug whatever chemistry module in HIRLAM that is chosen in a specific country. The common HIRLAM chemistry platform may also act as a catalyst for more cooperation within the HIRLAM countries and within Europe in ACT.

In the presentation the general HIRLAM plans, the more specific plans with chemistry that have been made so far and the path towards the HIRLAM chemistry branch will be presented.