

# Baltic HIRLAM Workshop on atmospheric fine scale and boundary layer modelling St.Petersburg, 16-20.11.2003

*Draft, 14.11.2003*

## Programme of the workshop

### Saturday 15.11.2003

Arrival and registration

9.00 - 9.45 Breakfast

13.30 -14.30 Lunch

18.30 -19.30 Dinner

### Sunday 16.11.2003

Arrival and registration

Cultural programme

Baltic HIRLAM project meeting

9.00 - 9.30 Breakfast

9.45 -14.30 Bus excursion across St. Petersburg

Sunday morning we are proposing you to take part in bus excursion across St. Petersburg with the experienced guide. It will take about 3 hours in the city. Such places as Isaac Cathedral and Church on the blood are going to be visited for the Excursion as well as other places of interest. You will see all world-known sights in St. Petersburg. The cost of excursion (20 euros) should be covered by those who wish to go sight-seeing. This sum should be taken during the registration at the reception. Please let us know beforehand about your wish to take part in bus excursion.

15.00 - 15.30 Lunch

### 16.30 - 18.00 Baltic HIRLAM project meeting

The aim of the meeting is to discuss the status and further plans of the Baltic HIRLAM project. Practical questions of the workshop could also be touched.

Proposal for the agenda:

1. Opening

2. Status

- fulfilling of the plan till today: reports of participants
- budgetary situation
- planned visits

- about reporting to Nordic Council
3. Review of the plans of the International Hirlam project in fine scale modelling
  4. Future plans of the Baltic project
    - Target: Fine scale atmospheric modelling around the Baltic Sea  
Marine winds for safety applications, extreme weather events related with convection, local air quality applications etc  
Creation of working nonhydrostatic model system and development of the physical parametrizations for the finest scale  
To discuss: relationship with the plans of the international HIRLAM project; modelling environments involved
    - Participants:
    - Funding  
What do we need funding for: short and extended visits, one workshop per year, postgraduate/postdoc studies ?  
Funding possibilities: Nordplus Neighbour (January?), Norfa (2nd of May), EU traffic programme, ...
  5. Other possible matters related to the workshop etc.

18.30 - 19.30 Dinner

## **Monday, 17.11.2003**

### **Opening of the workshop**

10.00 Lev Karlin - rector of RSHU

### **General session**

Chairman: Carl Fortelius

10.15 - 11.00

Current activities and the planned developments in the HIRLAM-6 Project - Per Undén (HIRLAM/SMHI)

11.10 - 12.00

The finest scale HIRLAM - the Tartu model - Rein Rõõm (UT)

12.10 - 12.30 Break

12.30 - 13.20

Current problems of stable boundary layer modelling - Sergei Zilitinkevich (UU)

13.30 - 14.30 Lunch

14.30 - 14.55

Experimental very high resolution forecasting at EMHI - Aarne Männik and Ivar Ansper (EMHI)

15.00 - 15.25

On the parametrization of precipitation in warm clouds - Priit Tisler (UH)

## **Working sessions**

(parallel)

### **1. Boundary layer modelling and parametrizations**

Chairman: Stefan Gollvik

15.30 -15.55

The effects of small-scale inhomogeneity in the surface layer - Kirill Yegorov (RSHU)

16.00 - 16.30 Break

16.30 - 16.55

Sodankylä mast data for model comparison studies - Markku Kangas (FMI)

17.00 - 17.25

One-dimensional model studies in stable boundary layer - Eric Bazile (Meteo France)

17.30 - 18.15

Discussion about model intercomparison studies for stable boundary layer

### **2. Fine scale (nonhydrostatic model) dynamics and physics**

Chairman: Per Undén

15.30 - 15.55

Convection in hydrostatic and nonhydrostatic HIRLAM - Sami Niemelä (UH)

16.00 - 16.20 Break

16.25 - 16.50

Performance of the Met Office Unified Model during a recent weather event in the vicinity of St. Petersburg - Luke Jones (UKMO)

16.55 - 17.10

Modelling a heavy rain case in North-East Estonia in August 2003. Preliminary results.  
- Andres Luhamaa (ÜT)

17.15 - 17.30

Plans and first experiences of the use of fine-scale MM5 model over Baltic Sea and coastal areas - Jari Mustonen and Erik Gregow (FMI)

17.30 - 18.15

Discussion about the finest scale modelling development

### **18.30 - Workshop opening dinner**

**Tuesday, 18.11.2003**

**General session**

Chairman: Rein Rõõm

10.00 - 10.50

Problems of surface layer modelling at Northern latitudes - Stefan Gollvik (SMHI)

11.00 - 11.50

Bridges between meteorological and dispersion models at different scales - Yevgeny Genikhovich (MGO) and Mihail Sofiev (FMI)

12.00 - 12.30 Break

12.30 - 12.55

Numerical model for fine structure planetary boundary layer prediction as applied to atmospheric pollution - Alexander Gavrilov, George Voronov, Mary Baranova, Rami Altaluli, Aaed Mohanna (RSHU)

**Working sessions**

(parallel)

**3. Surface layer modelling and parametrizations**

Chairman: Patrick Samuelsson

13.00 - 13.25

Modeling of neutrally stratified airflow over inhomogeneous vegetation - Andrey Sogachev (UH)

13.30 - 14.30 Lunch

14.30 - 14.55

Some methods to consider soil freezing effect in land surface block of atmospheric models - Katherina Kourzeneva and Dina Kozlova (RSHU)

15.00 - 15.25

Orography-related problems in HIRLAM - Laura Rontu (FMI)

15.30 - 15.55

A study of radiation parametrizations for sloping surfaces - Anastasya Senkova (RSHU)

16.00 - 16.30 Break

16.30 - 16.55

Parameterization of Lakes in NWP: Description of a lake model and single-column tests - Dmitrii Mironov (DWD)

17.00 - 18.00

Discussion about surface parametrizations

#### **4. Air quality applications**

Chairman: Yevgeny Genihovich

13.00 - 13.25

Effects of boundary-layer thermal stratification and underlying surface roughness to the deposition of coarse solid particles - Marko Kaasik (UT)

13.30 - 14.30 Lunch

14.30 - 14.55

Some lessons from the SILAM model application to the European Tracer Experiment ETEX - Mihail Sofiev and Pilvi Siljamo (FMI)

15.00 - 15.25

Comparison of air quality forecasts based on different of meteorological data as input - Marke Hongisto (FMI)

15.30 - 15.55

Modelling dispersion of birch pollen - Pilvi Siljamo (FMI)

16.00 - 16.30 Break

16.30 - 17.30

Discussion and conclusions on air quality applications

### **Wednesday, 19.11.2003**

#### **General session**

Chairman: Mihail Sofiev

10.00 - 10.50

Numerical modelling in education: The MISU experience - Patrick Samuelsson and Nils Gustafsson (SMHI/MISU)

11.00 - 11.30 Break

11.30 - 12.00

MGO Regional Climate Model: present-day climate simulations - Igor Shkolnik, Valentin Meleshko, Valentina Gavrulina, Veronika Govorkova (MGO)

12.05 - 12.35

HIRLAM at Mars - Janne Kauhanen (UH)

## Working sessions

(parallel)

### 5. Numerical modelling in education - exchange of experience

Chairman: Katherina Kourzeneva

12.40 - 13.00

Atmospheric Modelling Training in RSHU - Katherina Kourzeneva, Olga Aniskina, Raisa Repinskaya (RSHU)

13.05 - 13.25

Point of view of the international HIRLAM project on training in numerical modelling - Per Undén (SMHI/HIRLAM)

13.30 - 14.30 Lunch

14.30 - 14.50

Curriculum of numerical meteorology at Tartu University - Rein Rõõm (UT)

14.55 - 15.15

Numerical methods and modelling at the division of Atmospheric Sciences at Helsinki University - Sami Niemelä (UH)

15.15 - 16.10

Discussion on education

16.10 - 16.30 Break

### 6. Model systems, cooperation, other

Chairman: Aarne Männik

12.40 - 13.10

The planetary boundary layer parameterization scheme for the global and regional circulation and climate modeling with emphasis to the high latitude features including the highly stable stratification and baroclinity - Vladimir Romanov (AARI)

13.15 - 13.30

Assessing the role of observational errors in data assimilation: experiments with a global data assimilation system - Mihail Tsyroulnikov, Mihail Tolstykh, Radomir Zaripov and Aleksandr Bagrov (RHRC)

13.35 - 14.30 Lunch

14.30 - 15.00

Variable resolution model of Russian Hydrometeorological Research Centre - Mihail Tolstykh (RHRC)

15.05 - 15.35

Regular Cycle Run of HIRLAM (RCR) - Kalle Eerola and Carl Fortelius (FMI)

15.40 - 16.10

Experiences of FMI pre-RCR runs - Simo Järvenoja (FMI)

16.15 - 16.30 Break

### **16.30 - 17.30 Reports of the parallel sessions**

Chairman: Laura Rontu

1. Boundary layer modelling and parametrizations
2. Fine scale (nonhydrostatic model) dynamics and physics
3. Surface layer modelling and parametrizations
4. Air quality applications
5. Numerical modelling in education
6. Model systems, cooperation, other

### **17.30 - 17.45 General discussion and closure of the workshop**

## **Thursday 20.11.2003**

10.00 Visit to RSHU in St. Petersburg

Planned programme of the visit to the Russian State Hydrometeorological University includes discussions with the staff and students, short presentations of some workshop participants and acquaintance with the posters made by RSHU students.

14.30 Lunch at RSHU canteen

Departures of the workshop participants

### **Abbreviations of the institutes**

AARI - Arctic and Antarctic Research Institute, St.Petersburg

DWD - Deutscher Wetterdienst, Offenbach am Main

EMHI - Estonian meteorological and hydrological institute, Tallin

FMI - Finnish meteorological institute, Helsinki

LHMS - Lithuanian hydrometeorological service, Vilnius

MGO - Main geophysical observatory, St.Petersburg

MISU - University of Stockholm

RHRC - Russian Hydrometeorological Research Centre, Moscow

RSHU - Russian state hydrometeorological institute, St.Petersburg

SMHI - Swedish meteorological and hydrological institute, Norrköping

UH - University of Helsinki

UKMO - UK Met Office, Bracknell/Exeter UT - University of Tartu

UU - University of Uppsala