

Mottatt NordForsk:



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Økonomisk Dato: _____ Sign: _____

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REPORT NETWORK

Ref.nr.:

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Nordic Network on Fine-scale Atmospheric Modelling (NetFAM). Progress report 2008 - 2009

Summary of the activities 2008-2009

1.1 Workshops arranged by NetFAM et al.

A miniworkshop on boundary layer parametrizations was arranged 17th of June 2008 in Helsinki at FMI, to discuss the latest developments in the topic and future applications in HIRLAM/HARMONIE. Seven presentations were discussed among the twelve participants. No extra expenses for NetFAM.

A summer school and workshop on "Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling", was arranged 7-15 July 2008 in Zelenogorsk, near St.Petersburg, Russia. The co-organisers were NetFAM with TEMPUS TACIS Joint European Project, COMBAT-METEO "Development of a competency-based two-level curricula in meteorology", COST Action ES0602 "Towards a European Network on Chemical Weather Forecasting and Information Systems" and COST Action ES0603 (EUPOL) "Assessment of production, release, distribution and health impact of allergenic pollen in Europe." 63 participants from 15 countries attended the school and/or workshop, 17 of them fully or partly funded by NetFAM. Total expenses for NetFAM were ca. 11000 euros.

A workshop on "Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling" was held 18-20 September 2008, also in Zelenogorsk, Russia. 40 participants from 15 countries attended the school and workshop, 14 of them fully or partly funded by NetFAM, with total expenses of ca. 8000 euros (without expenses paid in 2009 for the workshop publication to appear in 2010).

A joint NetFAM COST-ES0207 Workshop on "Usage of local, micrometeorological and remote-sensing observations for data-assimilation and validation of mesoscale atmospheric models" took place in Oslo, 16-20 March 2009. Workshop presentations are available at the NetFAM web site, separately for the NetFAM surface data assimilation working sessions and for the COST-NetFAM joint sessions. In the NetFAM sessions, 26 participants from 9 countries attended, 11 of these fully or partly funded by NetFAM.

A workshop on "Moist processes in future high resolution NWP models" was arranged June 15-17, 2009 in Norrköping, Sweden. 27 participants from 13 countries attended the workshop. 3 invited speakers and 13 participants were fully or partly funded by NetFAM. Workshop presentations and list of participants can be found at the NetFAM web site. NetFAM and DMI arranged an Enviro-HIRLAM course "Environment - HIgh Resolution Limited Area Model (Enviro-HIRLAM)" in Copenhagen, Denmark, 26-31 January 2009. The local organizers were Alexander Baklanov and Alexander Mahura. Two practical research training weeks followed this course in April and October 2009. Altogether, NetFAM covered partly or totally the expenses of 10 participants from 4 countries attending one or two of these training events.

1.2 Workshops supported by NetFAM

The participation of NetFAM members in the following workshops was supported:

- AMS Symposium on Boundary Layers and Turbulence, Stockholm 8-12 June 2008(one participant).
- SURFEX training course, Toulouse, 14-16.10.2009 - four participants from two countries
- Meeting to prepare a new network application for MUSCATEN, Tallinn 12-13.3.2009 - six participants from five countries

2. Mobility within the network 2008-2009

During 2008, 20 persons participated in 26 exchange visits of a total length of approximately 28 weeks. During 2009, 15 persons participated in 26 exchange visits of a total length of approximately 15 weeks. The details of these visits are shown at the end of this report.

3. Supervision of research students 2008-2009

During 2008-2009, NetFAM participants defended Ph.D and MSc. theses (for some teams, the list is not complete):

Hamza Kabelwa (RSHU): "Study of the impact of physiographic parameters on the quality of NWP forecasts for East Africa as an example" (monography, in Russian). RSHU, 13.11.2008.

Roberta Pirazzini (FMI) defended her PhD thesis 12.12.2008, on "Factors controlling the surface energy budget over snow and ice", U. Helsinki, opponent Dr. John King, British Antarctic Survey, Cambridge. Supervisor Hannu Savijärvi, U. Helsinki. Finnish Meteorological Institute Contributions 75, 90p

Kirsti Salonen (FMI) defended her PhD thesis 30.1.2009 on "Towards the use of radar winds in numerical weather prediction", U. Helsinki, opponent prof. Erland Källén, ECMWF/U. Stockholm, supervisor Dos. Heikki Järvinen, U. Helsinki. Finnish Meteorological Institute, Contributions, 76, 90 p.

Hans Orru (University of Tartu and University of Umeå) defended his Ph.D. thesis 19.12.2009 in University of Umeå. on "Exposure to Particulate Matter and the Related Health Impacts in Major Estonian Towns". Supervisors: Beril Forsberg (University of Umeå), Eda Merisalu (University of Tartu), Marko Kaasik (University of Tartu)

Gantuya Ganbat (RSHU) - MSc Thesis in Atmos. Sciences 2008: "The impact of parameters of lakes on the underlying surface temperature"

Yulia Gavrilova (RSHU) - MSc Thesis in Atmos. Sciences 2009: "Modeling Studies of Influence of Metropolitan Areas on Aspects of Regional Weather" (enrolled PhD programme from Dec 2009);

Yakov Gontsov (RSHU) - MSc Thesis in Atmos. Sciences 2009: "Study of Potential of Influence of Gas Composition and Aerosols on Meteorological Situation in the Metropolitan Areas" (enrolled PhD programme from Dec 2009);

Ekaterina Scherbak (RSHU) - MSc Thesis in Atmos. Sciences 2009: "Accessibility and quality of space-born measurements of water surface temperature for lakes" (enrolled PhD programme from Dec 2009);

Kristina Mockeviciute (LHMS) - Study of erroneous initial conditions of the HIRLAM model (MSc thesis, 2008, University of Vilnius).

Adomas Mazeikis (LHMS): Application of SILAM model for particulate matter research in Lithuania (MSc thesis, 2008, University of Vilnius, enrolled PhD programme in 2009).

Lisa Bengtsson, PhD student SMHI, acted as scientific coordinator for the NetFAM Workshop on "Moist processes in future high resolution NWP models".

4. Main scientific achievements

Research was continued in the main areas of scientific interest:

- The description, data-assimilation and parametrization of the surface and surface-related processes, in particular, modelling of the interaction between lakes and atmosphere, assimilation of snow observations.
- Integration between mesoscale meteorological and atmospheric chemical transport models.
- The usage of micrometeorological and remote-sensing observations for data assimilation and validation of mesoscale atmospheric models.
- Development of a new mesoscale atmospheric modelling framework HARMONIE (*HIRLAM* and *ALADIN Research for Mesoscale Operational NWP In Europe*).

13 scientific articles based on presentations in the NetFAM workshop on "Parametrization of Lakes in Numerical Weather Prediction and Climate Modelling", 18-20 September 2008, St. Petersburg (Zelenogorsk), Russia were accepted for publication in a special issue of *Boreal Environment Research*, (2), 2010. A book on "Integrated Systems Of Meso-Meteorological And Chemical Transport Models", based on COST728-NetFAM workshop in Copenhagen, 21-23 May

2007, has been prepared for publication (includes 22 Chapters/ Articles) by Springer, 2010. The student textbook based on presented lectures and practical exercises during the school and workshop on “*Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling*” (7-15 July 2008) has been outlined and drafted, its update (based on 2nd school within frameworks of MUSCATEN), finalization and publication is expected within the MUSCATEN activities. NetFAM activities were presented in a short popular overview in the NordForsk publication "Nordic research gems", 2009, among 19 other Nordic networks. NetFAM members were authors or co-authors of ca. 30-40 peer-reviewed journal papers during 2008-2009 (list of publications under preparation).

5. Communication within NetFAM

The central platform in the communication remained the NetFAM web site <http://netfam.fmi.fi> . The site was regularly updated by adding presentations of workshops arranged and supported by NetFAM as well as keeping the "news" section up-to-date. The NetFAM site is public and open for users within and outside of the network. It will remain available also at least during 2010, one year after closure of the network activities; and then all content will be transferred to MUSCATEN (the successor of the NetFAM network) web-site.

A list of NetFAM exchange visits and supported participants in workshops during 2008

Exchange visits and working weeks

Katerina Kourzeneva RSHU FMI 9-18.1.2008 Lake modelling
Gantuya Ganbat RSHU FMI 9-18.1.2008 Lake modelling
Andrea Storto met.no SMHI 20-23.1.2008 HARMONIE working week data assimilation
Roger Randriamampianina met.no SMHI 20-23.1.2008 HARMONIE working week data assimilation
Katerina Kourzeneva RSHU FMI 24-27.2.2008 Lake modelling
Patrick Samuelsson SMHI FMI 25-27.2.2008 Lake modelling
Laura Rontu FMI RSHU 19-23.2.2008 Radiation and turbulence parametrizations
Jevgeni Atlaskin RSHU FMI 3.-20.3.2008 Stable boundary layer parametrizations
Iakov Gontsov RSHU DMI 6-13.4.2008 Enviro-HIRLAM
Yulia Gavrilova RSHU DMI 6-13.4.2008 Enviro-HIRLAM
Polina Zimenko RSHU DMI 6-13.4.2008 Enviro-HIRLAM
Irina Petrova RSHU DMI 6-13.4.2008 Enviro-HIRLAM
Sergei Smyshljajev RSHU DMI 6-10.4.2008 Enviro-HIRLAM
Gantuya Ganbat RSHU FMI 7-9.3.,19-20.3.2008 Lake modelling
Martynas Kazlauskas LHMS FMI 4-8.5.2008 Fine-scale HIRLAM in LHMS
Jevgeni Atlaskin RSHU MISU,FMI 8-18.6.2008 Boundary layer, AMS conference
Kirsti Salonen FMI met.no 4.5.-9.5.2007 4DVAR data assimilation working week
Reima Eresmaa FMI met.no 4.5.-9.5.2008 4DVAR data assimilation working week
Hamza Kabelwa RSHU FMI 2.-13.6.2008 HIRLAM - ECOCLIMAP
Laura Rontu FMI RSHU 21.-25.9.2008 HIRLAM - HARMONIE radiation, lakes
Sami Niemelä FMI DMI 29.9.-3.10.2008 HARMONIE system working week
Niko Sokka FMI DMI 29.9.-3.10.2008 HARMONIE system working week
Sami Niemelä FMI France 27.-31.10.2008 HARMONIE system
Karl-Ivar Ivarsson SMHI FMI 22.-25.10.2008 HIRLAM surface parametrizations
Stefan Gollvik SMHI FMI 22.-25.10.2008 HIRLAM surface parametrizations
Laura Rontu FMI RSHU 10.-19.11.2008 HIRLAM - HARMONIE radiation, lakes, surface

Summer school and workshops

"Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling"
18-20 September 2008, Zelenogorsk. Supported lecturers and participants: Dmitri Mironov, Kalle Eerola, Laura Rontu, Patrick Le Moigne, Nils Gustafsson, Tatiana Lvova, Arkady Terzhevik, Rui Salgado, Patrick Samuelsson, Roman Begenar, Alexander Gusiy, Katerina Kourzeneva, Gianpaolo Balsamo, Miklos Vörös.

"Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling" 7-15 July 2008, Zelenogorsk. Supported lecturers and participants: Alexandr Mahura, Niels Nielsen, Bent Sass, Bennert Machenhauer, Andres Luhamaa, Joakim Nielsen, Allan Christensen, Brian Sorensen, Mirjam Paales, Adomas Mazeikis, Marko Zirk, Rein Rõõm, Suleiman Mostamandy, Gantuya Ganbat, Olga Patina, Ayoe Buus, Andy Delcloo.

A list of NetFAM exchange visits and supported participants in workshops during 2009

Eduard Podgaisky	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Yakov Gontsov	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Irina Petrova	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Yulia Gavrilova	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Anna Filippenko	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Adomas Mazeikis	U.Vilnius	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Andres Luhamaa	U.Tartu	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Kaarel Kimmel	U.Tartu	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Julia Palamarchuk	RSHU	DMI	25.1.-1.2.2009	Enviro-HIRLAM course
Suleiman Mostamandy	RSHU	FMI	5.1-18.1.2009	HIRLAM/HARMONIE snow
Katerina Kurzeneva	RSHU	FMI	14.1-18.1.2009	HIRLAM lake and snow
Stefan Gollvik	SMHI	FMI	25.-29.1.2009	HIRLAM surface
Karl-Ivar Ivarsson	SMHI	FMI	25.-29.1.2009	HIRLAM surface
Kaisa Kesanurm	U.Tartu	FMI	23.-27.2.2009	air quality modelling
Mirjam Paales	U.Tartu	FMI	12.-16.4.2009	air quality modelling
Laura Rontu	FMI	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Aarne Männik	EMHI	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Adomas Mazeikis	LHMS	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Priit Tisler	FMI	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Karl-Ivar Ivarsson	SMHI	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Alexander Mahura	DMI	EMHI	12-13.3.2009	new network (MUSCATEN) preparation
Kalle Eerola	FMI	met.no	16-20.3.2009	OBS09 workshop
Laura Rontu	FMI	met.no	16-20.3.2009	OBS09 workshop
Priit Tisler	FMI	met.no	16-20.3.2009	OBS09 workshop
Magnus Lindskog	SMHI	met.no	16-20.3.2009	OBS09 workshop
Jean-Francois Mahfouf	MeteoFr.	met.no	16-20.3.2009	OBS09 workshop
Francoise Taillefer	MeteoFr.	met.no	16-20.3.2009	OBS09 workshop
Ulf Andrae	SMHI	met.no	16-20.3.2009	OBS09 workshop
Stefan Gollvik	SMHI	met.no	16-20.3.2009	OBS09 workshop
Mats Dahlbom	DMI	met.no	16-18.3.2009	OBS09 workshop
Suleiman Mostamandy	RSHU	met.no	16-20.3.2009	OBS09 workshop
Katerina Kurzeneva	RSHU	met.no	16-20.3.2009	OBS09 workshop
Suleiman Mostamandy	RSHU	FMI	15.-30.4.2009	Sodankylä SNORTEX
Mirjam Paales	U.Tartu	FMI	24.-29.5.2009	air quality modelling
Patrick Le Moigne	MeteoFr.	FMI	20.-24.4.2009	SURFEX
Irina Petrova	RSHU	DMI	27.4.-1.5.	Enviro-HIRLAM training
Yakov Gontsov	RSHU	DMI	27.4.-1.5.	Enviro-HIRLAM training
Yulia Gavrilova	RSHU	DMI	27.4.-1.5.	Enviro-HIRLAM training
Alexander Smirnov	AARI	DMI	27.4.-1.5.	Enviro-HIRLAM training
Stefan Gollvik	SMHI	FMI	28.5.-29.5	HIRLAM
Ivarsson Karl-Ivar	SMHI	FMI	28.5.-29.5	HIRLAM
Laura Rontu	FMI	RSHU	7.6.-12.6.	Hirlam-Harmonie Work
Eric Bazile	MeteoFr.	SMHI	15.-17.6.2009	CLOUD09
Francois Bouyssel	MeteoFr.	SMHI	15.-17.6.2009	CLOUD09
Jean-Marcel Piriou	MeteoFr.	SMHI	15.-17.6.2009	CLOUD09

Peter Bechtold(invited)	ECMWF SMHI	15.-17.6.2009	CLOUD09
Sylvie Malardel(invited)	ECMWF SMHI	15.-17.6.2009	CLOUD09
J.F.Geleyn	MeteoFr.SMHI	15.-17.6.2009	CLOUD09
Annika Ekman	MISU SMHI	15.-17.6.2009	CLOUD09
Bent Sass Hansen	DMI SMHI	15.-17.6.2010	CLOUD09
Mats Dahlbom	DMI SMHI	15.-17.6.2011	CLOUD09
Andres Luhamaa	U.Tartu SMHI	15.-17.6.2010	CLOUD09
Sami Niemelä	FMI SMHI	14.-17.6.2010	CLOUD09
Kaarel Kimmel	U.Tartu DMI	19.-23.10.	Enviro-HIRLAM training
Julia Palamarchuk	RSHU DMI	17.-25.10.	Enviro-HIRLAM training
Adomas Mazeikis	Univ Vilnius DMI	18.-25.10.	Enviro-HIRLAM training
Laura Rontu	FMI MeteoFr.	11.-17.10.	SURFEX school
Stefan Gollvik	SMHI MeteoFr.	11.-17.10.	SURFEX school
Patrick Samuelsson	SMHI MeteoFr.	11.-17.10.	SURFEX school
Christer Jansson	SMHI MeteoFr.	11.-17.10.	SURFEX school
Suleiman Mostamandy	RSHU FMI	7.-15.12.	snow data assimilation
Kirsti Salonen	FMI SMHI	17-18.9.2009	data assimilation experiments
Marko Kaasik	U.Tartu FMI	6.-7.9.2009	MUSCATEN planning

NetFAM (supported) participants 2008-2009. Research students are marked with *italics*, coordinating group members underlined.

DK: Alexander Baklanov, *Ayoe Buus*, Allan Christensen, Mats Dahlbo, Bent Hansen Sass, *Ulrik Korsholm*, Bennert Machenhauer, Alexander Mahura, *Joakim Nielsen*, *Brian Sorensen*, Niels Woetman Nielsen

FI: Kalle Eerola, Reima Eresmaa, Carl Fortelius, Sylvain Joffre, Sami Niemelä, *Roberta Pirazzini*, Laura Rontu, *Kirsti Salonen*, Hannu Savijärvi, Mikhail Sofiev, Priit Tisler, Timo Vihma,

IS: (Haraldur Olafsson)

NO: *Elena Bojarova*, Mariken Homleid, Thor-Erik Nordeng, Roger Randriamampianina, *Andrea Storto*, Viel Ödegaard

SE: *Ulf Andrae*, *Lisa Bengtsson*, Annika Ekman, Stefan Gollvik, Nils Gustafsson, Karl-Ivar Ivarsson, *Christer Jansson*, Magnus Lindskog, Patrick Samuelsson

EE: Marko Kaasik, *Eva-Stina Kerner*, *Kaisa Kesnurm*, *Kaarel Kimmel*, *Andres Luhamaa*, Aarne Männik, *Hans Orru*, *Mirjam Paales*, *Marje Prank*, Rein Rööm, *Marko Zirk*

LV: (Ivars Javaitis), Olga Patina

LT: Martynas Kazlauskas, *Adomas Mazeikis*, *Kristiina Mockeviciute*

RU: Katerina Kourzeneva, *Jevgeni Atlaskin*, Dmitri Mironov, *Suleiman Mostamandy*, *Hamza Kabelwa*, *Tatyana Ermakova*, *Gantuya Ganbat*, *Irina Petrova*, *Yakov Gontsov*, *Yulia Gavrilova*, Eduard Podgaisky, *Ekaterina Scherbak*, Sergei Smyshlyaev, *Anna Filippenko*,

FR: Jean-Francois Geleyn, Jean-Marcel Piriou, Eric Bazile, Françoise Bouyessel, Jean-Francois Mahfouf, Françoise Taillefer, Patrick LeMoigne

NetFAM guests in workshops/summer schools: *Julia Palamarchuk*, Peter Bechtold, Sylvie Malardel, Roman Begenar, Alexander Gusiy, Gianpaolo Balsamo, Miklos Vörös, Tatiana Lvova, Arkady Terzhevik, Rui Salgado, Alexander Smirnov

Statistics of participants														
Actual numbers of participants	DK	FI	IS	NO	SE	EE	LV	LT	RU	EU: FR	Other outside the EU*	Total	Men	Women
research students	5	2	-	2	3	8	-	3	10	-		33	18	15
other participants	6	10	-	4	6	3	1	-	4	7		41	35	6
national teams	1	1	1	1	1	1	1	1	1	1		10		
Financial report														

In case of a surplus (more than NOK 2000), the surplus must be returned to Nordic Research Board, within 3 months after the completion of the activity.

7077.05.25517 DNB (Domestic payments)
Bank account: NO80 7077 0525 DNB (International payments) SWIFT:
517 DNBANOKKXXX

If the project has received other grants, the surplus that proportionate the grant received from Nordic Research Board must be returned. Please do not send vouchers (receipts) to Nordic Research Board.

	Year 4 Budget (NOK)	Result (NOK)	Year 5 Budget (NOK)	Result (NOK)	Year 3 Budget (NOK)	Result (NOK)
EXPENSES						
a) refundable from Nordic Research Board						
Honoraria	0					
Administration	20000		20000			
Travel expenses	135000	65316	135000	139536,34		
Living exp.(room/board)	135000	223665	135000	171990,76		
Other	10000		10000	18571		
b) inte stödberättigade från Nordic Research Board						
Overhead						
Other	20000		20000			
TOTAL EXPENSES	320000	288981	320000	330098		
INCOME						
Grant from NordForsk	300000	300000	300000	300000		
Surplus from previous year (for extension only)	2163	2163		30098		
Other income						
Own resources	20000		20000			
TOTAL INCOME	322163	302163	320000	330098,66		
BALANCE	2163	40336		0		
		Surplus may be transferred		Surplus may be transferred (not year 5)		Surplus may be transferred
CONFIRMATION FROM AUDIT OFFICE			Place:Helsinki	Date: 24.03.2010		
For an institution under the auspices of the National Audit Office: The financial manager or another responsible person .			Auditor for an institution which is not under the auspices of the National Audit Office			
Name: Ms. Leena Tuomainen			Name:			
Title: Accounting Manager, FMI			Title:			
CONFIRMATION: The grant holder confirms by his/her signature that all information in this report is correct.						
Helsinki, 24.03.2010			Hannu Savijärvi, NetFAM Coordinator, University of Helsinki			
Place, date			The grant holders signature			