Fifth International SRNWP-Workshop on Non-Hydrostatic Modelling

Bad Orb, 27 - 29 October 2003

Deutscher Wetterdienst

Monday, 27/10/2003

09:00 - 09:10 **W. Storck** **Bad Orb, Germany**
Address of Mayor of Bad Orb

09:10 - 09:20 **U. Gärtner** **DWD, Offenbach, Germany**
Opening by President of DWD

09:20 - 09:30 **J. Quiby** **SMA, Zürich, Switzerland**
Address of SRNWP-Representative

09:30 - 09:40 **J. Steppeler** **DWD, Offenbach, Germany**
Lead Centre for Non-Hydrostatic Modelling

Parameterisation I (soil models)

Chairperson: **Z. Janjic**

09:40 - 10:00 **Y. Kumagai, K. Saito, M. Yoshida, and H. Niino, NPD, Japan**
Improvement of the land surface processes of the non-hydrostatic model al JMA

10:00 - 10:20 **H. Schlünzen, Univ. Hamburg, Germany**
Impact of different sub-grid-scale land-use effects parameterisations on mesoscale model results

10:20 - 10:40 **G. Heinemann and M. Kerschgens, Univ. Bonn, Germany**
Treatment of small scale land surface heterogeneity for atmospheric modelling

10:40 - 11:00 **D. Mironov, DWD, Offenbach, Germany**
Parameterization of lakes in NWP models

11:00 - 11:30 **Coffee and Poster**

Poster **F. Ament and C. Simmer, Univ. Bonn, Germany**
Representing subgrid-scale land surface variability in the Lokal-Modell - concepts and first results

Poster **M. Müller, Univ. Basel, Switzerland**
Inclusion of satellite derived, daily NDVI values in the Meso ETA model

Parameterisation II (sensitivity studies)

Chairperson: **E. Richard**

11:30 - 11:50 **C. Jones, SMHI, Sweden**
Representing stratocumulus clouds in numerical models: Sensitivity to model physics & vertical resolution

11:50 - 12:10 **Th. Reinhardt and U. Wacker, AWI, Germany**
Sensitivities in LM Model results due to changes in the parameterization of cloud microphysics

12:10	-	12:30	**K. Sattler and H. Feddersen, DMI, Denmark**
			Studies on a multi-scheme ensemble during different rainfall events

12:30	**-**	**14:00**	**Lunch**

Parameterisation II (convection)

Chairperson: **W. Sha**

14:30	-	14:50	**S. Niemelä and C. Fortelius, Univ. Helsinki, Finnland**
			Representation of convection under hydrostatic and non-hydrostatic HIRLAM: A case study of the convective event

14:50	-	15:10	**C. Roadnight, Met. Office, Univ. Reading, U.K.**
			Representing convection in convective scale NWP models: An idealised study

15:10	-	15:30	**M. Satoh and T. Nasuno, Saitama Inst. Tech., Japan**
			Radiative-convective equilibrium calculations with cloud resolving models: a standard experiment and parameter study

15:30	-	15:50	**J. Helmert, IfT, Leipzig, Germany**
			Examination of the impact of mixing-length formulation on mesoscale simulation results. A Lokal-Modell case study

15:50	-	16:40	**Coffee and Poster**

Poster	**G. Craig and B. Plant, DLR, Oberpfaffenhofen, Germany**
	A stochastic cumulus parameterisation – Design and single column tests

Poster	**G. Xu, J. Xue, Ch. Dehui and L. Huang, Beijing, P.R. of China**
	Simulation Study of Precipitation in China

16:40	-	17:00	**O. Knoth and D. Hinneburg, IfT, Leipzig, Germany**
			A cloud resolving model with implicit time stepping: Orographic flow application

17:00	-	17:20	**M. Raschendorfer, DWD, Offenbach, Germany**
			A simplified approach to the influence of sub grid scale surface elements by the model equations

Poster	**M. Diamantakis and T. Davies, Met Office, Exeter, U.K.**
	Fractional timestepping of fast physics processes in the Met Office model

Poster	**M. Dubal, N. Wood, and A. Staniforth, Met Office, U.K.**
	Analysis of splitting methods for time-stepping physical parametrizations

Non-hydrostatic systems

Chairperson: **U. Wacker**

17:20	-	17:40	**Z. Janjic, NCEP/EMC, Camp Springs, USA**
			The NCEP WRF core and further development of ist physical package

17:40	-	18:00	**J. Klemp, NCAR, Boulder, USA**
			Evaluation of WRF for convection resolving NWP

19:00			**Dinner**
			Hotel Fernblick

Non-hydrostatic systems (continued)

Chairperson: **M. Tolstykh**

09:00 - 09:20   **S. Malardel, Meteo France, Toulouse, France**
The Arome mesoscale project

09:20 - 09:40   **H. Tomita, M. Satoh, K. Goto, and T. Nasuno, Yokohama, Japan**
Development of the global cloud resolving model on the Icosahedral grid

Poster   **A. Männik and R. Rööm, Univ. Tartu, Estonia**
Experimental very high resolution forecasting at EMHI

Poster   **X. Yang, J. Hu, J. Chen, Z. Jin, and L. Huang, Beijing, P.R. of China**
GRAPES dynamic model and the preliminary tests

Dynamics and numerics

Chairperson: **K. H. Schlünzen**

09:40 - 10:00   **M. Tolstykh, Russian Academy of Sciences, Moscow, Russia**
Variable resolution version of the global SL-AV model on a reduced longitude-latitude grid

10:00 - 10:20   **R. Brozkova, P. Benard, F. Bouttier, J.-F. Geleyn, and A. Trojakova, CHMI, Prague, Czech Republic**
Some side-results of the development effort for a stable and efficient semi-Lagrangian version of the ALADIN-NH code

10:20 - 10:40   **P. Benard, P. Smolikova, J. Masek, and J. Vivoda, Meteo France, Toulouse, France**
A potentially dangerous albeit unnecessary restriction in classical semi-implicit schemes design strategy

10:40 - 11:10   **Coffee**

11:10 - 11:30   **W. Skamarock, M. Baldwin, and W. Wang, NCAR, Boulder, USA**
Evaluating dissipation in NWP models using kinetic energy spectra

11:30 - 11:50   **W. Skamarock, J. Doyle, P. Clark, and N. Wood, NCAR, Boulder, USA**
A standard test set for nonhydrostatic dynamical cores of NWP models

11:50 - 12:10   **W. Sha, Tohoku Univ., Japan**
Dynamical core of a new atmospheric meso-scale numerical model developed in Cartesian coordinates

12:10 - 12:50   **J. Vivoda, P. Benard, P. Smolikova, J. Masek, and R. Brozkova, Meteo France, Toulouse, France**
Application of the iterative centered implicit scheme to non-hydrostatic dynamics of LAM ALADIN

12:30 -   14:30   Lunch

14:30   14:50   **J. Steppeler, DWD, Offenbach, Germany**
Semi-Implicit Methods

Poster   **J. Förstner, DWD, Offenbach, Germany**
First Results with RK-Time Integration and High-Order Spatial Discretization

Fine-scale analysis

Chairperson:		**D. Rezácová**

14:50	15:10	**Y. Honda, T. Kawabata, K. Tamiya, K. Aonashi, T. Tsuyuki, and K. Koizumi, Tokyo, Japan**

Development of a 4DVAR data assimilation system for the JMA nonhydrostatic model
- JnoVA -

15:10	15:30	**H.-S. Bauer, V. Wulfmeyer, and F. Vandenberghe, Univ. Hohenheim, Germany**

Comparison of different data assimilation techniques for a convective situation during the
IHOP_2002 campaign

Case studies and verification

Chairperson:		**P. Benard**

15:30	15:50	**D. Rezácová and Z. Sokol, ASCR, Prague, Czech Republic**

LM application to severe convective events - effect of microphysics parameterisation on QPF

15:50	**- 16:20**	**Coffee**

16:20	16:40	**T. Kato, Y. Sato, and X-BAIU-99 Observation group, Tsukuba, Japan**

Reason for the failure of the simulation of heavy rainfall during X-BAIU-01 - Importance of a
vertical profile of water vapor for numerical simulations -

16:40	- 17:000	**G. Zängl, Univ. München, Germany**

The sensitivity of simulated orographic precipitation to model details other than cloud

17:00	- 17:20	**J.- P. Schulz, D. Majewski, J. Förstner, V. Galabov, B. Fay, G. Doms, A. Gaßmann, and J. Steppeler, DWD, Offenbach, Germany**

Improving the simulated precipitaiton distribution in mountainous terrain in the Lokal-Modell:
A case study for 20 February 2002.

17:20	- 17:40	**K. Yasunaga, T. Kato, H. Sasaki, C. Muroi, K. Kurihara, Y. Sato, and M. Yoshizak, AESTO, Japan**

Verifications of high-resolution long-term prediction by Japan Meteorological Agency -
nonhydrostatic model (JMA-NHM) with the spectral boundary coupling (SBC) method

17:40	- 18:00	**E. Richard, F. Lascaux, and the MAP working group on numerical modelling, Toulouse, France**

Evaluation of simulated precipitation fields of some MAP events: sensitivity experiments and
model intercomparison

Wednesday, 29/10/2003

Case studies and verification (continued)

Chairperson:		**P. Benard**

09:00	- 09:20	**H. Volkert, Th. Fehr, E. Richard, and A. Tafferner, DLR, Oberpfaffenhofen, Germany**

Campaign data for parameterization tests: Examples from MAP 1999, VERTIKATOR 2002,
AWIATOR 2003-08-04

Poster		**M. Kaspar, ASCR, Prague, Czech Republic**

LM application to severe convective events - diagnosing of propagating gust fronts

Poster	**J. Potty, U. Wacker, C. Lüpkes, J. Hartmann, and M. Raschendorfer, AWI, Bremerhaven, Germany**
	A case study of a Polar cold air outbreak using the Lokal-Modell of DWD

Poster	**S. Serafin, A. Bertò, M. de Franceschi, R. Ferretti and D. Zardi, Univ. Trento, Italy**
	Application of a mesoscale model to the analysis of late forst events and comparison with observations

Poster	**P. Clark, Met Office, Univ. Reading, U.K.**
	Progress with Kilometre Scale NWP using the Unifield Model

Poster	**H.-J. Herzog, G. Vogel, U. Schubert, DWD, Potsdam, Germany**
	LLM - the high-resolving nonhydrostatic simulation model in the DWD

Poster	**H.-J. Herzog, G. Vogel, U. Schubert, DWD, Potsdam, Germany**
	Forcing strategy of the LLM

Poster	**H.-J. Herzog, G. Vogel, U. Schubert, DWD, Potsdam, Germany**
	External parameters of the LLM

Poster	**H.-J. Herzog, G. Vogel, U. Schubert, DWD, Potsdam, Germany**
	Results of LLM validation

09:20 - 10:30 **Working Groups**

Working Group 1: Methods for the Evaluation of nh models

Chairperson: B. Skamarock
Protocol: M. Baldauf

Working Group 2: Convection for the fine scale models

Chairperson: Z. Janjic
Protocol: E. Heise

Working Group 3: R K and other 2 timelevel methods

Chairperson: J. Klemp
Protocol: J. Steppeler

10:30 - 12:00 **Poster Session - Coffee**

12:00 - 12:20 Report of the Chairperson of Working Group 1 and Discussion

12:20 - 12:40 Report of the Chairperson of Working Group 2 and Discussion

12:40 - 13:00 Report of the Chairperson of Working Group 3 and Discussion

13:00 End of Workshop