FOREWORD

The *International Conference on Alpine Meteorology* (ICAM) series was started in 1950 in Italy by Mario BOSSOLASCO, a far sighted geophysicist and meteorologist. The meteorological services and some research institutes in the then six Alpine countries Italy, Austria, Switzerland, France, Germany and Yugoslavia (today: Slovenia and Croatia) acted as regular hosts at biennial intervals. A nine-month-shift to odd years in 2003 resulted in a better synchronization with the *Mountain Meteorology Conference* series of the *American Meteorological Society* taking place in even years. The 30th realization of ICAM in Rastatt, Germany, concludes the fifth cycle through the Alpine countries before a new routine will be started in 2011 in the United Kingdom, which recently joined the ICAM-countries.

Scientific conferences constitute an important method to establish new cooperative links and to further existing cooperation. They provide occasions for the exchange of new ideas and techniques between staff and students from universities, research laboratories, and meteorological services. The communication of ideas is regularly enhanced, when the venue is situated in a town of modest size and with some cultural backcloth. In summer 2007 the *Badnerhalle* in Rastatt was found to meet these criteria well. Good public transportation links and the proximity to Black Forest and Vosges, where the COPS operations took place from June to August 2007, are additional advantages.

The settlement of Rastatt was first mentioned in written documents as early as 1084. Around 1700 the grown village gained town-rights, just before margrave *Ludwig-Wilhelm* moved his residence from Baden-Baden to here in 1705. The castle was completed during the following years. Today it preserves the state-rooms, richly ornamented in rococo-style, and several museums. After numerous changes of the political situation in the border region of Germany and France, today's population of nearly 50,000 inhabitants could enjoy several decades of stability in a central region of the European Union. We take this spirit of cooperation as a good *omen* for the success of ICAM-2009.

The response to the call for papers was impressive indeed. The programme committee structured the submitted contributions in two different, but equally important classes: short oral presentations to the plenary and poster presentations for in-depth discussions with interested colleagues during extended poster sessions. All contributors were given the possibility to submit a two-page extended abstract five weeks before the conference in order to aid individual selections during the event. Around 125 *Extended Abstracts* were received and are collected here following the ICAM-2009 *Programme* (pp. *ii-xvii*) in two large blocks:

A) Oral Presentations (pp. 1–125) and
B) Poster Presentations (pp. 127–253)

The *Author Index* (pp. 257–259) helps to find contributions by their originators. It is hoped that this volume serves the intended purpose during the conference and that it will later conserve some of the spirit in the tradition of previous ICAM volumes. For cost reasons the figures are printed in black-and-white; numerous colour versions are contained in the electronic issue which can be downloaded from the conserved ICAM-2009 website under www.pa.op.dlr.de/icam2009/extabs .

In conclusion we express our gratitude to all contributors to this volume for adhering well to dates and guidelines (cf. pp. 254–255), to our colleagues on the organisation and programme committees for their combined efforts to set up a balanced programme and to stage the event, and to our sponsors from industry, international agencies and meteorologically oriented German institutions for their confidence and support.

Around Easter in April 2009

Hans VOLKERT & Günther ZÄNGL

30th International Conference on Alpine Meteorology (ICAM)

Structure of sessions and overview timetable

Time	*Monday 11 May 2009*	*Tuesday 12 May 2009*	*Wednesday 13 May 2009*	*Thursday 14 May 2009*	*Friday 15 May 2009*
09:00 – 10:30	**Opening** short addresses 2 'historic' talks 1 review talk	**Session 04** *BoundLayer* Turbulence 6 talks	**Session 08** *PRECIP* D-PHASE 1review, 4talks	**Session 12** *BoundLayer* Cold Pools 6 talks	**Session 16** *PRECIP* other regions 6 talks
	Coffee	*Coffee*	*Coffee*	*Coffee*	*Coffee*
11:00 - 12:30	**Session 01** *PRECIP* COPS-Observation 6 talks	**Session 05** *BoundLayer* Therm. driven flows 6 talks	**Session 09** *NWP* COPS-DPHASE 6 talks	**Session 13** *SNOW* 6 talks	**Session 17** *NWP* Towards the future 6 talks
	Lunch	*Lunch*	*Lunch* & guided tour through baroque residence 15:30	*Lunch*	**Awards+Discuss.** 13:00 *Lunch*
14:00 - 15:00	**Session 02** *PRECIP* Idealized 4 talks	**Session 06** *DYNAMICS* Synoptic scale 4 talks		**Session 14** *DYNAMICS* Meso.mount.flows 1 4 talks	
15:00 – 16:30	**Poster Session A** *PRE & CLI-1* (with refreshments)	**Poster Session B** *BL & CLI-2* (with refreshments)	**Session 10** *PRECIP* Aerosols 4 talks	**Poster Session C** *DYN & SNOW* (with refreshments)	
16:30 – 18:00	**Session 03** *PRECIP* Convect. Initiation 6 talks	**Session 07** *CLIMATE* 6 talks	*Coffee* **Session 11** *PRECIP* Analyses 4 talks	**Session 15** *DYNAMICS* Meso.mount.flows 2 6 talks	
19:30 - 21:30	***ICEBREAKER***		***DINNER***		
22:30					

Note: All submissions were grouped in topical categories, most of them with sub-categories:

CLIMATE	climate aspects	*BoundLayer*	boundary layer processes
DYNAMICS	dynamical aspects	*PRECIP*	precipitation processes
NWP	numerical weather prediction	*SNOW*	snow pack

Typically, packets of 4 or 6 presentations are assembled to fill the 17 oral sessions as given above.

Poster groups *PRE*, *BL* and *DYN* are accompanied by the remaining posters in such a way as to achieve fairly equal numbers of poster presentations for each day (~36).

The programme also serves as table of contents for the 2-page Extended Abstracts
(these are available for all contributions for which a page number is given)

as of 15 April 2009

Part A) Sequence of events and oral presentations

Sunday, 10 May 2009		
17:00-19:00		***R e g i s t r a t i o n***

Monday, 11 May 2009		
08:00-09:00	***page***	***R e g i s t r a t i o n*** (continued)
Opening session		***Welcome*** *and* ***short address*** Chair: *Hans Volkert*
09:10-09:20	***002***	*Gerhard* ***Adrian*** (DWD, Offenbach, D): ICAM as a regular visitor: Back to Germany for the fifth time
		Two 'historic' talks with some modern ingredients:
09:20-09:40	***004***	*Haraldur* ***Ólafsson*** (Univ. of Reykjavík, Iceland & Univ. of Bergen, N) and *Ágústsson*: Mountain Meteorology in the Middle Ages
09:40-10:00	***008***	*Arnold* ***Tafferner*** (DLR, Oberpaffenhofen, D), *Hoinka, Zängl* & *Weber* : The 'miraculous' föhn in Bavaria of January 1704
		Overview after a recent field campaign in the neighbourhood:
10:00-10:30		*Volker* ***Wulfmeyer*** (University of Hohenheim, Stuttgart, D): The Convective and Orographically-induced Precipitation Study (COPS): A unique data set for studying the initiation and organization of convection in low-mountain regions
10:30-11:00		***C o f f e e***
Session 01		***Precipitation Processes:*** Chair: *Mathias Rotach* ***Observations during COPS***
11:00-11:15		*Stephen* ***Mobbs*** (Univ. of Leeds, UK): Observations of shallow convection over the Black Forest during COPS
11:15-11:30	***010***	*Andrew* ***Russell*** (Univ. of Manchester, UK) and *Vaughan*: An examination of atmospheric lids during COPS
11:30-11:45	***012***	*Jan* ***Handwerker*** (KIT, Karlsruhe, D), *Träumner, Grenzhäuser, Wieser*: Wind measurements with lidar and cloud radar during COPS
11:45-12:00	***014***	*Paolo* ***di Girolamo*** (Univ. Basilicata, Potenza, I), *Summa, Bhawar, di Iorio, Vaughan, Norton and Peters*: Lidar and Radar Measurements of the melting layer in the frame of the Convective and Orographically-induced Precipitation Study
12:00-12:15	***016***	Rohini ***Bhawar*** (Univ. Basilicata, Potenza, I), *di Girolamo, Summa, di Iorio and Demoz*: Study of an MCS using Raman Lidar in the frame of the Convective and Orographically induced Precipitation Study
12:15-12:30	***018***	*Alan* ***Blyth*** (Univ. of Leeds, UK), *Huang, Brown, Cotton, Jones, Coe, Choularton, McFiggans* and *Irwing*: Influence of orography and aerosols on the microphysics of convective clouds observed during COPS
12:30-14:00		***L u n c h***
Session 02		***Precipitation Processes: Idealized studies*** Chair: *Dale Durran*
14:00-14:15	***020***	*Ulrich* ***Blahak*** (KIT, Karlsruhe, D): Idealized numerical sensitivity studies on shallow-convection-triggered storms in a low mountain range
14:15-14:30		*Daniel J.* ***Kirshbaum*** (Univ. of Reading, UK): Lee-wave triggering of deep convection
14:30-14:45	***022***	*Axel* ***Seifert*** (DWD, Offenbach, D) and *Zängl*: Scaling relations in warm orographic precipitation
14:45-15:00	***024***	*Günther* ***Zängl*** (DWD, Offenbach, D): The influence of the freezing level on orographic precipitation patterns at small scales

Monday, 11 May 2009 (continued)		
15:00-16:30		**POSTER SESSION A** ***with refreshments*** ***Precipitation Processes*** *and* ***Climate***
Session 03	***page***	***Precipitation Processes:*** Chair: *Ron McTaggart-Cowen* ***Convective initiation***
16:30-16:45		*Christoph* ***Kottmeier*** (KIT, Karlsruhe, D), *Kalthoff, Corsmeier, Barthlott, Träumner, Arnold, Wieser* and *Mahlke*: Initiation and coherent structures of PBL convection over low mountains during the campaigns ESCOMPTE, VERTIKATOR, CSIP, and COPS
16:45-17:00	***026***	*Ulrich* ***Corsmeier*** (KIT, Karlsruhe, D), *Barthlott, Kalthoff, Konow* et al.: Driving processes for convection initiation over complex terrain: COPS observations and respective COSMO simulations
17:00-17:15	***028***	*Evelyne* ***Richard*** (Lab. d'Aérologie, Toulouse, F), *Chaboureau, Flamant*: Forecasting summer convection over the Black Forest: A case study from the COPS experiment
17:15-17:30	***030***	*Christian* ***Barthlott*** (KIT, Karlsruhe, D), *Schipper, Kalthoff, Adler* and *Kottmeier*: COSMO model simulation of convergence zones in complex terrain: A case study from COPS
17:30-17:45	***032***	*Martin* ***Hagen*** (DLR, Oberpfaffenhofen, D), *van Baelen* and *Richard*: Influence of the wind profile on the location of hotspots of convection in mountainous terrain
17:45-18:00		*Andreas* ***Behrendt*** (Univ. of Hohenheim, Stuttgart, D), *Pal, Radlach, Aoshima* and *Wulfmeyer*: Analysis of convection initiation processes in complex terrain with the synergy of COPS remote sensing data
19:30-21:30		***ICEBREAKER***

Tuesday, 12 May 2009		
Session 04		***Boundary Layer Processes: Turbulence*** Chair: *Christian Barthlott*
09:00-09:15	***034***	*Branko* ***Grisogono*** (Univ. of Zagreb, CRO): Generalizing the local mixing length-scale for stable atmospheric boundary layers
09:15-09:30	***036***	*Željko* ***Vecenaj*** (Univ. of Zagreb, Zagreb, CRO), *Belušić* and *Grisogono*: Characteristics of the near-surface turbulence during a bora event
09:30-09:45	***038***	*Marwan* ***Katurji*** (Univ. of Canterbury, New Zealand), *Sturman, Zawar*: An investigation into ridge-top turbulence characteristics: A New Zealand case study of in situ measurements and large eddy simulation
09:45-10:00	***040***	*Rebecca* ***Mott*** (SLF, Davos, CH) and Lehning: The application of microscale airflow simulations for quantifying snow drift processes over complex terrain
10:00-10:15		*Stefano* ***Serafin*** (Univ. of Trento, I), *Caresia, Panelatti* and *Zardi*: A numerical investigation of the potential temperature and turbulent kinetic energy budgets in thermally driven winds in alpine valleys
10:15-10:30		*Stephan* ***de Wekker*** (Univ. of Virginia, Charlottesville, USA), *Lee, Craven, George* and *Tertell*: A preliminary investigation of atmospheric boundary layer evolution over the Blue Ridge Mountains in Virginia
10:30-11:00		***Coffee***
Session 05		***Boundary Layer Processes:*** Chair: *Branko Grisogono* ***Thermally driven flows***
11:00-11:15	***042***	*Jürg* ***Schmidli*** (IAC ETH, Zurich, CH) and *Rotunno*: Mechanisms of along-valley winds
11:15-11:30	***044***	*Dino* ***Zardi*** (Univ. of Trento, I): A conceptual model for the daytime evolution of the thermal structure in a mountain valley under fair weather conditions

11:30-11:45	***046***	*Bart* ***Geerts*** (Univ. of Wyoming, Laramie, USA) and *Demko*: Observations and numerical simulations of the interaction between the thermally-forced orographic circulation in the convective boundary layer and deep convection
11:45-12:00	***048***	*Jian-Wen* ***Bao*** (NOAA, Boulder, USA), *E. Grell, Michelson* and *G. Grell*: Investigation of orographic venting of atmospheric boundary layer air using observations and the WRF-Chem model
12:00-12:15	***050***	*Stefan* ***Emeis*** (KIT, Garmisch, D), *Schäfer, Forkel, Obleitner* & *Suppan*: Assessment of air quality and mixing-layer height in an Alpine valley from measurements and numerical modelling
12:15-12:30	***052***	*Cyrille* ***Flamant*** (IPSL, Paris, France), *Champollion, Richard, Masson, Cuesta* et al. : Complex valley flows and their impact on water vapor transport in pre-convective and convective environments: a case study
12:30-14:00		***L u n c h***
Tuesday, 12 May 2009 (continued)		
Session 06	***page***	***Dynamics: Synoptic scale aspects*** Chair: *Manfred Dorninger*
14:00-14:15	***054***	*Ron* ***McTaggart-Cowan*** (Env. Canada, Dorval, CAN), *Galernau* and *Bosart*: Development of an Alpine lee cyclone during MAP D-PHASE: Forcings for cyclogenesis
14:15-14:30		*Kristian* ***Horvath*** (DHMZ, Zagreb, CRO), *Ivatek-Šahdan*, *Ivančan-Picek* and *Grubišić*: Evolution and structure of two severe cyclonic Bora events: Contrast between the northern and southern Adriatic
14:30-14:45	***056***	*Sylvain* ***Mailler*** (LMD/CNRS, Paris, F) and *Lott*: A dynamical influence of the Himalayas on the winter south-eastern Asian monsoon
14:45-15:00	***058***	*Sixiong* ***Zhao*** (CAS, Beijing, China) and *Fu*: Dynamics of a vortex with heavy rainfall east of the Tibetan Plateau
15:00-16:30		**Poster session B *with r e f r e s h m e n t s*** ***Boundary Layer Processes*** *and* ***Climate***
Session 07		***Climate aspects*** Chair: *David Whiteman*
16:30-16:45		*Reinhold* ***Steinacker*** (Univ. of Vienna, A), *Sperka* and *Mayer*: A new high resolution Alpine re-analysis
16:45-17:00	***060***	*Simona* ***Fratianni*** (Univ. of Turin, I) and *Aquaotta*: Climate variability in North-Western Italy through the use of reconstructed and homogenized thermo-pluviometric series
17:00-17:15	***062***	*Sophie* ***Fukutome*** (MeteoSwiss, Zurich, CH), *Liniger* and *Frei*: An Alpine climatology of extreme events
17:15-17:30	***064***	*Monika* ***Rauthe*** (KIT, Karlsruhe, D), *Kunz* and *Mohr*: Winter storms with high loss potential in a changing climate: A regional perspective
17:30-17:45	***066***	*Rebekka* ***Posselt*** (MeteoSwiss, Zurich, CH), *Dürr, Stöckli* and *Müller*: Satellite-based retrieval of global radiation over complex terrain: A climatology for the Alps
17:45-18:00	***068***	*Jochen* ***Wagner*** (Univ. Bodenkultur, Vienna, A), *Arola, Blumthaler, Fitzka, Kift, Kreuter, Rieder, Simic* et al.: Comparison of ground-based UV irradiance measurements with satellite-derived values: 1-D and 3-D-radiative transfer model calculations in mountainous terrain

Wednesday, 13 May 2009		
Session 08	***page***	***Precipitation Processes: D-PHASE*** Chair: *Andreas Behrendt*
09:00-09:30	***070***	*Mathias* ***Rotach*** (MeteoSwiss, Zurich, CH), *Arpagaus, Dorninger, Hegg, Montani* and *Ranzi*: MAP D-PHASE: Lessons learned and future developments *(overview presentation)*
09:30-09:45	***072***	*Tanja* ***Weusthoff*** (MeteoSwiss, Zurich, CH), *Ament, Arpagaus* and *Rotach*: Verification of precipitation forecasts of the D-PHASE data set
09:45-10:00		*Luca* ***Panziera*** (MeteoSwiss, Zurich, CH) and *Germann*: Probabilistic nowcasting of orographic rainfall
10:00-10:15		*Simon* ***Jaun*** (WSL, Birmensdorf, CH), *Walser, Schär* and *Zappa*: Evaluation of a coupled meteorologic-hydrologic (ensemble) prediction system within the MAP D-PHASE
10:15-10:30	***074***	*Uwe* ***Ehret*** (TUniv. München, D) Evaluation of operational weather forecasts: Applicability for flood forecasting in Alpine Bavaria
10:30-11:00		***C o f f e e***
Session 09		***Numerical Weather Prediction:*** Chair: *Andrea Buzzi* ***COPS*** *and* ***D-PHASE***
11:00-11:15	***076***	*Stefano* ***Mariani*** (ISPRA, Roma, I), *Casaioli, Lanciani, Accadia* and *Tartaglione*: A multi-model intercomparison study for quantitative precipitation forecast using the 6-month MAP D-PHASE dataset
11:15-11:30		*Hans Stefan* ***Bauer*** (Univ. of Hohenheim, Stuttgart, D), *Wulfmeyer, Zus, Schwitalla, Dick, Bender, Wickert* and *Gendt*: The SPP1167 Project COPS-GRID and results of first studies using GPS and radar data
11:30-11:45		*Matthias* ***Zimmer*** (Univ. of Mainz, D) and *Wernli*: Verification of precipitation forecasts from different regional NWP model categories
11:45-12:00	***078***	*Kathrin* ***Wapler*** (DWD, Offenbach, D), *Seifert* and *Ritter*: Using COPS data for the validation of the high-resolution NWP model COSMO-DE
12:00-12:15	***080***	*Olivier* ***Caumont*** (Météo-France, Toulouse, F), *Wattrelot, Jaubert* and *Ducrocq*: Assimilation of weather radar reflectivity in the AROME model for the COPS-IOP9
12:15-12:30	***082***	*Geneviève* ***Jaubert*** (Météo-France, Toulouse, F), *Yan, Ducrocq, Brousseau, Champollion* and *Flamant* : Impact of GPS data assimilation on the convective scale prediction of COPS-IOP9
12:30-15:30		***L u n c h &*** ***guided tour through baroque residence***
Session 10		***Precipitation Processes: Aerosols*** Chair: *Mark Žagar*
15:30-15:45	***084***	*Jean-Pierre* ***Chaboureau*** (Univ. of Toulouse, F), *Richard, Pinty, di Girolamo, Kiemle* and *Flamant*: Long-range transport of Saharan dust from CALIPSO, airborne and ground-based lidars, and a regional model during COPS
15:45-16:00		*Gregor* ***Gläser*** (Univ. of Mainz, D) and *Knippertz*: Influence of the Atlas Mountains on large-scale dust storms in the Sahara desert
16:00-16:15	***086***	*Céline* ***Planche*** (LaMP, Clermont-Ferrand, F), *Flossmann* and *Wobrock*: The influence of aerosol particle number and hygroscopicity on the evolution of convective cloud systems and their precipitation: A numerical study based on the COPS observations on 12 and 13 August 2007
16:15-16:30	***088***	*Heike* ***Noppel*** (KIT, Karlsruhe, D), *Blahak, Seifert* and *Beheng*: Investigations of the impact of aersols on a hailstorm in the Black Forest
16:30-17:00		***C o f f e e***

Wednesday, 13 May 2009 (continued)		
Session 11	***page***	***Precipitation Processes: Analyses*** Chair: *Ronald B. Smith*
17:00-17:15	***090***	*Idar* ***Barstad*** (Univ. of Bergen, N), *Heikkila* and *Mesquita*: Precipitation downscaling at western Norway: Time-step precipitation intensity
17:15-17:30	***092***	*Mark* ***Liniger*** (MeteoSwiss, Zurich, CH), *Schiemann* and *Frei*: Gridding daily precipitation from sparse surface networks in complex topography: A reduced space optimal interpolation approach
17:30-17:45	***094***	*Theresa* ***Gorgas*** (Univ. of Vienna, A), *Dorninger* and *Steinacker*: High resolution analyses based on the D-PHASE & COPS GTS and non-GTS data sets
17:45-18:00		*Stefan* ***Schneider*** (Univ. of Vienna, A), *Steinacker, Dorninger* and *Gorgas*: High resolution precipitation measurements during COPS
19:30-22:30		***D I N N E R***

Thursday, 14 May 2009		
Session 12		***Boundary Layer Processes: Cold Pools*** Chair: *Kristian Horvath*
09:00-09:15	***096***	*David* ***Whiteman*** (Univ. of Utah, Salt Lake City, USA), *Hoch, Lehner* & *Hahnenberger*: Nocturnal cold air intrusions at Arizona's Meteor Crater
09:15-09:30		*Sharon* ***Zhong*** (Mich. State Univ., East Lansing, USA) and *Yao*: Atmospheric conditions leading to the formation of a strong temperature inversion in an enclosed basin
09:30-09:45	***098***	*Manfred* ***Dorninger*** (Univ. of Vienna, A): Aspects of cold pool life cycle in Austrian sinkholes
09:45-10:00		*Daniel* ***Martínez*** (Univ. Illes Bal., Palma, E), *Cuxart* and *Jiménez*: Analysis of a cold pool formed in a large basin
10:00-10:15		*Sebastian* ***Hoch*** (Univ. of Utah, Salt Lake City, USA), *Whiteman* and *Mayer*: Topographic effects on radiative cooling in valleys and basins
10:15-10:30	***100***	*Thomas* ***Haiden*** (ZAMG, Vienna, A): The role of subsidence in valley and basin warming
10:30-11:00		***C o f f e e***
Session 13		***Snow pack*** Chair: *Massimiliano Fazzini*
11:00-11:15		*Justin* ***Minder*** (Univ. of Washington, Seattle, USA), *Wayand, Durran*, and *Roe*: The sensitivity of mountain snowpack accumulation to climate warming: Insights from a hierarchy of models
11:15-11:30	***102***	*Christian* ***Wüthrich*** (MeteoSwiss, Zurich, CH), *Beggert, Scherrer, Croci-Maspoli, Appenzeller* and *Weingartner*: Analyses of newly digitised snow series over the last 100 years in Switzerland
11:30-11:45		*Michi* ***Lehning*** (SLF, Davos, CH), *Stössel, Manes, Guala* and *Fierz*: Measurements and simulations of surface mass- and energy balance over snow at a mountain site
11:45-12:00		*Markus* ***Engelhardt*** (KIT, Karlsruhe, D), *Lehner, Salzmann* and *Hauck*: Ground-atmosphere modelling of Alpine permafrost and the significance of the snow cover
12:00-12:15	***104***	*Heidi* ***Escher-Vetter*** (BAdW, Munich, D) and *Weber*: Determination of snow accumulation in high mountains based on data from climate stations
12:15-12:30	***106***	*Roberto* ***Barbiero*** (DPCTT, Trento, I), *Fazzini* and *Gaddo*: The exceptional meteorological conditions of the December 2008 in the Trentino area (north east Italy): Synoptic and nivological analysis at mesoscale

Thursday, 14 May 2009 (continued)		
12:30-14:00		***L u n c h***
Session 14	***page***	***Dynamics: Mesoscale mountain flows I*** Chair: *Vanda Grubišić*
14:00-14:15	***108***	*Hans* ***Richner*** (IAC ETH, Zurich, CH): Estimating foehn dynamics from train and cable car accidents
14:15-14:30		*Marius Opsanger* ***Jonassen*** (Univ. of Bergen, N), *Ólafsson* and *Reuder*: Flow structures over Hofsjökull glacier, Iceland, during the FLOHOF 2007 experiment
14:30-14:45		*Michael* ***Würsch*** (IAC ETH, Zurich, CH), *Sprenger* and *Jenker*: Lagrangian-based analysis of airflow during foehn in the Alps
14:45-15:00		*Simon* ***Vosper*** (MetOffice, Exeter, UK), *Wells, Yan* and *Arnold*: Using satellite data to constrain gravity-wave drag parametrizations
15:00-16:30		**Poster Session C with *r e f r e s h m e n t s*** ***Dynamics*** *and* ***Snow***
Session 15		***Dynamics: Mesoscale mountain flows II*** Chair: *Günther Zängl*
16:30-16:45		*Vanda* ***Grubišić*** (Univ. of Vienna, Austria), *Haimov, French, Oolman* and *Xiao*: Wave-induced turbulence in the lee of the Medicine Bow mountains
16:45-17:00	***110***	*Ivana* ***Stiperski*** (DHMZ, Zagreb, CRO) and *Grubišić*: Trapped lee wave interference in presence of surface friction
17:00-17:15		*Dale* ***Durran*** (Univ. of Washington, Seattle, USA) and *Reinecke*: The over-amplification of gravity waves in numerical solutions to flow over topography
17:15-17:30		*Patrick* ***Reinecke*** (NRL, Monterey, USA) and *Durran*: Initial condition sensitivities and the predictability of downslope winds
17:30-17:45		*Daniel* ***Reinert*** (Univ. of Mainz, D) and *Wirth*: The role of gravity waves for banner cloud dynamics
17:45-18:00		*Helen* ***Wells*** (MetOffice, Exeter, UK) and *Vosper*: Predictability of orographic drag for realistic atmospheric profiles

Friday, 15 May 2009		
Session 16		***Precipitation Processes: A look outside of the Alps*** Chair: *Christian Keil*
09:00-09:15		*Ronald B.* ***Smith*** (Yale Univ., New Haven, USA) and *Kirshbaum*: Orographic precipitation in the tropics: Linear theory of triggered convection
09:15-09:30		*Claus-Jürgen* ***Lenz*** (KIT, Karlsruhe, D), *Kottmeier* and *Corsmeier*: Dynamics and predictability of Mediterranean cyclones: The influence of sea surface and steep orography
09:30-09:45		*Michael* ***Sprenger*** (IAC ETH, Zurich, CH), *Schlemmer* and *Martius*: Disentangling the forcing mechanisms of heavy precipitation events along the Alpine south side using potential vorticity inversion
09:45-10:00	***112***	*Véronique* ***Ducrocq*** (Météo-France, Toulouse, F), *de Saint Aubin, Bresson, Nuissier* and *Ricard*: A numerical study of the combined processes leading to Mediterranean quasi-stationary MCS
10:00-10:15	***114***	*Ulrike* ***Romatschke*** (Univ. of Washington, Seattle, USA), *Medina, Houze* and *Rasmussen*: Topographic and diurnal effects on tropical and sub-tropical convection in South America
10:15-10:30	***116***	*Socorro* ***Medina*** (Univ. of Washington, Seattle, USA), *Houze, Williams* and *Kingsmill*: Structure of mid-latitude cyclones crossing the California Sierra Nevada as seen by vertically pointing radar
10:30-11:00		**Coffee**

Friday, 15 May 2009 (continued)		
Session 17	***page***	***Numerical Weather Prediction: Towards the future*** Chair: *Evelyne Richard*
11:00-11:15	***118***	*Christian* ***Keil*** (DLR, Oberpfaffenhofen, D) and *Craig*: Sources of uncertainty determined by high-resolution ensemble modelling
11:15-11:30	***120***	*Kirstin* ***Kober*** (DLR, Oberpfaffenhofen, D), *Craig, Keil* and *Tafferner*: Probabilistic forecasting of thunderstorms through combining nowcasting methods and numerical weather prediction
11:30-11:45		*Chiara* ***Marsigli*** (ARPA-SIM, Bologna, I), *Montani* and *Paccagnella*: Intercomparison of limited-area ensemble systems during the MAP D-PHASE operation period
11:45-12:00	***122***	*Javier* ***Garcia Hernandez*** (LCH EPF, Lausanne, CH), *Sirvent, Jordan, Boillat* and *Schleiss*: Ensemble meteorological forecast for the upper Rhone river basin
12:00-12:15	***124***	*Jason* ***Milbrandt*** (Env. Canada, Dorval, CAN), *Mailhot* and *McTaggart-Cowen*: The Canadian high-resolution NWP system for the 2010 winter Olympics
12:15-12:30		*Trevor* ***Smith*** (Env. Canada, Vancouver, CAN), *Synder* and *McLennan*: Some forecasting challenges for the 2010 Olympic and Paralympic winter games
Closing session		Chair: *Stephen Mobbs*
12:30		**A w a r d s**
-		*David* ***Parsons*** (WMO, THORPEX-IPO, Geneva, CH): Towards ICAM-2011: Resumé of current research efforts and envisioned trends
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Part B) Poster blocks

All posters are on display for the full week. Authors are asked to be ready for discussions at the poster times on Monday, Tuesday and Thursday afternoon, respectively.

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P02 *Andreas **Schäfler*** (DLR, Oberpfaffenhofen, D), *Craig, Dörnbrack, Kiemle, Rahm* and *Wirth*:
Characterising the convective environment with direct measurements of moisture flux from airborne wind and water vapour lidars

P03 *Samuel **Buisán*** (AEMET, Zaragoza, E), *Espero, Sanz, Cortés* and *Lafragüeta*:
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P04 *Bianca **Adler*** (KIT, Karlsruhe, D), *Kalthoff, Barthlott, Corsmeier, Mobbs, Crewell, Träumner, Kottmeier, Wieser* and *V. Smith*:
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P05 *Mamina **Kamara*** (Senegal Met Office, Senegal), *Ba* and *Ndiaye*:
Case study: impact of the exceptional rains on the floods in Senegal

P06 *Vanja **Kovač*** (ARSO, Ljubljana, SI*), Cedilnik, N. Žagar* and *M. Žagar*:
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P08 *Jože **Rakovec*** (Univ. of Ljubljana, SI), *Žabkar* and *M. Žagar*:
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P10 *Günther **Zängl*** (DWD, Offenbach, D) and *Seifert*:
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P11 *Idar **Barstad*** (Univ. of Bergen, N):
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P12 *Raffaele **Salerno*** (Epson Meteo Centre, Milano, I):
Predictability analyses in global and regional scale applications

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P14 *Thomas* ***Schwitalla*** (Univ. of Hohenheim, Stuttgart, D), *Bauer, Zus* and *Wulfmeyer*: ***page***
The WRF modeling system and first results of its application within the COPS period

P15 *Andrea* ***Buzzi*** (ISAC-CNR, Bologna, I), *Diavolio, Drofa* and *Malguzzi*:
The PROSA project: monitoring, nowcasting and short range forecasting over the Alps and other areas of Italy

P16 *Kirsty E.* ***Hanley*** (Univ. of Reading, UK), *Belcher, Clark* and *Kirshbaum*:
Predictability of convection in COPS: high-resolution ensemble forecasts from the Unified Model

P17 *Suraj D.* ***Polade*** (Univ. of Hamburg, D) and *Ament*:
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P18 *Mathieu* ***Reverdy*** (LaMP, Clermont-Ferrand, F), van *Baelen, Walpersdorf, Dick, Hagen* and *Richard*: Water vapor fields retrieved with tomography software. ***144***

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B02 *Meinolf* ***Kossmann*** (DWD, Offenbach, D), *Hoch, Whiteman* and *Sievers*:
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B03 *Josep R.* ***Miró*** (MSC, Barcelona, E) and *Pagès*:
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B04 *Marina* ***Mileta*** (DHMZ, Zagreb, CRO):
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B07 *Mathias* ***Bavay*** (SLF, Davos, CH), *Dawes, Lehning, Aberer* and *Parlange*:
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B08 *Christof* ***Gromke*** (SLF, Davos, CH), *Walter, Manes* and *Lehning*:
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B09 *Stephan* ***de Wekker*** (Univ. of Virginia, Charlottesville, USA), *Godwin* and *Emmitt*:
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B10 *Haraldur* ***Ólafsson*** (Univ.s of Bergen, N & Reykjavík, Iceland), *Rögnvaldsson, Reuder, Ágústsson, Kristjánsson* and *Petersen*:
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B12 *Marcus* ***Radlach*** (Univ. of Hohenheim, Stuttgart, D) *Behrendt, Pal* and *Wulfmeyer*:
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B13 *Tammy M.* ***Weckwerth*** (NCAR, Boulder, USA), *Wulfmeyer, Behrendt, Pal* and *Aoshima*:
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B14 *Luciana* ***Rossato*** (INPE, Sao Jose dos Campos, Brazil), *de Jeu* and *Alvalá*:
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B15 *Yann* ***Largeron*** (LEGI, Grenoble, F), *Staquet* and *Chemel*:
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B24 *Tammy M.* ***Weckwerth*** (NCAR, Boulder, USA) and *Wilson*:
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B25 *Victoria* ***Smith*** (Univ. of Leeds, UK), *Hobby, Mobbs* and *Burton*:
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D05 *Michael* ***Sprenger*** (IAC ETH, Zurich, CH), *Jenker, Schwierz* and *Dierer*:
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