

ICAM/MAP2003 Programme

Monday 19.05.2003

- 09:00 - 09:45 Opening
- Welcome addresses:
- Gerhard Müller, Deputy Director of MeteoSwiss
 - Dr. Zhaochong Lei, Chief Weather Prediction Research and Tropical Meteorology, WMO
 - Viola Amherd, Mayor of the town of Brig
 - Slide Show on mountain meteorology and MAP by Andreas Walker

09:45 - 10:15 Coffee Break

Session 1: Orographic Precipitation I

Chairperson: Ronald Smith

- 10:15 - 10:45 1.1 **INVITED PRESENTATION: Orographic Enhancement of Precipitation in Midlatitudes: Results from MAP and IMPROVE II**
Houze R.A., S. Medina
- 10:45 - 11:00 1.2 **Radar-Derived Kinematics and Microphysics in Convective Cells During MAP IOP 3b**
Georgis J.F., M. Chong, F. Roux
- 11:00 - 11:15 1.3 **Orographic Precipitation in Potentially Unstable Alpine Storms: MAP IOPs 2b, 3 and 5**
Medina S., R.A. Houze
- 11:15 - 11:30 1.4 **The MAP Re-Analysis: Quality Assessment and Data Impact Studies**
Keil C., C. Cardinali
- 11:30 - 11:45 1.5 **Numerical Simulations of the Precipitation Event Observed During the MAP IOP 2a: Sensitivity to the Initial Conditions**
Lascaux F., E. Richard, C. Keil, O. Bock
- 11:45 - 12:00 1.6 **Analysis of the Northerly Low-Level Flow in the Po Valley During the Southwesterly MAP IOP 3**
Asencio N., J. Stein, M. Chong
- 12:00 - 12:15 1.7 **The Sensitivity of Simulated Orographic Rainfall to Model Details not Directly Related to Precipitation**
Zängl G.
- 12:15 - 13:45 Lunch Break
- 13:45 - 14:00 Weather Briefing

Session 2: Orographic Precipitation II

Chairperson: Evelyne Richard

- 14:00 - 14:15 2.1 **Numerical Assessment of MAP Episodes of Heavy Precipitation Using High Resolution Reanalyses and Assimilation of Surface Data**
Buzzi A., M. D'Isidoro, S. Davolio, P. Malguzzi
- 14:15 - 14:30 2.2 **Predictability Mysteries in MAP IOP 2b and IOP 3**
Walser A., C. Schär
- 14:30 - 14:45 2.3b **Numerical Simulations of the Orographic Precipitation and Mesoscale Environments Associated with MAP IOP 8**
Lin Y.-L., S.-Y. Chen, S. Chiao
- 14:45 - 15:00 2.4 **Evaluation of an Orographic Precipitation Model**
Barstad I., R.B. Smith
- 15:00 - 15:15 2.5 **Shallow Cellular Convection in Orographic Precipitation**
Kirshbaum D.J., D. Durran

Poster Presentation P1

Chairperson: Christoph Schär

15:15 - 15:45 Poster Introduction

- P1.1 **Scale-Dependence of the Predictability of Precipitation from Large-Scale Radar Composites**
Germann U., I. Zawadzki
- P1.2 **Radar Measurements and Cloud Resolving Simulations of Mid-Latitude Convective Storms**
Bertram I., A. Seifert, K.D. Beheng
- P1.3 **Influence of Embedded Convection on Microphysics of Precipitation**
Baschek B., R. Schefold, E. Barthazy
- P1.4 **Modeling and Measuring Precipitation with TRMM over Mountains of Crete**
Skok G., T. Vrhovec
- P1.5 **Thunderstorm Development over the North Alpine Foreland: Microphysical Radar Retrievals from the VERTIKATOR Campaign in July 2002**
Caumont O., K. Friedrich, M. Hagen, H. Höller, H. Volkert
- P1.6 **The Spatial Distribution and Temporal Evolution of Surface Characteristics Triggering Convection: a Case Study from VERTIKATOR**
Schmidt K., N. Kalthoff, F. Fiedler
- P1.7 **Fall Velocity and Axial Ratio of Snowflakes**
Schefold R., B. Baschek, M. Wüest, E. Barthazy
- P1.8 **Strong Precipitation Cases and Wind Shearing in the Southeast Alps**
Vrhovec T., R. Zabkar, K. Suselj, M. Dolinar
- P1.10 **Effects of Orographically-Induced Local Circulations on the Formation of Heavy Rainfall During MAP IOP 2b**
Chiao S., Y.-L. Lin
- P1.12 **Verification and Intercomparison of Limited Area Models Operating During the MAP SOP Using the Updated Version of the MAP Dataset**
Buzzi A., F. Ceccarelli, G. Contri, M. Corazza, M. D'Isidoro, D. Sacchetti, E. Trovatore
- P1.13 **High Resolution Simulations of MAP IOP 2b Case with Lokal Modell**
Boccanera F., D. Cesari, M. Elementi, C. Marsigli, T. Paccagnella

- P1.14 **Wet-MAP Cases Study Using the UK Met Office Model**
Athanassiadou M., A. Brown
- P1.15 **Impacts of the Atlantic and the Mediterranean on a Heavy Precipitation Episode on the Alpine Southside**
Koch P., H.C. Davies
- P1.16 **Convection and Vertical Transport above a Low Mountain Range**
Noppel H., M. Baldauf, F. Fiedler
- P1.17 **Two Cases of Intense Precipitations in the Swiss Alps in 2002**
Gaia M., S. Zanini
- P1.18 **Cellular Convection in Moist Flow past Two-Dimensional Topography**
Fuhrer O., C. Schär
- P1.19 **Medium Term Q.P.F.s by an Analog Based Approach: Objective Evaluations and Comparisons During the MAP Experiment**
Djeboua A., Ch. Obled, G. Bontron
- P1.20 **Some Useful Forecasting Tools in Extreme Weather Events over North-East of Italy**
Berni N., S. Fazlagic, P. Frontero, L. Lombroso, R. Millini, S. Quattrocchi
- P1.21 **Synoptic Dynamics in a Europe without Alps: a Climatology**
Vidale P.-L., C. Schwierz, D. Lüthi, C. Schär
- P1.22 **Analysis of Spatial and Temporal Distribution of Precipitation During the Last Eighty Years in Trentino (Italian Eastern Alps)**
Bisci C., M. Fazzini, F. Dramis, R. Lunardelli, A. Trenti, M. Gaddo
- P1.23 **20th Century Trends of Extreme Precipitation Conditions in the Swiss Alps**
Schmidli J.
- P1.24 **Spatialisation of Extreme Precipitation in Complex Terrain**
Kastelec D., D. Mojca
- P1.25 **Mild Winters and the Precipitation in the Mountain Regions in Bulgaria**
Andreeva T., M. Martinov, St. Momcheva
- P1.26 **The Influence of the Orography on the Spatial and Temporal Distribution of the Daily Precipitation in Romania**
Cazacioc L.
- P1.27 **Precipitation Gradients and their Relationship with Circulation on the Basis of Northern Deserts of the Tatras and Karkonosze**
Tamulewicz J., L. Kolendowicz
- P1.28 **The Orography Influence on the Maximum Daily Sums of Precipitation in Slovakia**
Fasko P., P. Stastný, J. Vívoda
- P1.29 **Changes in Summer Type of Flash Floods in the Slovak Carpathians due to Changing Climate**
Lapin M., K. Hlavèová
- P1.30 **Spatial Analysis of Daily and Hourly Precipitation Amounts Respect to Terrain**
Kveton V., R. Tolasz
- P1.31 **Precipitation Observations across a Mesoscale Mountain Ridge - The Reykjanes Experiment (REX)**
de Vries M. E., H. Ólafsson

15:45 - 16:15

Break and Posterviewing

Session 3: Orographic Precipitation III

Chairperson: Andrea Buzzi

- 16:30 - 16:45 3.1 **Vertical Transport in Thunderstorms at the Northern Alps**
Höller H., K. Friedrich, O. Reitebuch, J. Seltmann, U. Corsmeier, P. Delville
- 16:45 - 17:00 3.2 **A Case Study of Deep Convection Based on VERTIKATOR-Measurements and Comparison with DWD-LM Analysis Data**
Kalthoff N., M. Kunz, M. Eisenmann, C. Kottmeier
- 17:00 - 17:15 3.3 **Tracking of Water Vapour Contributing to Precipitation Events over the Eastern Italian Alps**
Bertò A., A. Buzzi, D. Zardi
- 17:15 - 17:30 3.4 **Terrain and Precipitation Patterns on Southern Side of the Alps in Meso-Beta Scale**
Rakovec J., G. Gregoric, S. Gabersek, T. Vrhovec
- 17:30 - 17:45 3.5 **Analysis of Three Severe Flood Cases over Central Europe**
Dorninger M., L. Haimberger, C. Huhle, M. Hantel
- 17:45 - 18:00 3.6 **Cyclogenesis and Severe Weather in the Vicinity of the Atlas Mountains: Modeling Studies with a Nonhydrostatic Mesoscale Model**
Born K., S. Bachner, C. Brienen, C. Simmer
- 18:15 Icebreaker

Session 4: The VERTIKATOR Project

Chairperson: Hans Volkert

- 08:30 - 09:00 4.1 **INVITED PRESENTATION: An Overview of the VERTIKATOR Project and Results of Alpine Pumping**
Lugauer M., H. Berresheim, U. Corsmeier, A. Dabas, W. Dyck, S. Emeis, J. Egger, T. Fehr, F. Fiedler, Ch. Freuer, L. Gantner, S. Gilge, B. Heese et al.
- 09:00 - 09:15 4.2 **Structure of Convective Turbulence and Turbulent Fluxes over Complex Terrain During VERTIKATOR**
Kottmeier C., M. Hasel, U. Corsmeier, N. Kalthoff

Poster Presentation P2

Chairperson: Hans Volkert

09:15 - 09:45 Poster Introduction

- P2.1 **Characterisation of Alpine Pumping by Airborne Doppler Lidar and Numerical Simulations**
Reitebuch O., A. Dabas, P. Delville, Ph. Drobinski, L. Gantner
- P2.2 **Flow Modification and Mesoscale Transport Caused by "Alpine Pumping": A VERTIKATOR Case Study**
Corsmeier U., C. Kottmeier, P. Winkler, M. Lugauer, O. Reitebuch, P. Drobinski
- P2.3 **Mechanism of Up-Valley Winds**
Rampanelli G., R. Rotunno, D. Zardi
- P2.4 **The Diurnal Circulation of Zugspitzplatt: Observations and Modelling**
Gantner L., J. Egger, M. Hornsteiner
- P2.5 **Impact of Complex Terrain on Sea-breeze Circulation During ESCOMPTE IOP2b.**
Bastin S., P. Drobinski, B. Bénech, J-L. Caccia, B. Campistron, S. Cosma-Averseng, A. Dabas, P. Delville, P. Durand, V. Guenard, O. Reitebuch, C. Werner
- P2.6 **Evaluation of Analytical Predictions of Katabatic Flow on a Low-Angle Slope**
Haiden T.
- P2.7 **Observations of the Cold Air Outflow from a Basin Cold Pool through a Low Pass**
Pospichal B., S. Eisenbach, C.D. Whiteman, R. Steinacker, M. Dorninger
- P2.8 **Classification of Cold Air Pool Events in the Gstettneralm, a Sinkhole in the Eastern Alps**
Eisenbach S., B. Pospichal, C.D. Whiteman, R. Steinacker, M. Dorninger
- P2.10 **On the Turbulence Structure in a Daytime Alpine Valley Atmosphere**
Weigel A.H., M.W. Rotach
- P2.11 **Turbulence Measurements in the Rhine Valley During Foehn Events. Comparison with Others Experiments and Meso-NH Simulations**
Lothon M., A. Druilhet, B. Bénech, G. Jaubert, B. Campistron, F. Saïd, F. Lohou
- P2.12 **Effects of a Forest Canopy on Flow over a Hill**
Ross A.N., S. Vosper, A. Lea
- P2.13 **Gust Factors**
Ágústsson H., H. Ólafsson
- P2.14 **Transformation of Solar Radiation in the Atmospheric Boundary Layer**
Ostrožlík M., F. Smolen

- P2.15 **Observation of transport of anthropogenic ozone to the Mt. Cimone station: contribution to the background ozone concentration**
Cristofanelli P., U. Bonafè, F. Calzolari, F. Evangelisti, P. Bonasoni
- P2.16 **Carbon Dioxide and Water Vapour Fluxes over Grassland in the Swiss Alps**
Furger M., N. Rogiers, W. Eugster, E. Bantelmann, R.T.W. Siegwolf
- P2.17 **Deriving a Vertical Sounding of the Atmosphere over Alpine Terrain Based on the aLMO Model Output**
Spreitzhofer G., N. Raderschall
- P2.18 **Airborne Pollen: a Good Marker of Medium to Long Range Transport by Wind**
Clot B., R. Gehrig
- P2.19 **Sahara Dust Events at the Jungfrauoch: Event Determination by Wavelength Dependence of the Single Scattering Albedo**
Collaud Coen M., E. Weingartner, U. Baltensperger
- P2.20 **Capanna Margherita, the Highest Meteorological Station in Europe. Is it Possible to Consider it as Representative of Synoptic Weather?**
Martorina S., A. Olivero, N. Loglisci, R. Pelosini
- P2.21 **Climatological Comparison of a Satellite Based Alpine Cloud Climatology with Observations of Synoptical Stations**
Kästner M., P. Bissolli, K. Höppner
- P2.23 **Ice-Free Sensors - The EUMETNET SWS II Project**
Rast J., A. Heimo, B. Tammelin, M. Leroy
- P2.24 **SwissMetNet: Renewal of the Swiss Meteorological Networks**
Heimo A., T. Konzelmann
- P2.25 **The Data Warehouse System of MeteoSwiss: Concept and First Experience**
Häberli C., E. Grüter, M. Bassi, D. Tombros, N. Tschichold, M. Abbt, E. Häller, M. Musa, K. Miegliitz, U. Küng, W. Krottendorfer, R. Höfler
- P2.26 **Quality Control Tools for Meteorological Data in the MeteoSwiss Data Warehouse System**
Musa M., E. Grüter, M. Abbt, C. Häberli, E. Häller, U. Küng, T. Konzelmann, R. Dössegger
- P2.27 **Climatological Analysis of the Torino2006 Olympic Venues to Support the XX Winter Olympic Games Planning**
Pelosini R., M. Nicoletta, N. Loglisci, F. Orione
- P2.28 **Meteorological Indexing of Topographic Surfaces - GIS Analysis of an Austrian Digital Elevation Model**
Kerschbaum M.
- P2.29 **Assessment and Correction of the Dry Bias in Radiosonde Measurements During the MAP SOP**
Häberli C., R. Steinacker, S. Tschannett, B. Chimani
- P2.30 **Checking the Homogeneity of Radiosonde Time Series using ERA-40 Analysis Feedback Data**
Haimberger L.
- P2.32 **An Intercomparison of the Numerics of Three Different Models by Means of Idealized High Resolution Runs with Steep Orography**
Hartjenstein G., L. Gantner, H. Noppel, G. Zängl
- P2.33 **Influence of Nonhydrostatic Effects and Time-Integration Schemes on Numerical Simulations in a Complex Orography Environment**
Salerno R.
- P2.34 **Spectral Blending Initialization of ALADIN Model by Incremental Digital Filter**
Klaric D.
- P2.35 **Operational use of the dynamical adaptation for high-resolution ALADIN forecast in Dinaric Alps**
Ivatek-Sahdan S.

P2.37 **A New Operational System for Precipitation Forecasting at the Mountain Stations**
Diaconu O.

09:45 - 11:00 Break and Poster Viewing

Session 5: Planetary Boundary Layer

Chairperson: Stephen Mobbs

- 11:00 - 11:15 5.1 **On the Closure of the Surface Energy Balance in Highly Complex Terrain**
Rotach M.W., P. Calanca, A.H. Weigel, M. Andretta
- 11:15 - 11:30 5.2 **Low Frequency Temperature and Velocity Oscillations in Katabatic Winds**
van Gorsel E., A. Christen, M.W. Rotach, R. Vogt
- 11:30 - 11:45 5.3 **Turbulent Vertical Exchange over Medium and Steep Orography - Measurements and Turbulence Parameterization**
Emeis S., T. Trickl, W. Junkermann
- 11:45 - 12:00 5.4 **Turbulent Heat and Momentum Fluxes in the Wipptal During MAP**
Arnold S.J., M.K. Hill, H.W. Lewis, S.D. Mobbs, A. Gohm, G. Mayr
- 12:00 - 12:15 5.5 **Temperature Inversion Breakup in the Gstettneralm Sinkhole**
Whiteman C.D., B. Pospichal, S. Eisenbach, R. Steinacker, M. Dorninger
- 12:15 - 13:45 Lunch Break
- 13:45 - 14:00 Weather Briefing

Session 6: Observational Means and Techniques

Chairperson: Peter Winkler

- 14:00 - 14:15 6.1 **Dual Radar Analysis of Precipitation and Microwave Attenuation at C-Band in the Lago Maggiore Target Area During the MAP SOP**
Blahak U., K.D. Beheng
- 14:15 - 14:30 6.2 **Temporal Disaggregation of Rain-Gauge Analysis using Radar**
Hagen M., C. Frei, C. Schär
- 14:30 - 14:45 6.3 **Combining Raingauges and RADAR Measurements: an Application to the Upper Reno River Closed at Casalecchio (Italy)**
Mazzetti C., E. Todini
- 14:45 - 15:00 6.4 **DAQUAMAP: Review of Results and Lessons Learned**
Häberli C., R. Steinacker, I. Groehn, W. Pöttschacher, W. Gepp, M. Dorninger
- 15:00 - 15:15 6.5 **NOWA: A Sensor for Measuring Wind, Temperature, Icing and Precipitation**
Joss J., T. Brossi, H. Richner
- 15:15 - 15:30 6.6 **LIDAR Observations of Terrain-Induced Flow and its Application in Airport Wind Shear Monitoring**
Shun C.M., C.M. Cheng, O. Lee
- 15:30 - 15:45 6.7 **Automatic Cloud Cover Detection by Surface Downward Longwave Radiation Measurements**
Dürr B., R. Philippona
- 15:45 - 16:30 Break and Poster Viewing

Session 7: Operational Aspects

Chairperson: Tomaz Vrhovec

- 16:30 - 16:45 7.1 **A New 4D Variational Data Analysis Scheme in the Framework of VERA**
Gepp W., R. Steinacker, M. Ratheiser, M. Dorninger, B. Chimani, S. Tschannett
- 16:45 - 17:00 7.2 **Multi-Data Source Validation of LAM Precipitation Forecasts over the Alps**
Beck A., B. Ahrens
- 17:00 - 17:15 7.3 **Verification of LAMI (Local Area Model Italy) Using Non-GTS Data over Mountaneous Regions**
Oberto E., S. Bande, M. Milelli
- 17:15 - 17:30 7.4 **Performance of COSMO-LEPS over the Alpine Region**
Marsigli C., A. Montani, F. Nerozzi, T. Paccagnella
- 17:30 - 17:45 7.5 **Prediction of Precipitation over Western Himalayan Region Using MM5 Mesoscale Model**
Srinivasan K.
- 17:45 - 18:00 7.6 **Operational Forecasts of Strong Precipitation Events over Complex Topography**
Eckert P., R. Kretzschmar, C. Appenzeller
- 20:00 Öffentlicher Abend (in german):
- Tonbildschau von Andreas Walker
 - Das Unwetter von Brig 1993 und dessen Bewältigung (Hans Ritz, Stadtarchitekt, Brig-Glis)
 - Vorhersagen und Warnungen vor Unwettern: Unsere heutigen Möglichkeiten (Patrick Hächler, Prognostiker, MeteoSchweiz, Zürich)
 - Klimaänderung und Unwetterereignisse im Alpenraum (Prof. Christoph Schär, Institut für Atmosphäre und Klima der ETH, Zürich)

Session 8: The Mesoscale Alpine Programme (MAP)

Chairperson: Georg Mayr

08:30 - 09:00 8.1 **INVITED PRESENTATION: MAP - Where Do We Stand?**
Bougeault P.

09:00 - 09:15 8.2 **Hydrological Runoff Data and Modelling for the Estimation of Areal Rainfall Volumes in an Alpine Basin**
Ranzi R., B. Bacchi, G. Grossi

Poster Presentation P3

Chairperson: Georg Mayr

09:15 - 09:45 Poster Introduction

- P3.1 **On Resolution of Precipitation Forecasts in Alpine Watershed Modelling**
Ahrens B., A. Beck
- P3.2 **Study on High Waters in the Rivers of Rila Mountain in Bulgaria**
Lizama Rivas B., I. Koleva-Lizama
- P3.3 **Monitoring of Hydrological Parameters on Mountain Area Using Microwave Radiometric Measurements**
Macelloni G., P. Pampaloni, S. Paloscia, E. Santi, R. Ranzi, M. Tomirotti, S. Barontini
- P3.4 **Atmosphere-Ground Monitoring and Modelling of Thaw Processes in Alpine Permafrost Regions**
Hauck C.
- P3.5 **Local Meteorology over a Small Alpine Lake**
de Franceschi M., A. Marzadro, D. Zardi
- P3.6 **Frequency of Dry Spells Defined by Thresholds of Accumulated Potential Evapotranspiration Sums (PETs) in Austria**
Formayer H., S. Eckhardt, M. Lexer, P. Haas
- P3.7 **Climatological Conditions and their Effect on the Vegetation in Bulgarian Alpine Region**
Koleva-Lizama I., B. Lizama Rivas
- P3.8 **Trends of Spring Time Frost Events and Phenological Dates in Central Europe**
Scheifinger H., A. Menzel, E. Koch, Ch. Peter
- P3.9 **Alpine Plant Phenology in Switzerland**
Defila C. et al.
- P3.10 **Seasonal and Inner-Seasonal Variations of Snow/Ice Extent and Cloud Coverage of the Alps as seen from NOAA Operational Satellites Imager**
Becker R.
- P3.11 **Duration of Snow Cover in Switzerland and Austria**
Wielke L-M.
- P3.12 **The Snow Cover Climate in Estonia**
Tooming H.
- P3.13 **Study of the Influences of Geographical Factors and Meteorological Parameters on the Snow Cover Evolution in Romanian Mountainous Basins**
Stancalie G., A. Iordache, S. Catana

- P3.14 **Snow Conditions Variability in the Bulgarian Mountain Regions**
Petkova N., E. Koleva
- P3.15 **Estimation of the Water Equivalent of Snow Cover from the Other Meteorological Measurements**
Nemec L., V. Kveton, I. Setnickova, H. Skachova
- P3.16 **Snow Melt Processes and Runoff Observation in Alpine Environments**
Holzmann H., W. Schöner, H.P. Nachtnebel
- P3.18 **Warm Storms Associated with Avalanches Hazard and Floods in the Andes Mountains**
Vergara J.
- P3.19 **Snow Atmosphere Interaction in Steep Alpine Terrain**
Lehning M., S. Bethke, C. Fierz, O. Martius, N. Raderschall
- P3.20 **Predicting Snow Conditions for the Optimisation of Piste Preparation**
Bethke S., C. Fierz, M. Lehning, O. Martius, H. Rhyner
- P3.21 **Interaction between Climate and Tourism: a Research on Skiability Conditions in Several Skiing Complexes on Piedmontese and Dolomitic Alps**
Fazzini M., S. Fratianni, A. Biancotti, C. Bisci, R. Zasso
- P3.22 **Storms and Floods in the Alpine Region: Towards Combining a Database of Natural Damaging Events and MAP Data for Eight Seasons**
Volkert H., R. Hausmann
- P3.23 **Foehn and Forest Fires in Alpes-Maritimes (South-East of France)**
Carrega P.
- P3.24 **Use of Dynamical Adaptation in Research Impact Studies**
Tudor M.
- P3.25 **Icing Conditions of the Territory of Bulgaria**
Nikolov D.

09:45 - 10:45 Break and Poster Viewing

10:45 - 11:00 Weather Briefing

Session 9: Mountain Hydrology

Chairperson: Roberto Ranzi

- 11:00 - 11:15 9.1 **Towards an Hydrological Qualification of the Simulated Rainfall in Mountainous Areas**
Yates E., S. Anquetin, J-D. Creutin
- 11:15 - 11:30 9.2 **The Role of the Antecedent Soil Moisture Condition on the Distributed Hydrologic Modelling of the Toce Alpine Basin Floods**
Montaldo N., G. Ravazzani, M. Mancini, R. Rosso
- 11:30 - 11:45 9.3 **Hydrological Verification of ECMWF and Limited-Area Model Simulations for the November 1966 Catastrophic Floods in Italy (Florence and Eastern Alps)**
Grossi G., B. Bacchi, R. Ranzi, R. Buizza, S. Uppala, E. Klinker, A. Buzzi, P. Malguzzi
- 11:45 - 12:00 9.4 **Mountain Precipitation and Hydrology in the Middle East**
Smith R.B., J. Evans, R. Oglesby
- 12:00 - 12:15 9.5 **Seasonal Runoff Forecasting Using Model-Assimilated Precipitation Data in Semi-Arid Mountainous Regions**
Schär C., L. Vasilina, F. Pertziger
- 12:15 - 14:00 Lunch Break

Session 10: Societal Impacts

Chairperson: Philippe Bougeault

14:00 - 14:30 10.1 **INVITED PRESENTATION: Designing Flood Forecasting, Warning and Response Systems from a Societal Perspective**
Parker D.

14:30 - 14:45 10.2 **Severe Weather Warnings and Impacts on Politics and Society in Switzerland**
Hächler P.

14:45 - 15:00 10.3 **METEORISK**
Staudinger C.

15:15 Departure for Excursion and Conference Dinner

Session 11: Rotor Dynamics

Chairperson: Rich Rotunno

08:30 - 09:00 11.1 **INVITED PRESENTATION: Rotor Dynamics in the Lee of Three-Dimensional Ridges**
Doyle J.D., D. Durran

09:00 - 09:15 11.2 **Terrain-Induced Rotor Experiment (T-REX)**
Grubisic V., J. Kuettner

Poster Presentation P4

Chairperson: Rich Rotunno

09:15 - 10:00 Poster Introduction

- P4.1 **Rotor Streaming in the Falklands Experiment**
Cardoso R., S.D. Mobbs, R. Burton, S. Vosper
- P4.2 **A Mesoscale Gravity Wave Event During MAP: a Possible Source**
Richiardone R., M. Manfrin, B. Campistron, V. Klaus
- P4.3 **Simulations of the 8 November Gravity Wave Field**
Smith S., A. Brown
- P4.4 **Gravity Wave Breaking over Greenland**
Doyle J.D., M.A. Shapiro, D. Bartells, Q. Jiang
- P4.5 **Mountain Waves Forced by Narrow Topography in the Presence of Vertical Shear**
Doyle J.D., Q. Jiang
- P4.6 **Effect of Surface Condition on Downslope Wind and Mountain Waves**
Sun W.Y., W.R. Hsu
- P4.7 **Numerical Simulations of the MAP IOP 10 Foehn Case in the Rhine Valley**
Zängl G., B. Chimani, C. Häberli
- P4.8 **High Resolution Simulation of the 4D Interaction between the Foehn Air and the Colder Boundary Layer: Impact of a Meso-Beta Analysis and Validation on a Very Well Documented Foehn Event (MAP IOP 15)**
Jaubert G., B. Bénech, H. Berger, B. Chimani, C. Flamant, C. Häberli, M. Nuret, S. Vogt
- P4.9 **Removal of the Cold Air Pool During IOP15 as Seen by a Boundary-Layer-Windprofiler RASS System and Comparison with the Non Hydrostatic Model Meso-NH**
Vogt S., G. Jaubert
- P4.10 **Föhn/Cold-Pool Interactions in the Rhine Valley During IOP 15 of the MAP SOP**
Flamant C., P. Drobinski, B. Bénech, B. Chimani, M. Frioud, M. Furger, C. Häberli, G. Jaubert, M. Lothon, V. Mitev, H. Richner, R. Steinacker, S. Tschannett, S. Vogt
- P4.11 **Spatial Variations of the Boundary Layer Structure in the Rhine Valley**
Baumann-Stanzer K., I. Groehn, M. Piringer
- P4.12 **Variation of the Aerosol Stratification over the Rhine Valley During Foehn Development: a Backscatter Lidar Study**
Frioud M., V. Mitev, R. Matthey, H. Richner, M. Furger
- P4.14 **Some Aspects of Cloudness and of the Current of Clouds on an Alpine Slope**
Werner R.

- P4.15 **VERA-Analyses of MAP-Foehn Cases Compared to MM5-model Results**
Chimani B., R. Steinacker, M. Dorninger, W. Gepp, W. Pöttschacher, M. Ratheiser, S. Tschannett, G. Zängl
- P4.16 **Idealized Numerical Simulations of Flow Splitting at the Bifurcation between Two Valleys**
Drobinski P., S. Bastin, J. Dusek
- P4.17 **Gap Flow in Long Channels**
Gabersek S., D. Durran
- P4.18 **The "Minifoehn" in the Bavarian Isar Valley - Measurements and Modelling**
Hornsteiner M.
- P4.19 **A MAP northerly foehn event on November 8, 1999**
Jiang Q., J.D. Doyle, R.B. Smith
- P4.20 **A Downslope Windstorm in NW Slovenia, on 16.11.2002**
Gabersek S.
- P4.21 **The Wake South of the Alps: Dynamics and Structure of the Lee-Side Flow and Secondary Potential Vorticity Banners**
Flamant C., E. Richard, C. Schär, R. Rotunno, L. Nance, M. Sprenger, R. Benoit
- P4.22 **Secondary Potential Vorticity Banners in MAP IOP8 and IOP 15-Bora**
Grubisic V.
- P4.23 **Differences on Thermodynamic Characteristics due to the Influence of Mountain Olympus over Greece**
Karacostas T., P. Pennas, S. Stolaki, N. Pakalidou
- P4.24 **LIDAR Water Vapor Observations During the IOP 15**
D'Aulerio P., F. Fierli, F. Congeduti, C. Medaglia
- P4.25 **On the Dynamics of the Splitting Process of Cyclones near Southern Greenland**
Kurz M.
- P4.26 **Impact of Greenland on the Downstream Weather**
Ólafsson H.
- P4.27 **Recent Temperature Trends in Mountain Observatories of the Iberian Peninsula**
Rasilla Á., D.G. Codrón, J. Carlos
- P4.28 **The Damping Effect of Greenland on an Extratropical Cyclone**
Petersen G.N., J.E. Kristjánsson, B. Rösting, H. Ólafsson
- P4.29 **The Impact of Upstream Wind Direction on Wake Flow**
Petersen G.N., H. Ólafsson, J.E. Kristjánsson
- P4.30 **A Case Study of the Icelantic Trough**
Rögnvaldsson Ó., H. Ólafsson
- P4.31 **Diurnal, seasonal, and geographical variability of air temperature limits of snow and rain**
Ólafsson H., S.H. Haraldsdóttir
- P4.32 **Observations of Snow in a Windy Climate and Hilly Landscape**
Ólafsson H., S.H. Haraldsdóttir, M.M. Magnússon, M.E. de Vries
- P4.33 **Precipitation Modeling in Complex and Data Sparse Terrain**
Rögnvaldsson Ó., P. Crochet, H. Ólafsson
- P4.34 **The Climate at the High Alpine Observatory Sonnblick (3106 m asl) and its Surroundings**
Auer I., R. Böhm, M. Leymüller, W. Schöner, A. Kaiser, H. Scheifinger, M. Langer, S. Schneider, C. Häberli
- P4.35 **The Temperature Series of Trento: 1816-2002**
Rea R., G. Rampanelli, D. Zardi
- P4.36 **Changes in Winter Temperature at Mountain Stations in Romania and their Relationship with North Atlantic Teleconnection Indices**
Boroneant C., M. Ionita

- P4.37 **Global Joint Reduced Values. Time-Series Analysis of Temperature of Land Air and Sea Surfaces**
Sneyers R.
- P4.38 **Simultaneousness of Two Climatic Elements**
Werner R.
- P4.39 **Carpathian Influences on Local Response to North Atlantic Oscillation**
Bojariu R., D. Matei
- P4.40 **NAO and ENSO Conjugate Effects on the Climate Anomalies in the Carpathian Basin**
Mares I., C. Mares, M. Mihailescu
- P4.41 **Temperature Variability in the Western Carpathians**
Limanówka D.
- P4.42 **Long Range Forecasting in the Mountain and Hill Zones in Romania by Means of an AR-MEM Model**
Mares C., I. Mares
- P4.43 **Hot and Dry Periods in Bulgarian Mountains**
Koleva E.

10:00 - 11:00 Break and Poster Viewing

Session 12: Gravity Waves

Chairperson: Reinhold Steinacker

- 11:00 - 11:15 12.1 **Inversion Effects on Lee-Wave Rotors**
Vosper S., S.D. Mobbs, R. Burton
- 11:15 - 11:30 12.2 **Gravity Wave Breaking over the Central Alps: Role of Complex Topography**
Jiang Q., J.D. Doyle
- 11:30 - 11:45 12.3 **Time-Dependent Mountain Waves and their Interactions with Larger Scales**
Chen C.-C., D. Durran, G. Hakim
- 11:45 - 12:00 12.4 **On the Respective Roles of Wave Breaking and Upstream Blocking in Orographic Wake Formation**
Epifanio C.C., R. Rotunno
- 12:00 - 12:15 12.5b **Performance of a Semi-Implicit, Semi-Lagrangian Dynamical Core for High Resolution NWP over Complex Terrain**
Bonaventura L., D. Cesari

12:15 - 14:00 Lunch Break

Session 13: Gap Winds and Föhn

Chairperson: Philippe Drobinski

- 14:00 - 14:15 13.1 **Rethinking the Level-Flow Paradigm for Strong Gap Winds**
Durran D., S. Gabersek
- 14:15 - 14:30 13.2 **MAP IOP 10 South Foehn Event in the Wipp Valley: Verification of High-Resolution Numerical Simulations with Observations**
Gohm A., G. Zängl, G. Mayr

- 14:30 - 14:45 13.3 **Cross-Valley Dynamics in Gap Flow**
Egger J.
- 14:45 - 15:00 13.4 **Objective High Resolution Cross Section Analysis During FORM**
Tschannett S., R. Steinacker, B. Chimani, M. Dorninger, W. Gepp, C. Häberli, W. Pötschacher, M. Ratheiser
- 15:00 - 15:15 13.5 **Spatial Evolution of Foehn Flows in the Rhine Valley Area: Quantification Using High Resolution Simulations**
Beffrey G., G. Jaubert, A. Dabas
- 15:15 - 15:30 13.6 **North Foehn over the Central Alps During IOP 15 of MAP: Airborne Lidar and In-Situ Data Compared with a High-Resolution Simulation**
Volkert H., C. Kiemle, E. Richard
- 15:30 - 15:45 13.7 **Observations of Foehn Interaction with Lake Breeze and Valley Wind Circulations, Lake Tekapo, New Zealand**
McGowan H.A.
- 15:45 - 16:30 Break and Poster Viewing

Session 14: Synoptic-scale aspects

Chairperson: Hans Richner

- 16:30 - 16:45 14.1 **Greenland and the Northern Hemispheric Winter Circulation**
Petersen G.N., J.E. Kristjánsson, H. Olafsson
- 16:45 - 17:00 14.2 **Sub-Structure of a MAP Streamer**
Liniger M.A., H.C. Davies
- 17:00 - 17:15 14.3 **The Potential Vorticity Streamer over the Alps During IOP 17 of MAP**
Hoinka K.P.
- 17:15 - 17:30 14.4 **Dynamical Aspects of the Formation of a Potential Vorticity Streamer over Europe**
Martius O., C. Schwierz
- 17:30 - 17:45 14.5 **Synoptic Responses to Mountain Gravity Waves Breaking in Fronts**
Lott F.
- 17:45 - 18:00 14.6 **Orographic Influence on Adriatic Vortex Generation**
Ivancan-Picek B., V. Jurcec

Session 15: Mountain Climates

Chairperson: Patrick Hächler

- 08:30 - 09:00 15.1 **INVITED PRESENTATION: Variability of the Alpine Precipitation Climate: A Challenge for Data Analysis and Climate Modeling**
Frei C.
- 09:00 - 09:15 15.2 **Meteorological and Climatic Aspects of River Flood Assessment in Central Europe**
Rudolf B. et al.
- 09:15 - 09:30 15.3 **Mesoscale Patterns of Long-Term Precipitation Variability in the Greater Alpine Region**
Böhm R., I. Auer, W. Ungersböck, W. Schöner, C. Huhle, T. Nanni, M. Brunetti, M. Maugeri, L. Mercalli, M. Gajic-Capka et al.
- 09:30 - 09:45 15.4 **A Climatology of Mesoscale Alpine Phenomena**
Steinacker R., Ch. Lotteraner
- 09:45 - 10:00 15.5 **The Impact of Orographic Precipitation on the Form of Mountain Ranges**
Anders A., G. Roe, D. Durran
- 10:00 - 10:30 Break
- 10:30 - 10:45 Weather Briefing

Session 16: Snow and Glaciers

Chairperson: Yves Duran

- 10:45 - 11:00 16.1 **Climate - Glacier Research: the New 3-D Austrian Glacier Inventory, Volume, Area, Altitude**
Kuhn M., R. Würländer, N. Span
- 11:00 - 11:15 16.2 **Ten Years of Operational Numerical Simulations of Snow and Mountain Weather Conditions and Recent Developments at Météo-France**
Durand Y., G. Guyomarc'h, L. Mérindol, J.-G. Corripio, G. Giraud, E. Brun, E. Martin
- 11:15 - 11:30 16.3 **The GLOWA-Danube Approach to Modelling Snow and Ice in the Alpine Part of the Danube Catchment**
Escher-Vetter H., S. Niemeyer
- 11:30 - 11:45 16.4 **Swiss Alpine Snow Variability: its Links to Large Scale Flow Patterns**
Scherrer S.C., C. Appenzeller
- 11:45 - 12:00 16.5 **Boundary Layer Wind Field and the Associated Snow Transport over a Steep, Snow Covered Mountain Ridge**
Raderschall N., M. Lehning
- 12:00 - 12:15 Closing