



VAO Symposium

13 - 15 March 2018

Venue:

Centre Technique du Papier
Domaine Universitaire
341 rue de la Papeterie
38610 Gières, France

Programme:

Tuesday 13 March 2018

09:00 Arrival, welcome coffee & snacks

10:00 Welcome Notes

Mr. Pierre Mériaux, Grenoble city hall, France (*to be confirmed*)

Prof Patrick Lévy, Université Grenoble Alps, France (*to be confirmed*)

Dr Michel Dietrich, OSUG, France

Dr Christian Barth, Bavarian Ministry of the Environment and Consumer Protection,
Germany

Dr Jirí Buriánek, European Committee of the Regions, Belgium

Prof Michael Rast, ESA/ESRIN, Italy

Dir. Benjamin Einhorn, Alpine Network of Natural Hazards and Risks Prevention, France

Prof Michael Bittner, for the VAO Board

11:00 Panel discussion

11:40 Eagle-Wings

12:15 Lunch and family photo

13:40 Session I: Atmospheric and climatic variability

Session Chair: Michel Dietrich

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- 13:40 **COMPARISON OF TWO HIGH ALPINE CO₂ RECORDS FROM THE JUNGFRAUJOCH AREA (SWITZERLAND)**
Stéphane Affolter, Tesfaye Berhanu, Markus Leuenberger
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- 14:00 **THE JOSEFINA PROJECT: AIR QUALITY MONITORING AND SIMULATION OVER BAVARIA AND SLOVENIA**
Ehsan Khorsandi, Frank Baier, Thilo Erbertseder, Michael Bittner
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- 14:20 **ALPINE HIGH MONITORING STATION IN BELLUNO DOLOMITES OF ITALIAN EASTERN ALPS**
Massimiliano Vardè, Federico Dallo, Jacopo Gabrieli, Warren Cairns, Giulio Cozzi, Paolo Cristofanelli, Francescopiero Calzolari, Paolo Bonasoni, Giuliano Dreossi, Barbara Stenni, Carlo Barbante
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- 14:40 **LOCAL POLLUTION SOURCES AND LOCAL VERTICAL TRANSPORT EFFECTS AT THE JUNGFRAUJOCH, SWITZERLAND (3580 M ASL) AND JUNGFRAU EAST RIDGE (3700 M ASL)**
Nicolas Bukowiecki, Stephan Henne, Martin Steinbacher, Maxime Hervo, Giovanni Martucci, Martine Collaud Coen, Günther Wehrle, Urs Baltensperger, Martin Gysel
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- 15:00 **RENEWED INCREASE IN ATMOSPHERIC METHANE: REVIEW ON RECONCILING SOURCE ATTRIBUTIONS**
Ralf Sussmann
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15:20 Coffee break

15:50 Session I: Atmospheric and climatic variability (cont'd)

Session Chair: Markus Leuenberger

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- 15:50 **MEASUREMENTS OF POTENTIAL ENERGY OF GRAVITY WAVES OVER THE ALPINE REGION**
Sabine Wüst, Carsten Schmidt, Michael Bittner, Jeng-Hwa Yee, Martin G. Mlynczak, James M. Russell
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- 16:10 **EXPLORING THE POTENTIAL OF THE FAIM 1 AIRGLOW OBSERVATION DATASET IN THE ALPINE REGION WITH RESPECT TO ATMOSPHERIC (ACOUSTIC-) GRAVITY WAVES AND INFRASOUND**
Patrick Hannawald, René Sedlak, Carsten Schmidt, Sabine Wüst, Michael Bittner
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- 16:30 **SOME PECULIARITIES OF INTERANNUAL AND LONG-TERM VARIATIONS OF TOTAL OZONE CONTENT OBSERVED AT ABASTUMANI**
Maya Todua, Goderdzi Didebulidze, Tekle Didebulidze
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- 16:50 **SELECTION OF REPRESENTATIVE ATMOSPHERIC DATA FROM CONTINUOUS IN-SITU MEASUREMENT SERIES**
Ye Yuan, Ludwig Ries, Hannes Petermeier, Annette Menzel
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- 17:10 **VARIABILITY OF PLANETARY WAVES AND THEIR POSSIBLE RELATION TO EXTREME TEMPERATURE EVENTS**
Lisa Küchelbacher, Chiara Landrò, Sabine Wüst, Michael Bittner
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- 17:30 **THE RELATIONSHIP OF GRAVITY WAVE AND PLANETARY WAVE ACTIVITY IN THE MESOPAUSE – FIRST INVESTIGATIONS IN THE COURSE OF THE VAO PROJECT VOCAS-ALP**
René Sedlak, Lisa Küchelbacher, Carsten Schmidt, Sabine Wüst, Alexandra Zuhr, Zeliha Yavsan, Ralf Koppmann, Michael Bittner
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- 17:50 **SYNERGY OF RADAR, LIDAR AND IR SPECTROMETRY FOR A CIRRUS CLOUD CLOSURE EXPERIMENT**
Andreas Reichegger, Tobias Zinner, Bernhard Mayer, Markus Rettinger, Hannes Vogelmann, Ralf Sussmann
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18:10 End of Session

19:00 Buffet dinner (Natural history museum of Grenoble)

Wednesday 14 March 2018

09:00 Session I: Atmospheric and climatic variability (cont'd)

Session Chair: Marc Zebisch

09:00 CONTINUOUS GROUND-BASED MEASUREMENTS OF SECONDARY COSMIC RAY NEUTRONS DURING SOLAR CYCLE 24

V. Mares, T. Brall, G. Donth, T. Maczka, W. Rühm

09:20 HALOGENATED GREENHOUSE GASES AT JUNGFRAUJOCH AND ITS ROLE IN THE ADVANCED GLOBAL ATMOSPHERIC GASES EXPERIMENT

Martin K. Vollmer, Stefan Reimann, Matthias Hill, Lukas Emmenegger, AGAGE-Team

09:40 VALIDATION OF THE UFS BONNER SPHERE SPECTROMETER AND MONTE CARLO METHODS AT THE CERN-EU HIGH ENERGY REFERENCE FIELD (CERF)

T. Brall, M. Dommert, W. Rühm, S. Trinl, M. Wielunski, V. Mares

10:00 Session II : Climate impact on Alpine environment, hazards and risks

10:00 THE ROLE OF BIOSPHERE AT HIGH ALPINE OBSERVATORIES

A. Menzel

10:20 SNOW COVER CHARACTERISTICS OF THE ALPS DERIVED FROM MEDIUM RESOLUTION REMOTE SENSING DATA

Dietz, Andreas J.; Zhongyang, Hu

10:40 MULTI-COMPONENTS ENSEMBLES OF FUTURE METEOROLOGICAL AND NATURAL SNOW CONDITIONS IN THE NORTHERN FRENCH ALPS

Deborah Verfaillie, Matthieu Lafaysse, Michel Déqué, Nicolas Eckert, Yves Lejeune, Samuel Morin

11:00 Session Chair: Hans-Werner Jakobi

11:00 PROSNOW – PROVISION OF A PREDICTION SYSTEM ALLOWING FOR MANAGEMENT AND OPTIMIZATION OF SNOW IN ALPINE SKI RESORTS

Morin, Samuel, Carmagnola Carlo Maria, Dubois Ghislain, Batté Lauriane, Bavay Matthias, Bernhardt Matthias, Bray Frédéric, et. al.

11:20 TRAJECTORIES: SOCIAL-ECOLOGICAL TRAJECTORIES OF FRENCH ALPINE VALLEYS UNDER CLIMATE VARIABILITY

Sandrine Anquetin, Nicolas Buclet, Sandra Lavorel, Céline Lutoff, Emmanuelle George, Wilfried Thuiller, Danielle Ziebelin, Clémentine Prieur, Bruno Wilhelm, Charline Giguët-Covex, Bjorn Reineking,, Pierre Judet

11:40 ENVIRONMENTAL SEISMOLOGY AND RFID TECHNOLOGY FOR MOUNTAIN HAZARD MONITORING AND RISK MANAGEMENT

Antoine Guillemot (Stud), Mathieu Le Breton (Stud), Eric Larose, Laurent Baillet, Agnès Helmstetter, Denis Jongmans, Etienne Rey, Fabrice Guyoton, Raphael Mayoraz

12:00 INVOLVEMENT OF THE SOERE CRYOBS-CLIM (CRYOSPHERE, AN OBSERVATORY OF THE CLIMATE – IR OZCAR) IN SNOW AND ICE RELATED HAZARDS PREVENTION IN AN ALPINE CONTEXT

Delphine Six1, Florence Naaim-Bouvet2, P. Schoeneich3, S. Morin4 and CRYOBS-CLIM Team

12:20 RISK @ UNIV. GRENOBLE ALPES: AN INTERDISCIPLINARY PROJECT ON RISK ASSESSMENT AND MANAGEMENT

Sandrine CAROLY, Dominique DAUDON, Philippe GARNIER, Didier GEORGES, Denis JONGMANS, Rémi

KOUABENAN, Didier RICHARD

12:40 **Understanding the response of biodiversity to environmental changes through nested approaches (experiments, observations, modelling)**
Wilfried Thuiller et al.

13:00 Lunch

14:00 Session III: Alpine water cycle Session Chair: Michael Gausa

14:00 **MONITORING ENVIRONMENTAL DYNAMICS IN THE ALPS WITH EARTH OBSERVATION – THE SENTINEL ALPINE OBSERVATORY**
Marc Zebisch, Claudia Notarnicola, Carlo Marin, Mattia Callegari, Felix Greifeneder, Ruth Sonnenschein, Christian Kofler, Stefan Steger, Alexander Jacob

14:20 **Hydrological Monitoring in the Zugspitze Region**
Stefan Weishaupt, Karl-Friedrich-Wetzel

14:40 **OBSERVATION OF CLOUDS WITH A HOLOGRAPHIC IMAGER (HOLIMO) UTILIZING A CABLE CAR AND A TETHERED BALLOON SYSTEM**
Beck A., Ramelli F., Lauber A., Henneberger J., Lohmann U.

15:00 **CLOUD OBSERVATIONS AT UFS SCHNEEFERNERHAUS TOWARDS THE EVALUATION OF SATELLITE OBSERVATIONS AND NUMERICAL WEATHER PREDICTION**
Martin Hagen, Tobias Zinner, Bernhard Mayer, Axel Häring

15:20 **ENHANCED SNOW AND ICE MELT CAUSED BY INCREASING WATER VAPOR CONTENT IN A WARMING ATMOSPHERE**
Markus Weber, Charalampos Charalampidis, and Christoph Mayer

15:40 **SPECIFYING LIGHT ABSORBING PROPERTIES OF FRESH SNOW SAMPLES**
Claudia Linke, Inas Ibrahim, Fritz Waitz, and Martin Schnaiter

16:00 **REMOTE MONITORING OF NEAR REAL-TIME LACIER MASS CHANGES AT SONNBLICK OBSERVATORY**
Bernhard Hynek, Gernot Weyss, Anton Neureiter, Daniel Binder

16:20 Coffee break

16:40 Session IV: Environment and human health Session Chair: Claudia Traidl-Hoffmann

16:40 **EXTREME WEATHER EVENTS AND MENTAL HEALTH**
Bose-O'Reilly Stephan, Mertes Hanna

17:00 **COMPARING ATMOSPHERIC MERCURY DEPOSITION AT ZUGSPITZE TO DEPOSITION RATES IN THE VALLEY AND PRE-ALPINE LOWLAND**
Gabriela Ratz, Korbinian Freier, Matthias Mauder, Till Rehm, Alfred Huber, Christoph Koch, Jürgen Diemer, Michael Gierig

17:20 **BIOCLIS – A BIOCLIMATIC INFORMATION SYSTEM FOR BAVARIA**
Thilo Erbertseder, Michael Bittner, Lisa Mittelstädt, Claudia Traidl-Hoffmann, Stephan Hachinger, Anton Frank

17:40 **EXPOSURE TO AIRBORNE POLLEN AND FUNGAL SPORES IN ALPINE VERSUS URBAN ENVIRONMENTS (INDOORS VS. OUTDOORS, CIRCADIAN PATTERNS AND RELATIONSHIPS WITH SYMPTOMS)**
Claudia Traidl-Hoffmann, Franziska Häring, Gertrud Hammel, Sebastian Bezold, Megan Fleming, Nikolaos Bounas-Pyrros, Katharina Harter, Marianne Thomas, Vivien Leier, Stefanie Gilles, Athanasios Damialis

18:00 Session V: Improving the VAO Infrastructure

18:00 **HARDWARE AND SOFTWARE INFRASTRUCTURE FOR LONG-TERM ENVIRONMENTAL MONITORING AT THE CNR-IDPA COL MARGHERITA ATMOSPHERIC OBSERVATORY (EASTERN DOLOMITES, ITALIAN ALPS)**

Federico Dallo, Jacopo Gabrieli, Massimiliano Vardè, Warren Cairns, Giulio Cozzi

18:20 **IMPROVING THE INFRASTRUCTURE FOR EARTH OBSERVATION, ACTIONS AND UPDATES FROM THE SENTINEL ALPINE OBSERVATORY AT EURAC RESEARCH**

Jacob, A., Marin, C., Monsorno, R., Ventura, B., Vianello, A., Costa, A., Zebisch, M., Notarnicola, C.

18:40 **AUTOMATIC PROCESSING OF ESSENTIAL CLIMATE VARIABLES RECORDED AT MOUNTAIN ATMOSPHERIC OBSERVATORIES**

P. Cristofanelli, L. Naitza, T. C. Landi, F. Roccatò, D. Putero, F. Calzolari, A. Marinoni, P. Bonasoni, C. Barbante, J. Gabrieli, M. Vardè, F. Dallo, M. Bencardino, P. Di Carlo, F. Apadula, D. Heltai, A. Lanza, A. Disarra, D. Sferlazzo

19:00 End of session

Thursday 15 March 2018

09:00 Session VI: European initiatives for data collection (overview of ESFRI roadmap; ACTRIS, AnAEE/eLTER, ICOS and EPOS Research Infrastructures)
Session Chair: Thomas Popp

09:00 **VAO-ENVRI, TOWARDS A WIN-WIN STRATEGY FOR A REGIONAL COORDINATION**

Paolo Laj

09:30 **THE RESEARCH INFRASTRUCTURE EPOS AND ITS POTENTIAL TO IMPROVE OUR KNOWLEDGE OF THE DEFORMATION OF THE ALPS**

Anne Socquet

09:50 **THE LTZER ZONE ATELIER ALPES AND ITS CONTRIBUTION TO THE EUROPEAN RESEARCH INFRASTRUCTURE ELTER**

Philippe Choler et. al.

10:10 **NOEMA – AN ASTRONOMICAL INFRASTRUCTURE IN THE FRENCH ALPES**

Karl Schuster et. al.

10:30 Session V: Improving the VAO Infrastructure (cont'd)

10:30 **ALPENDAC – AN ENVIRONMENTAL COMPUTING PLATFORM: THE IT INFRASTRUCTURE BEHIND THE SCENES**

Helmut Heller, Stephan Hachinger, Julian Meyer-Arnek, Christoph Harsch, Anton Frank, Oleg Goussev, Roland Mair, Till Rehm, Bianca Wittmann, Michael Bittner

10:50 **ALPENDAC – THE ALPINE ENVIRONMENTAL DATA ANALYSIS CENTRE 2017/18**

Stephan Hachinger, Julian Meyer-Arnek, Helmut Heller, Christoph Harsch, Anton Frank, Oleg Goussev, Roland Mair, Till Rehm, Bianca Wittmann, Michael Bittner

11:10 **ALPENDAC – SERVICES FOR SCIENCE: SCIENTIFIC HIGHLIGHTS AND SUCCESSES**

Julian Meyer-Arnek, Stephan Hachinger, Helmut Heller, Christoph Harsch, Anton Frank, Oleg Goussev, Roland Mair, Till Rehm, Bianca Wittmann, Michael Bittner

11:30 Poster Exhibition (author attendance) and Coffee (Session I – VI)

I	ANALYSIS OF TRANSPORT AND SOURCE CONTRIBUTIONS TO ALPINE CO₂ CONCENTRATIONS BASED ON BACK TRAJECTORIES <i>Esther Giemsa, Jucundus Jacobeit, Ludwig Ries, Stephan Hachinger</i>
I	PARALLEL MEASUREMENT OF 222RN AT ENVIRONMENTAL RESEARCH STATION SCHNEEFERNERHAUS AND AT RIDGE <i>Ludwig Ries, Gabriele Frank, Josef Salvamoser, Lena Zoor, Ye Yuan</i>
I	REGIONAL CLIMATE MODELLING <i>Hubert Gallée</i>
I	VARIABILITY OF STABLE ISOTOPES IN PRECIPITATION AT SONNBLICK OBSERVATORY (3.106 M ASL) IN COMPARISON WITH WALS ISOLAB (446 M ASL) <i>Höfer-Öllinger, Giorgio, Ludewig, Elke</i>
I	SEASONAL CYCLE IN "NEAR BASELINE" CO₂ AND O₂ AT JUNGFRAUJOCH <i>Markus C. Leuenberger, Franz Conen</i>
I	ON THE WAY TO AUTOMATED LIDAR REMOTE SENSING AT UFS <i>Hannes Vogelmann, T. Trickl, M. Perfahl</i>
I	RESULTS OF THE ZUGSPITZE RADIATIVE CLOSURE EXPERIMENT FOR QUANTIFYING WATER VAPOR ABSORPTION OVER THE TERRESTRIAL AND SOLAR INFRARED <i>Ralf Sussmann, Andreas Reichert, Markus Rettinger</i>
I	AlpClimNet: A Network for Climate Protection in the Alpine Space <i>Elena Kalusche, Michael Bittner</i>
II	SNOW COVER DYNAMICS IN THE EUROPEAN ALPS DERIVED FROM MEDIUM RESOLUTION EARTH OBSERVATION IMAGERY <i>Zhongyang Hu, Andreas J. Dietz, Claudia Kuenzer</i>
III	IMPACT OF CHANGING GLACIER GEOMETRY ON MASS LOSS IN A WARMING CLIMATE <i>Charalampos Charalampidis, Ludwig Braun, Andrea Fischer, Michael Kuhn, Astrid Lambrecht, Christoph Mayer, Konstantinos Thomaidis, and Markus Weber</i>
III	MONITORING ALPINE CRYOSPHERE USING SATELLITE DATA <i>Carlo Marin, Mattia Callegari, Claudia Notarnicola, Marc Zebisch</i>
III	RAIN/SNOW RADAR REMOTE SENSING IN THE ALPS: THE GRENOBLE EXPERIMENT <i>Guy Delrieu, Frédéric Cazenave and Brice Boudevillain</i>
IV	CEILOMETER MEASUREMENTS IN THE EASTERN ALPINE REGION <i>Christoph Lotteraner, Kathrin Baumann-Stanzer</i>
IV	EVALUATION OF WRF-CHEM FORECASTS BASED ON POLLUTION MEASUREMENTS AT MOUNTAIN TOPS <i>Claudia Flandorfer, Florian Geyer, Kathrin Baumann-Stanzer</i>
IV	DAILY CHRONIC INTERMITTENT HYPOBARIC HYPOXIA DOES NOT INDUCE CHRONIC INCREASE IN PULMONARY ARTERIAL PRESSURE <i>Jeremias Götschke, Pontus Mertsch, Nikolaus Kneidinger, Diego Kauffmann-Guerrero, Jürgen Behr, Rudolf Maria Huber, Frank Reichenberger, Katrin Milger</i>
IV	EXTREME WEATHER EVENTS IN THE ALPINE SPACE – CONSEQUENCES ON INFRASTRUCTURAL SUPPLY AND ON PATIENTS IN AMBULANT (INTENSIVE) CARE (A PLANNED PROJECT) <i>Susanne Kutzora, Manuela Sirrenberg, Stefanie Heinze, Hanna Mertes, Stephan Bose-O'Reilly, Caroline Herr</i>
IV	SEASONAL, DAILY AND ALTITUDINAL VARIATION OF PRIMARY BIOLOGICAL AEROSOL OCCURRENCES AT MOUNT SONNBLICK OBSERVATORY, AUSTRIA, 3106 MASL <i>Nora Els, Karoline Wiesinger, Christina Schweighofer, Tamara Schober, Birgit Sattler</i>
V	VALIDATION OF REMOTE SENSING DATA ON WET SNOW WITH IN SITU MEASURED LIQUID WATER CONTENTS OF THE ALPINE SNOWPACK FOR THE PREDICTION OF SNOWMELT AND MASS TRANSPORT PROCESSES <i>Kerstin Hürkamp, Carlo Marin, Mattia Callegari, Claudia Notarnicola, Giacomo Bertoldi, Stephan Hachinger, Julian Meyer-Arnek, Jochen Tschiersch</i>
V	THE WORLD DATA CENTRE FOR CLIMATE AS MODEL DATA PROVIDER <i>Frank Toussaint, Michael Lautenschlager</i>

13:30 Lunch

14:30 Proposal Preparation Meetings

In light of upcoming third party funding opportunities, the VAO community shall discuss possible contributions. Based on the challenges described in the VAO strategy paper (available from the VAO web site) potential project ideas shall be presented and prepared (splinter meetings)

Topics announced so far:

- 1) Aerosols / UAV and Satellites (Thomas Popp)
- 2) Satellite Validation (Frank Baier)
- 3) Atmospheric Dynamics & Extreme Weather (Sabine Wüst)
- 4) Environment & Health (Thilo Erbertseder)

15:30 Report from proposal preparation meetings

16:00 End of symposium

16:30 -17:30 Closed meeting of the VAO board
