Monday, 28 September 2009

07:00 Speakers Breakfast
Location: Kongress Hotel

08:30 Opening
Avalanche case studies
Location: Plenary
Chair: Richard Marriott

08:40 Mitigating the avalanche hazard on the Milford Road, New Zealand
Wayne Carran, Ann Carran, Howard B. Conway

09:00 “The White Death” in Quebec since 1825: from awareness of the problem to risk management
Dominic Boucher, Bernard Hétu

09:20 The challenges for Scottish avalanche forecasters observing a maritime snowpack
Mark John Diggins

09:40 The avalanche events of December 2008 in Ceresole Reale (Piedmont Western Italian Alps)
Margherita Maggioni, Angelo Caimi, Danilo Godone, Michele Freppaz, Andrea Bertea, Marco Cordola, Maria Cristina Prola, Valerio Bertoglio

10:00 Experiences arising from the Belalp avalanche in the canton of Valais, Switzerland
Peter Schwitter, Lukas Stoffel

10:20 Coffee break
Location: Foyer

Properties of snow
Location: Plenary
Chair: Hansueli Gubler

10:50 Faceted melt forms, a deadly and unpredictable weak layer
Bill Glude

11:10 Temperature gradient metamorphism is not a classical coarsening process
Bernd Pinzer, Martin Schneebeli

11:30 In-situ measurements and temporal evolution of the thermal conductivity profile of an alpine snowpack
Samuel Morin, Florent Domine, Laurent Arnaud, Ghislain Picard, Hans-Werner Jacobi, Jean-Marie Willemet

11:50 Numerical investigation of factors causing near-surface metamorphism
Andrew Edward Slaughter, Edward E. Adams

12:10 Measurements of weak snowpack layer friction
Alec van Herwijnen, Joachim Heierli

12:30 Lunch break

Snowpack properties and spatial variations
Ort: Plenary
Chair: Jerome B. Johnson

14:00 Modeling variation of surface hoar and radiation recrystallization across a slope
Edward E. Adams and 11 others

14:20 Tracking changes in buried melt freeze crusts
Michael Andrew Smith, Bruce Jamieson

14:40 Numerical modeling of liquid water movement in snow cover
Hiroyuki Hirashima, Satoru Yamaguchi, Atsushi Sato

15:00 Understanding snow transport processes shaping the mountain snow cover
Rebecca Mott, Michael Schirmer, Thomas Grünwald, Michael Lehning

15:20 Temporal changes in slope-scale spatial variability: Implications for avalanche forecasting
Karl W. Birkeland, Eric Lutz, Kalle Kronholm, Spencer Logan, Kathy Hansen Crawford

15:40 Coffee break
Location: Foyer
Observations of sintering over two seasons in a mountain snowpack
Edward H. Bair, Jeff Dozier, Robert E. Davis, Thomas U. Kaempfer, Michael T. Colee, Randall Mielke, Jane Blackford

Measuring thermal conductivity of snow: the problem with needle probes
Fabienne Riche, Bernadette Koehle, Martin Schneebeli

A new device to acquire high-resolution vertical profiles of snow specific surface area

Force-controlled shear experiments with layered snow samples
Ingrid Reiweger, Robert Ernst, Jürg Schweizer, Jürg Dual

SPA – Snowpack analyzing system
Reinhard Fiel, Wolfram Sommer, Thomas Rentsch

Systematic assessment of new snow settlement in SNOWPACK
Walter Steinkogler, Charles Fierz, Michael Lehning, Friedrich Obleitner

Aerodynamic and surface characteristic lengths of snow covered flat planes
Christof Gromke, Michele Guala, Benjamin Walter, Costantino Manes, Michael Lehning

Granular phase transition in depth hoar and facets: A new approach to snowpack failure?
Duclos Alain, Stéphane Caffo, Marc Bouissou, Jane Blackford, François Louchet, Joachim Heierli

Comparison of shock waves provoked by various artificial avalanche release techniques, and of their effects on the snowpack
Philippe Berthet-Rambaud

Snow-profiling at Weissfluhjoch
Roland Meister

Measurement of dynamic water-entry value for dry snow
Takafumi Katsushima, Satoru Yamaguchi, Toshiro Kumakura, Atsushi Sato

Measuring the water retention curve of snow
Satoru Yamaguchi, Takafumi Katsushima, Atsushi Sato, Toshiro Kumakura

Wet snow diurnal evolution and stability assessment
Frank Techel, Christine Pielmeier
Observations and analysis of two large wet-snow avalanche cycles  
Christoph Mitterer, Rebecca Mott, Jürg Schweizer

Snow pit measurements interpretation for snow stability evaluation  
Pavel Chernous, Yuri Fedorenko, Alexander Bozhinsky, Nikolay Barashev

Extended column test versus compression test and rutblock test: comparison of methods to assess snowpack stability in Aosta Valley (NW – Italy)  
Elisabetta Ceaglio, A. Obert, M. Freppaz, M. Maggioni, E. Zanini

SNOWPACK software application and comparison with hand-collected snow profiles in Aosta Valley (NW-Italy)  
Elisabetta Ceaglio, C. Cappelletti, P. Dellavedova, M. Freppaz, M. Maggioni, V. Segor, E. Zanini

Validation of the SNOWPACK model in the Dolomites  
Fabiano Monti, Anselmo Cagnati, Charles Fierz, Michael Lehning, Andrea Pozzi, Mauro Valt

Fracture line profiles in Japan  
Shinji Ikeda

Avalanche triggering by sound: myth and truth  
Benjamin Reuter, Jürg Schweizer

Where to dig? – On optimizing sampling strategy  
Sascha Bellaire, Jürg Schweizer

Spatially predicting surface hoar crystal size in sparse forests using shading in satellite imagery  
Cora Shea, Bruce Jamieson

Snow and avalanche: the influence of forest on snowpack stability  
Davide Viglietti, Stephanie Letey, Renzo Motta, Margherita Maggioni, Michele Freppaz

Blowing snow measurements: Comparison between different sensors and back analysis of drifting snow events at Lac Blanc pass  
Florence Naaim-Bouvet, Hervé Bellot, Mohamed Naaim, Christophe Genthon

Online NWP-model data as boundary conditions for snow drift simulation  
Simon Schneiderbauer, Stefan Pirker

Analysis of temporal and spatial snow depth changes in a steep rock face  
Vanessa Wirz, Michael Schirmer, Michael Lehning

Terrestrial laser scanning for snow depth observations: An update on technical developments and applications  
Alexander Prokop

The influence of aspect on physical and chemical properties of the snow cover in a basin on the Monte Rosa Massif (North-western Italian Alps)  
Antoine Brulport, Margherita Maggioni, Michele Freppaz, Gianluca Filippa, Emil Squinobal

Chemical and mineralogical properties of dust layers in alpine snowpack (Aosta Valley, North-western Italian Alps)  
Elisabetta Ceaglio, Eleonora Bonifacio, Michele Freppaz, Gianluca Filippa, Ermanno Zanini

Major element chemistry of inner-alpine snowpacks, Aosta Valley (NW Italian Alps)  
Gianluca Filippa, Michele Freppaz, Mark W. Williams, Ermanno Zanini

Snow quality in a large city: the case of Turin (NW-Italy)  
Davide Viglietti, Mattia Biasoli, Gianluca Filippa, Michele Freppaz, Jacopo Gabrieli, Carlo Barbante, Ermanno Zanini
Tuesday, 29 September 2009

07:00  Speakers Breakfast
Location: Kongress Hotel

08:30  Avalanche formation and snow stability evaluation
Location: Plenary
Chair: Alain Duclos
08:30  Slab avalanche release models, and their relevance to the practitioner
Blair Fyffe
08:50  The effect of solar warming on snowpack creep
Thomas Exner, Bruce Jamieson
09:10  Glide avalanche response to extreme rain-on-snow event, Snoqualmie Pass, Washington, USA
John Stimberis, Charles Rubin
09:30  Validating the Propagation Saw Test on the slope scale
Cameron Ross, Bruce Jamieson
09:50  Regional stability evaluation with modelled snow cover data
Michael Schirmer, Jürg Schweizer, Michael Lehning

10:10  Coffee break
Location: Foyer

10:40–12:20
Poster Session 2: Avalanche forecasting, avalanche dynamics and protection measures
Location: Plenary / Foyer
Chair: Ross Purves

Early warnings for extreme snowfall in the Swiss Alps
Patrick Hächler, Daniel Gerstgrasser
Regional avalanche warning in Norway, a new concept for a large country
Christian Jaedicke, Steinar Bakkehøi, Frode Sandersen, Kjetil Brattlien, Anders Solheim
The lower Austria Avalanche Warning Service – the youngest in the Alps
Arnold Studeregger, Hannes Rieder, Fritz Salzer
Styrian avalanche service – danger scale 5 – more than 200 avalanches
Arnold Studeregger, Hannes Rieder

A new iconographic avalanche bulletin for the Catalan Pyrenees: a beginning for a future avalanche forecasting database
Glòria Martí, Jordi Pujol, Jorge Fleta, Carles Garcia, Pere Oller, Olga Costa, Pere Martinez

Analyzing the environmental effects on the danger of avalanches using geoinformation technology
Gerald Gruber, Andreas Hecke, Alfred Wieser

Integration of the snowdrift modelling into the French operational chain for avalanche hazard forecasting
Gilbert Guyomarch, Yves Durand, Gérald Giraud

Estimating the success of artificially triggering avalanches with the combination of cluster and discriminant analysis
Reinhard Fromm

Common information platform for natural hazards in Switzerland
Ingo Petzold, Peter Binder, Cyril Perot, Hans Romang, Manfred Spreeáfico, Sabina Steiner, Jakob Rhyner

Using LIDAR (Light Distancing and Ranging) data to more accurately describe avalanche terrain
Christopher Michael McCollister, Robert Howard Comey

Using high resolution LIDAR data to estimate potential avalanche release areas on the example of Polish mountain regions
Paweł Chrustek, Piotr Wężyk

Avalanche outline mapping with a digital GPS camera
Roland Meister, Patrik Jeller

Detecting snow avalanches with seismic stations in North-East Italy: first results of dataset analysis
Mauro Valt, Damiano Pesaresi

Dendrochronological reconstruction of spatial and temporal patterns of snow avalanches in the Patagonian Andes
Alejandro Casteller, Ricardo Villalba, Veronika Stöckli

Documentation and analysis of avalanche events
Siegfried Sauermoser, Hannes Hübl

Snow and weather conditions study for the avalanches on the Lautaret pass road (French Alps)
Daniel Goetz
French avalanche research: Experimental test sites
Xavier Ravanat, Frédéric Ousset

Density measurements in snow avalanche flow
Betty Sovilla, Martin Kern, Marius Schaefer, Michel Louge

Comparison and complementarities of avalanche pressure measurements: piezo-electric load cells and deformation based pressure deconvolution
Djebar Baroudi, Betty Sovilla, Emmanuel Thibert

Automatised range-gated Doppler radar measurements of a spontaneously released avalanche at the Vallée de la Sionne test site
Lambert Rammer, Helmut Schreiber, Martin Hiller, François Dufour, Betty Sovilla, Peter Gauer, Martin Kern

High-speed video recording in snow chute experiments
Marius Roman Schaefer, Martin Kern

Scaled laboratory experiments on the evolution of fluidised avalanches
Josef Koegl, Armin Graf, Lambert Rammer, Karl Kleemayr, Martin Kern, Peter Gauer, Gerhard Kapeller, Markus Aufleger

Fundamental studies on applications of MPS method for computing snow avalanches
Tatsuya Otsuka, Yasuyuki Shimizu, Ichiro Kimura, Masaya Otsuki, Yoshihiko Saito

Discrete element modelling to compute drag coefficients of obstacles impacted by granular flows
Lionel Favier, Dominique Daudon, Frederic Donze, Jacky Mazars

A granular shear model for dense avalanche flows: Simulation of the Vallée de la Sionne CB 1 avalanches Nos. 509, 816 and 917 with RAMMS
Perry Bartelt, Marc Christen

Dynamic avalanche modeling in natural terrain
Jan-Thomas Fischer, Julia Kowalski, Shiva P. Pudasaini, Stephen A. Miller

Statistical avalanche run-out modeling using GIS on selected slopes of Western Tatra Mountains
National park, Slovakia
Marek Biskupic, Ivan Barka

Regional methods for snow avalanche prediction: the case of Italian Alps
Daniele Bocchiola

CLPA – Reflection on the quality of the testimonies collected during a field investigation
Romain Gaucher, Mylene Bonnefoy, Xavier Pasquier-Bernachot

Definition of hazard zones for dense snow avalanches
Paolo Scotton, Francesca Moro, Stefano De Toni, Daniele Dalla Valle, Irene Vigni

The solid ortho-image: a new tool to identify avalanche terrains
Danilo Godone, Margherita Maggioni, Michele Freppaz

The current state of avalanche risk analysis and hazard mapping in Uzbekistan
Eleonora Semakova, Sergey Myagkov, Richard Armstrong

First experiences in applying the “Swiss Guideline to account for avalanche hazard of ropeways in ski areas”
Mark Schaer, Stefan Margreth

Finite element models and sensitivity analysis of the vulnerability of an avalanche protection gallery
Dominique Daudon, Juliene Baroth, Patrycja Szczurowska, Ma Ying, Pascal Perrotin

Three years snow net project Hafelekarspitze/Innsbruck
Lambert Rammer, Matthias Granig

Avalanche risk in a changing climate – Development of a landslide and avalanche risk model
Heidi K. Bjordal, Jan Otto Larsen

Avalanche protection for construction site
Thomas Rentsch, Ruedi Stüssi

Avalanche problems, their effects on roads and ski resort planning studies in Sivrikaya Ovit mountain pass in eastern Black Sea region of Turkey
Omer Murat Yavas, Gökhan Arslan, Zafer Yazıcı, Sinan Demir

Web-based tool to support local avalanche services with hazard evaluation and documentation
Sibylle Möhle, Lukas Stoffel

Evaluation of avalanche warning strategies for traffic routes using signal detection theory
Christoph Matthias Rheinberger, Jakob Ryhiner

A new evaluation tool for of the exposure to the avalanche risk for the roads
François Rapin, Philippe Bouvet
Experiences on a storm causing avalanche cycles in south-west Norway
Njål Farestveit, Sara Skutlaberg

Avalanche risk management along roads – Case study of Highway 15 “Strynefjellet”, Norway
Michael Bründl, Krister Kristensen

Handling of avalanche risk for the “Bonaigua” and “Beret” roads, Aran valley, Spain
Jordi Gavaldà, Ivan Moner

Total safety in mountain passes
Jürg Rocco

Artificial avalanche release above settlements
Lukas Stoffel, Stefan Margreth

Ten years of experience with the Wyssen Avalanche Tower
Samuel Wyssen

12:30 Lunch break

14:00–17:30

Workshop 1: Avalanche education
Location: Plenary
Chair: Stephan Harvey

14:00 Overview of methods for risk assessment and decision making in avalanche terrain
Practical risk assessment and decision making in avalanche terrain. An overview of concepts and tools in Switzerland
Stephan Harvey, Paul Nigg
Gestion du risque d’avalanche par les français, professionnels ou amateurs
Alain Duclos
Tools for risk assessment and decision making in Canada
Chris Stethem
Rules, knowledge, distance and intuition – the development of risk management skills for decision-making in avalanche situations
Jan Mersch, Wolfgang Behr

15:30 Coffee break
Location: Foyer

16:00 Human factors
How do leadership styles cope with the impact of human factors in decision making in risky terrain?
Miriam Förster
Human factors in avalanche accidents: Evolution and interventions
Ian McCammon

16:45 Panel Discussion
“To go or not to go?”
13:45–18:00

**Workshop 2: Artificial avalanche release**
Location: Ski area Jakobshorn
Chair: Lukas Stoffel

13:45 Meeting point: base station of the Jakobshorn gondola

14:30 Outline of explosive control measures
Vali Meier

14:55 Artificial avalanche release to protect traffic routes and trails – case study of the Gonda avalanche path, Lavin, Switzerland
Jörg Kindschi

15:20 Coffee break

15:40 Control measures at the Jakobshorn winter sports resort in Davos
Daniel Kistler

16:05 Introduction Daisy Bell
Ernesto Bassetti

16:20 Demonstration Daisy Bell
Artificial avalanche release methods at the Jakobshorn ski area

17:25 Return to the base station of the Jakobshorn gondola

14:00–17:30

**Workshop 3: Quantitative stratigraphy**
Location: Studio
Chair: Martin Schneebeli

14:10 Quantitative measurement of micro-scale, layered, and bulk snow properties using micro-penetrometry and a physical interpretation theory
Jerome B. Johnson

14:50 Snow characterization by optical properties
Mathias Alexander Gergely, Martin Schneebeli, Kurt Roth

15:30 Non-destructive quantification of snowpack properties
Achim Heilig, Hans Peter Marshall, Olaf Eisen, Martin Schneebeli

16:00 Coffee break

16:15 Open discussion on future developments in quantitative stratigraphy and needs for avalanche forecasting and snow science
Martin Schneebeli

17:00 Instrument demonstrations by participants of the workshop
Martin Schneebeli
Wednesday, 30 September 2009

07:00  Speakers Breakfast  
Location: Kongress Hotel

Avalanche Forecasting  
Location: Plenary  
Chair: Patrick Nairz

08:30  Simple calculations of avalanche risk for backcountry skiing  
Bruce Jamieson, Jürg Schweizer, Cora Shea

08:50  The seismic detection of avalanches: an information tool for the avalanche forecaster  
Jean-Pierre Navarre, Ekaterina Bourova, Jacques Roulle, Yannick Deliot

09:10  Use of the models Safran-Crocus-Mepra in operational avalanche forecasting  
Cécile Coléou, G. Giraud, Y. Danielou, J.-L. Dumas, C. Gendre, E. Pougatch

09:30  The 2008–2009 exceptional snowfalls in the Italian Alps: threshold sum approach and analysis of the SNOWPACK model stability indices  
Fabiano Monti, Anselmo Cagnati, Mauro Valt

09:50  EVALUATION: Estimating the economic value of the avalanche bulletin  
Anna Alberini, Andrea Leiter, Christoph Rheinberger, Chuck McCormick, Andrew Mizrahi

10:10  Coffee break  
Location: Foyer

10:40–12:30  
Poster Session 3: Avalanche education, avalanche rescue, remote sensing, impact of climate change  
Location: Plenary / Foyer  
Chair: Chris Stethem

My career as a researcher  
Werner Munter

Avalanche hazard and visitor numbers – a study in Lochaber, Scotland  
Graham Moss

Information value of the avalanche bulletin for snowsports  
Chris Semmel, Florian Hellberg, Paul Mair

Intuition, recognition and patterns – decision-making by mountain guides in avalanche situations  
Jan Mersch, Anton Kühberger

Safety is Freedom  
Henry Schniewind

Avalanche education as public service  
Klaus Kranebitter

Improving avalanche decision strategies – A proposal  
Eike Roth

On superiority of simple solutions to complex problems and other fairy tales  
Bob Uttl, Jan Uttl

Pitfalls in the analyses of accident records: The meaning of missing values  
Bob Uttl, Kelly Kisinger

Avaluator’s obvious clues prevention values are inflated: Evidence from Canadian avalanche accidents  
Bob Uttl, Kelly Kisinger, Mekale Kibreab, Jan Uttl

Trend Analysis of Canadian avalanche accidents: The Avaluator avalanche accident prevention card has not reduced the number of accidents  
Bob Uttl, Mekale Kibreab, Kelly Kisinger, Jan Uttl

Coupling snow survey and education in the Mont Mars Natural Reserve, Aosta Valley (NW Alps)  
Gianluca Filippa, Michele Freppaz, Davide Viglietti, Pietro De Poi

Importance and effects of avalanches to mountaineering activities: Alamountains case study – Turkey  
Nehir Varol, Sinan Demir, Mete Erengil, Zafer Yazici, Mehmet Coskun, Ömer Murat Yavas

Iron man, the steel crash test dummy, measures forces in an avalanche  
Michael J. Jenkins, Timothy M. Samaras

1985–2009 twenty-five years of avalanche accidents in Italy  
Mauro Valt, Igor Chiambretti, Renato Zasso

Map localization of avalanche accidents in France  
François Rapin, Frédéric Jarry, Michael Deschatres
Avalanche scenario with double burial
Othmar Hauer, Markus Eck, Michael Schober

Updating and expansion of a field study to optimize the search strip width of avalanche beacons
Marcellus Schreilechner, Markus Eck, Michael Schober

Searching in parallel: Taking advantage of multiple searchers in a transceiver rescue
Bruce Edgerly, Dieter Stopper, Franz Hohensinn

Remote activation of avalanche survival gear
Julia Schmiededer, Peter Aschauer, Manuel Genswein

High resolution imaging for environmental monitoring applications
Matthias Keller, Mustafa Yücel, Jan Beutel

The PermaSense remote monitoring infrastructure
Jan Beutel, Stephan Gruber, Stefanie Gubler, Andreas Hasler, Matthias Keller, Roman Lim, Igor Talzi, Lothar Thiele, Christian Tschudin, Mustafa Yücel

Swiss Experiment – Providing diverse snow research data sets when and where they are needed
Nick Dawes, Michael Lehning, Mathias Bavay, Marc Parlange, Karl Aberer

SensorWebEnablement – Standards and open source implementations for observation data
Stefanie Andrae, Gerald Gruber, Andreas Hecke, Alfred Wieser

Measurements of small scale spatial and temporal variability of snow depth and SWE in a small mountain catchment
Thomas Grünewald, Michael Schirmer, Michael Lehning

Snowpack depth modelling and water availability from LIDAR measurements in eastern Pyrenees
Ignacio Moreno, Antoni Ruiz, Jordi Marturià, Pere Oller, Jordi Piña, Carles García, Pere Martinez, Julià Talaya

Innovative devices for the SWE estimation at the basin scale: a field study in the Western Alps
Barbara Frigo, Germain Bal, Ivan Bevilacqua, Edoardo Cremonese, Paola Della Vedova and 7 others

Satellite observed SCA and gamma distributed snow in the HBV model
Thomas Skaugen, Frode Randen

Snow cover monitoring and modeling in the Alps using multi temporal MODIS data
Philipp Rastner, Luca Irsara, Thomas Schellenberger, Stefano Della Chiesa, Giacomo Bertoldi, Stefano Endrizzi, Claudia Notarnicola, Marc Zeisch

Snow simulation and forecasting through all Norway: the SeNorge model
Stefano Endrizzi, Thomas Skaugen

Towards a 25 year snow cover time series over the European Alps derived from NOAA AVHRR satellite data
Fabia Huesler, Stefan Wunderle

Automated detection and mapping of rough snow surfaces including avalanche deposits using airborne optical remote sensing
Yves Bühler, Andreas Hüni, Marc Christen, Roland Meister, Tobias Kellenberger

Trends in annual maximum snow water equivalent in South-Norway (1915-2008)
Heidi Bache Stranden, Thomas Skaugen

Recent snow cover variations and avalanche activities in the Southern Alps
Mauro Valt, Daniele Moro, Renato Zasso, Paola Cianfarra

Results of 50 years of climate reanalyses in the French Pyrenees (1958–2008) using the SAFRAN and CROCUS models
Malou Maris, Gerald Giraud, Yves Durand, Jean-Pierre Navarre, Laurent Merindol

12:30 Lunch break
14:00–17:30  
**Workshop 4: Avalanche forecasting**  
Location: Plenary  
Chair: Christine Pielmeier

**Main challenges and problems in forecasting**
Main challenges and problems in forecasting the avalanche danger for the Swiss Alps  
Thomas Stucki  
Rain-on-snow avalanches: forecasting the return to stability  
Howard B. Conway, Wayne Carran, Ann Carran  
Evolving public uses and the general avalanche forecast  
Bob Comey, Chris McCollister  
Reaching avalanche-unaware users in Utah, U.S.A.  
Bruce Tremper

**Snowpack observations**
Significance of the simplified Rutschblock test for avalanche warning in Bavaria  
Georg Kronthaler  
Relevance of the snow cover stability test ECT for avalanche forecasting in Switzerland  
Kurt Winkler  
Key field observations for supplementing and localizing the avalanche danger rating  
Bruce Jamieson

15:30  
**Future avenues**
Interpretation of prevalent avalanche scenarios on the basis of the anticrack model  
Stephan Harvey, Joachim Heierli  
Mind or machine? – numerical avalanche forecasting  
Michael Lehning  
Avalanche patterns as aid in avalanche forecasting  
Patrick Nairz

16:40  
**Panel Discussion**

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14:00–17:30  
**Workshop 5: Snow as a resource**  
Location: Pisch  
Chair: Hansueli Rhyner

14:05  
Climate change and snow reliability  
Christian Rixen

14:25  
Adaptation strategies in Zermatt  
Christen Baumann

14:45  
Optimisation of snow production with the use of continuous snow height measurements  
Jean-Christophe Loubier

15:05  
SkiSim – A tool to assess the impact of climate change on ski season length and snowmaking  
Robert Steiger

15:30  
Coffee break

16:00  
On the salting of the Horstman Glacier in Whistler, BC and how the salting affects the meltwater and downstream environment  
Nicolas Teichrob

16:20  
Snowfarming – preserving snow over the summer – a worthwhile practice?  
Norbert Gruber

16:45  
**Panel Discussion**
Thursday, 1 October 2009

07:00  Speakers Breakfast
Location: Kongress Hotel

Avalanche dynamics and hazard mapping
Location: Plenary
Chair: Margherita Maggioni

08:30  Alpha-Beta model: Can we learn more from the statistical avalanche model with respect to the dynamical behavior of avalanches
Peter Gauer, Steinar Bakkehoi, Karstein Lied, Kalle Kronholm

08:50  In-situ and photogrammetric measurements of avalanche crown transects
Edward Hamilton Bair, Karl Birkeland, Jeff Dozier

09:10  Wireless sensors as a tool to explore avalanche internal dynamics: experiments at the Weissfluhjoch snow chute

09:30  Wet snow avalanche impact pressures
Betty Sovilla, Martin Kern, Mark Schaer

09:50  Avalanche hazard investigations, zoning, and ordinances, Utah, Part 3
David A. Scroggin

10:10  Coffee break

Avalanche protection measures
Location: Plenary
Chair: François Rapin

10:40  Investigation on the effectiveness of the catch-fence “Snowcatcher” as avalanche protection system
Lambert Rammer, Gernot Stelzer, Martin Kern

11:00  PROTECT – A Swiss approach to the assessment of the effectiveness of mitigation measures
Stefan Margreth, Hans Romang

11:20  Actions of snow avalanche on the snow shed
Ying Ma, Emmanuel Thibert, Pascal Perrotin, Michel Mommessin

11:40  Avalanche forecasting for road construction sites at 70 degrees north in Norway
Ole-André Helgaas

12:00  Evolution of avalanche risk reduction on the Alaska Railroad
David Hamre

12:20  Lunch break

14:00–18:00

Workshop 6: Avalanche rescue
Location: Plenary

14:00  Opening
Bruno Durrer, Manuel Genswein

14:05  Introduction
Chair: Jakob Rhyner
Update on hypothermia and medical on-site triage of avalanche victims
Bruno Durrer
Course curriculum for avalanche rescuers
Manuel Genswein
Emergency checklists for first responders
Walter Würtl
Avalanche accidents amongst ski patrollers: outlook and evolution
Jean-Louis Tuaillon

14:55  Triage
Chair: J. Boyd
Medical triage workshop for first responders
Bruno Durrer

15:35  Coffee break

15:55  Probing strategies
Chair: Manuel Genswein
3-hole-step method with alternative procedures
Albert Lunde
Benefit vs. costs of alignment procedures in probe lines
Christophe Boloyan
Probing perpendicular to the snow surface – Considerations about probing strategies
Bruno Jelk

16:50  Risk management
Chair: Hans-Jürg Etter
Making hard decisions in avalanche rescue
Krister Kristensen
Risk assessment for rescue missions
Andres Bardill
Risk management in avalanche rescue
Reto Keller

17:40  Introduction ICAR
Toni Grab, Hans-Jürg Etter, Bruno Jelk, Bruno Durrer

17:55  Closing remarks
14:00–17:30

**Workshop 7: Avalanche dynamics**

Location: Pischa  
Chairs: Stefan Margreth, Betty Sovilla

**Introduction Part 1: Current 2D-3D avalanche dynamics models in Europe**  
Betty Sovilla

Avalanche modelling with RAMMS (Switzerland)  
Marc Christen, Julia Kowalski, Perry Bartelt

Avalanche dynamics simulation with SAMOS-AT  
Peter Sampl, Matthias Granig

A review of existing 2D-3D snow avalanche models at Cemagref, France  
Mohamed Naaim

Identification of areas potentially affected by extreme snow avalanche combining expert rules, flow-routing algorithms and statistical analysis  
Matteo Pagliardi, Massimo Barbolini, Paolo Corradeghini, Francesco Ferro

15:30 Coffee break

**Introduction Part 2: Practical application of avalanche dynamics models**  
Stefan Margreth

Findings on the use of RAMMS for avalanche computing in connection with hazard mapping in Chile  
Lukas Stoffel

Experiences in avalanche assessment with the powder snow avalanche model SamosAT  
Matthias Granig, Peter Sampl, Christian Tollinger, Philipp Jörg

2D modeling of Icelandic snow avalanches for hazard zoning  
Eirikur Gislason

Using AVAL-1D to simulate avalanches in eastern Pyrenees  
Pere Oller, Marc Janeras, Hèctor de Buén, Georgina Arñó, Marc Christen, Carles Garcia, Pere Martinez

Panel discussion with presenters and audience  
Betty Sovilla, Stefan Margreth

09:15–16:45

**Workshop 8: Bauen im Permafrost**

Ort: Studio  
Chair: Philipp Teysseire

09:15 Begrüssungskaffee

09:45 Begrüssung und Einführung  
Rolf Keiser

10:00 Bauen im Permafrost: ein praxisorientierter Leitfaden  
Christian Bommer, Marcia Phillips

10:40 Naturgefahren im Hochgebirge  
Hugo Raetzo

11:00 Geotechnische Eigenschaften von Permafrostböden  
Lukas Arenson

11:20 Permafrostkartierung und praktische Anwendung  
Felix Keller

11:40 Permafrosterkundung Messmethoden  
Bernhard Krummenacher

12:00 Mittagessen

13:00 Geologische Herausforderungen im Gebirgspereafrost, Überwachung  
Hans Rudolf Keusen

13:20 Laboruntersuchungen von Permafrostböden  
Sarah Springman

13:40 Permafrost im steilen Fels  
Jeannette Nötzli, Andreas Hasler, Stephan Gruber

14:00 Verankerungsmethoden im Gebirgspereafrost  
Hanspeter Bonetti

14:20 Modellieren von Wärmeflüssen zwischen Bauten und Permafrostböden  
Lukas Arenson

14:40 Kaffeepause

15:10 SAC Hütten und Wege im Permafrost  
Reto Jenatsch

15:30 Ein bewegliches Bergrestaurant im Permafrost  
Markus Walser

15:50 Bergbahnen im Permafrost  
Urs Dietrich

16:10 Sanierung Eissporthalle Schluefweg, Kloten  
Peter Sturzenegger

16:30 Zusammenfassung und Schlusswort  
Charly Wuilloud
Friday, 2 October 2009

07:00  Speakers Breakfast  
Location: Kongress Hotel  

**Decision making and avalanche education**  
Location: Plenary  
Chair: Walter Würtl  

08:30  Adolescents’ perceptions of snow avalanches  
Armin Rempfler  

08:50  The Nivocheck  
Werner Munter  

09:10  On probabilities of avalanches triggered by alpine skiers. An empirically driven decision strategy for backcountry skiers based on these probabilities  
Christian Pfeifer  

09:30  Will a guest ever be able to save your live?  
Manuel Genswein  

09:50  Avalanche survival strategies for different parts of a flowing avalanche: Practical experience from a guide’s perspective  
Theo Meiners, Karl W. Birkeland, Perry Bartelt  

10:10  Coffee break  
Location: Foyer  

**Outlook and future developments**  
Location: Plenary  
Chair: Krister Kristensen  

10:40  Assessing the impact of climate change on snow avalanche activity in France over the last 60 winters using change point models  
Nicolas Eckert, Eric Parent, Mohamed Naaim  

11:00  Could retrieval of snow layer formation by optical satellite remote sensing help avalanche forecasting? Presentation of first results  
Rune Solberg, Regula Frauenfelder, Hans Koren, Kalle Kronholm  

11:20  Mobile information systems for avalanche topics  
Christoph Suter, Stephan Harvey  

11:40  Risk communication and political decision making – Management of natural hazards in the Canton of Grisons  
Christian Wilhelm  

12:00  Forecasting Challenges in Utah, U.S.A.  
Bruce Tremper  

12:20  Closing Remarks