

## Detailed program

### Monday, October 7, Orals

#### Avalanche hazard forecasting

Session Chair: Bruce JAMIESON

8:00 **Welcome address:**

Jean FAURE, Rich MARRIOTT, Jürg SCHWEIZER  
Michel DESTOT

8:30 **On estimating avalanche danger from simulated snow profiles (O1-01)**

Sascha BELLAIRE, Bruce JAMIESON

8:45 **Towards a new chain of models for avalanche hazard forecasting in French mountain ranges, including low altitude mountains (O1-02)**

Matthieu LAFAYSSE, Samuel MORIN, Cécile COLÉOU,  
Matthieu VERNAY, Damien SERÇA, François BESSON,  
Jean-Marie Géraud GIRAUD, Yves DURAND

9:00 **SNOWPACK: where do we stand today? (O1-03)**

Charles FIERZ, Mathias BAVAY, Nander WEVER,  
Michael LEHNING

9:15 **Verification of SNOWPACK model in the Western Caucasus, Russia, for spatial snow cover stability assessment (O1-04)**

Elena KLIMENKO

9:30 **Identification of slushflow situations from high resolution weather models (O1-05)**

Christian JAEDICKE, Øyvind ARMAND-HØYDAL

#### 9:45 Morning break

#### Crisis management, avalanche accidents and rescue; Managing snow

Session Chair: Dale ATKINS

10:15 **The role of the chief of operation during a large-scale avalanche disaster**

**Le rôle du chef des opérations lors d'une avalanche d'envergure (O1-06)**

Blaise AGRESTI

10:30 **Avalanche crisis management (not including outdoor activities): New practical guide to the attention of mayors and municipal services; Guide pratique à l'intention des élus et des services communaux pour la gestion d'une crise avalanche, hors activités sportives (O1-07)**

Océane VIBERT, François RAPIN, Jean-Pierre REQUILLART

10:45 **Avalanche rescue and mission risk in Norway (O1-08)**

Albert LUNDE, Krister KRISTENSEN

11:00 **Local triage in multiple burial situations and how to minimize injuries during excavation (O1-09)**

Manuel GENSWEIN

11:15 **The use of an avalanche triage form during on field management of a multiple-victim avalanche situation (O1-10)**

Marc BLANCHER, Alex KOTTMANN, Herman BRUGGER

11:30 **Impacts of artificial snow in mountain tourist resorts and in mountain hydrosystems: The Avoriaz (France) and Champéry (Switzerland) resorts;**

**L'enneigement artificiel et ses impacts au sein d'une station de ski et de son hydrosystème de montagne. Le cas des stations d'Avoriaz (France) et de Champéry (Suisse) (O1-11)**  
Élodie MAGNIER

11:45 **Will there (still) be snow for the upcoming winter holidays?**

**Y aura-t-il (encore) de la neige pour les prochaines vacances scolaires ? (O1-12)**

Samuel MORIN, Cécile COLÉOU, Matthieu LAFAYSSE,  
Yves LEJEUNE

#### 12:00 Lunch

#### Avalanche protection, artificial release and mitigation strategies

Session Chair: Ulrik DOMAAS

13:20 **Assessing weak layer failure and changes in snowpack properties due to avalanche control by explosives (O1-13)**

Stephan SIMIONI, Benjamin REUTER, Jürg SCHWEIZER

13:35 **Artificial avalanche release and the probability of triggering secondary avalanches (O1-14)**

Lukas STOFFEL, Stefan MARGRETH

13:50 **Design and Construction of Snow Supporting Structures for the Milepost 151 Avalanche, Jackson, Wyoming (O1-15)**

Joshua HEWES, Scott MERRY, Rand DECKER

14:05 **Influence of upstream catching dam slope on powder avalanche (O1-16)**

Paolo CACCAMO, Florence NAIM-BOUVET, Thierry FAUG

14:20 **Analysis of the residual risk under a national forest of protection against avalanches and measures of management;**

**Analyse du risque résiduel à l'aval d'une forêt domaniale de protection contre les avalanches et mesures de gestion (O1-17)**

Stéphane ROUDNITSKA, Didier CORNEVIN

#### 14:35 Afternoon break and posters

#### Avalanche dynamics and hazard mapping

Session Chair: Karl KLEEMAYR

16:10 **The process of plume formation in a powder snow avalanche (O1-18)**

Perry BARTELT, Yves BÜHLER, Othmar BUSER,  
Christian GINZLER

- 16:25 **Thermal energy in snow avalanches (O1-19)**  
Walter STEINKOGLER, Betty SOVILLA, Tobias JONAS, Michael LEHNING
- 16:40 **Wind and snow particle distribution in powder snow cloud (O1-20)**  
Yoichi ITO, Kouichi NISHIMURA, Florence NAAIM-BOUVET, Hervé BELLOT, Xavier RAVANAT, Emmanuel THIBERT
- 16:55 **Influence of summer and winter surface topography on numerical avalanche simulations (O1-21)**  
Margherita MAGGIONI, Eloïse BOVET, Yves BUEHLER, Danilo GODONE, Perry BARTELT, Michele FREPPAZ, Bernardino CHIAIA
- 17:10 **Systematic practical evaluation of snow entrainment with the avalanche simulation model SamosAT (O1-22)**  
Matthias GRANIG, Philipp JOERG, Jan-Thomas FISCHER
- 17:25 **Avalanche Hazard Mapping Plan for the Pyrenees of Catalonia (O1-23)**  
Pere OLLER, Marc JANERAS, Olga COSTA, Carles GARCÍA-SELLÉS, Elena MUNTÁN, Glòria MARTÍ, Pere MARTÍNEZ

## Monday, October 7, Posters 14:35 - 16:10

### Avalanche hazard forecasting

- P1-01 **Weather preceding deep slab avalanches**  
Michael CONLAN, Bruce JAMIESON
- P1-02 **Can favourable conditions for full-depth dry-snow avalanches be identified by modelling snow?**  
Peut-on identifier des conditions favorables au départ d'avalanches de plaques de fond en neige sèche par la modélisation de la neige ?  
Gilles BRUNOT, Matthieu LAFAYSSE, Cécile COLÉOU, Samuel MORIN
- P1-03 **Toward better decision tools for the management of frequent avalanches**  
Valerio SEGOR, Luca PITET, Eloïse BOVET, Paola DELLAVEDOVA, Walter STEINKOGLER, Jochen VEITINGER, Margherita MAGGIONI, Maria-Cristina PROLA, Betty SOVILLA
- P1-04 **Winter types and snow avalanche activity along the Bâlea glacial valley - Făgăraș massif (Southern Carpathians)**  
Mircea VOICULESCU, Dana MICU, Alexandru ONACA, Patrik CHIROIU, Narcisa MILIAN
- P1-05 **How big is big: Results of the avalanche size classification survey**  
Ivan MONER, Sara ORGUÉ, Jordi GAVALDÀ, Montse BACARDIT
- P1-06 **The influence of weather on glide-snow avalanches**  
Lisa DREIER, Sebastian FEICK, Stephan HARVEY, Christoph MITTERER
- P1-07 **Automatic classification of manual snow profiles by snow structure**  
Frank TECHEL, Christine PIELMEIER
- P1-09 **New tool for avalanche forecasting in Krkonoše Mountains**  
Jirka PAVLÁSEK, Új } à[ ÁXÚÓVÉBA[ ÁTÓQVÉZÉ Ž& [ | ÁTÚVÓÉZúçà, Á ÚXÒÙ/ ÉSA[ ÁÓTÓŠ
- P1-10 **Integration of a drifting snow scheme in the French operational modelling for avalanche risk forecasting: evaluation by avalanche forecasters**  
Daniel GOETZ, Vincent LATU, Gilbert GUYOMARC'H, Yves DURAND, Gérald GIRAUD, Jean-Marie WILLEMET
- P1-11 **Modeling a fluid / solid phase transition in snow weak layers. Application to snow avalanche release**  
François LOUCHET, Alain DUCLOS, Stéphane CAFFO
- P1-12 **NAVAL: a computer-based tool for avalanche risk scenarios definition**  
Massimiliano BARBOLINI, Francesco STEFANINI
- P1-13 **The expert tool XGEO and its applications in the Norwegian avalanche forecasting service**  
Emma BARFOD, Rune ENGESET, Karsten MÜLLER, Tuomo SALORANTA, Jess ANDERSEN, Nils Kristian ORTHE, Tore HUMSTAD
- P1-14 **Numerical slushflow release diagnostics in the Khibiny Mountains. Some results**  
Pavel CHERNOUS, Olga TYAPKINA, Evgeny MOKROV
- P1-15 **Single and mass avalanching; Similarity of avalanching in space**  
Pavel CHERNOUS
- P1-16 **Avalanche Warning Service without Frontiers in the Karavanks along the Slovenian - Austrian border**  
Arnold STUDEREGGER, Arnulf WURZER, Hannes RIEDER, Andreas RIEGLER, Willi ERTL, Manca VOLK, Jaka ORTAR
- P1-17 **Analysis of detected avalanches by using meteorological data of nearby monitoring stations in Ischgl**  
Arnold STUDEREGGER, Lisa JÖBSTL, Arnulf WURZER, Daniel STOCK
- P1-18 **Avalanche Hazard in the Mountain Regions of Kazakhstan**  
Viktor BLAGOVECHSHENSKIY, Vitaliy ZDANIV
- P1-19 **National Avalanche Warning Service for Norway - Established 2013**  
Rune ENGESET

## Detailed program

- P1-20 **Report from the first operational winter of the Norwegian Avalanche Center**  
Karsten MÜLLER, Solveig KOSBERG, Markus LANDRØ, Rune ENGESET
- P1-21 **Key to success for the Norwegian Avalanche Center: Merging of theoretical and practical knowhow**  
Solveig KOSBERG, Karsten MÜLLER, Markus LANDRØ, Rune ENGESET, Ragnar EKKER
- P1-22 **The Norwegian Public Roads Administration's role as a major contributor and end user of the new Norwegian avalanche bulletin**  
Njål FARESTVEIT, Julie BJØRLIEN, Jens TVEIT
- P1-24 **Forecasting forest avalanches: A review of winters 2011/12 - 2012/13**  
Michaela TEICH, Frank TECHEL, Peter BEBI
- P1-25 **Formation of ice upon the snow;  
Formation de glace vive sur la neige**  
Dominique VRECOURT
- P1-26 **Ground slab of dry snow coming from cracks;  
Plaque de fond en neige sèche à partir de fissures**  
Frédéric CABOT
- P1-27 **Ram profiles: utility and limits, future evolution;  
Les sondages de battage : utilité et limites, évolution future**  
Jean-François QUINIOU, Jean-Luc MAGDINIER, Frédéric LASSUS, Bernard LARAT, Caroline KUCHARSKI
- P1-28 **An energy balance based index to forecast wet-snow avalanche activity**  
Christoph MITTERER, Frank TECHEL, Charles FIERZ, Jürg SCHWEIZER
- P1-30 **A relative difference approach to detect potential weak layers within a snow profile**  
Fabiano MONTI, Jürg SCHWEIZER
- P1-31 **Snow profile visualizations to highlight structural instability conditions**  
Fabiano MONTI, Jürg SCHWEIZER
- P1-32 **MISTA - The first numerical model to the quantitative definition of the dangers steps (EURO-Skala)**  
**MISTA - Erstes numerisches Modell zur quantitativen Definition der Gefahrenstufen (EURO-Skala)**  
Werner MUNTER
- P1-34 **Recommendation on how avoid Interference Issues in companion and organized avalanche rescue**  
Manuel GENSWEIN, Dale ATKINS, Joe OBAD, Emily GRADY, Marc PICHÉ, Todd GUYN, Rob WHELAN
- P1-35 **What's to be done after a crisis?  
Que faire après une crise ?**  
Paul BONHOMME, Denis CRABIERES, Bruno PELLICIER, Christian TROMMSDORF
- P1-36 **Integrated management and participative approach (participative mapping 3D) on an avalanche prone territory: How to develop a collective understanding of the vulnerability and of the organization of isolation**  
Vincent BOUDIÈRES, Amandine CREVOLIN, Pauline TEXIER
- P1-37 **Full neurological Recovery of two avalanche victims from prolonged burial and hypothermia cardiac arrest after extracorporeal rewarming**  
Yvonnick BOUÉ, Marc BLANCHER, Jean-Pierre TORRES, Julien BRUN, Christophe BROUX, France ROCOURT, Raphael BRIOT, Jean-François PAYEN, Vincent DANIEL
- P1-38 **The 23 years trend of avalanche deaths in Japan: from 1990/91 to 2012/13**  
Azusa DEGAWA, Yusuke HIROTA
- P1-39 **Specificity of the general mountain medicine  
Spécificité de la médecine générale de Montagne**  
Jean-Baptiste DELAY
- P1-40 **Creation of a «Reference table for ski patrolman» in winter sports resort allowing the first recourse medicine organization: Orientation of the wounded persons for the ski runs services**  
**Création d'un «Référentiel pisteur» en station de sports d'hiver permettant l'organisation des soins de premiers secours : orientation des blessés des services des pistes**  
Patrick JOUBERT
- P1-41 **Avalanches induced by earthquake in North Tochigi prefecture on 25 February 2013**  
Hiroki MATSUSHITA, Shinji IKEDA, Yasuhiko ITO, Masaru MATSUZAWA, Hiroshi NAKAMURA
- P1-42 **Legal aspects of mountain's accidents and forensic investigations**  
**Implications juridiques des accidents en montagne et investigations médico-légales**  
François PAYSANT, Frédérique FIECHTER-BOULVARD, Florian GRENIER, Virginie SCOLAN
- P1-43 **Wave of avalanche disasters in response to colonization: a century of statistics from the world's deadliest avalanche-prone islands**  
Evgeny A. PODOLSKIY, Kaoru IZUMI, Vladimir E. SUCHKOV, Nicolas ECKERT

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### Crisis management, avalanche accidents and rescue; Managing snow

- P1-08 **Avalanche accidents in Switzerland - Trends and patterns in the last 20 years**  
Frank TECHEL, Benjamin ZWEIFEL

- P1-44 **The residents' evacuations due to the avalanches risk during the winter 2012-2013 in France**  
François RAPIN
- P1-45 **In 2013, are the successive probe lines always a necessary trouble?**  
En 2013, les vagues de sondage sont-elles un mal nécessaire ?  
Pascal SANCHO
- P1-46 **Avalanche accidents documentation is of fundamental importance to understand the dynamics, taking place on the snow, of risk activities in order to implement the best prevention strategies**  
Mauro VALT, Stefano PIVOT
- P1-47 **A very fatal winter in Troms, Norway / Special avalanche condition - and the Tromdalen fatal avalanche**  
Ragnar GLOMSETH
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- Avalanche protection, artificial release and mitigation strategies**
- P1-48 **Reforestation against the avalanches for the protection of roads in Savoy (France)**  
Reboisement paravalanche pour la protection des routes en Savoie  
Gaëlle BOURGEOIS
- P1-49 **Management of the avalanche risk on the secondary roads of Savoy (France)**  
Gestion du risque avalancheux sur les routes départementales de Savoie  
Gaëlle BOURGEOIS, Alain DUCLOS, Stéphane CAFFO
- P1-50 **Wooden sleeves to prevent from snow creeping phenomena in Brévent**  
Mise en place de rondins pour le traitement du phénomène de reptation au Brévent  
Fanny BOURJAILLAT, Jean-Pierre VEILLARD, Pascal GENIN, Philippe BERTHET-RAMBAUD
- P1-51 **Avalanche barriers in the starting zone exposed to rock fall: Range of capacity and 1:1 rockfall tests with flexible snow nets**  
Rico BRAENDLE, Eberhard GROENER, Stefan MARGRETH
- P1-53 **Evolution of explosives and safety improvement in the avalanche**  
Évolution des explosifs et amélioration de la sécurité dans le déclenchement préventif des avalanches  
Vincent COSTECALDE
- P1-54 **Cornice release by helicopter**  
Traitement des corniches par hélicoptère  
Bruno FARIZY, Alessandro PROLA
- P1-55 **Quantitative snow avalanche risk assessment with reliability-based vulnerability relations**  
Philomène FAVIER, Nicolas ECKERT, David BERTRAND, Mohamed NAAIM
- P1-56 **Sure mining industry in Los Andes (Chile)**  
Protection de l'industrie minière dans les Andes  
Pablo GALLEGUILLOS
- P1-57 **Application in North Western America of snow nets designed according to the «Swiss guidelines»**  
Alberto GRIMOD, Roberto CASTALDINI
- P1-58 **Experiences from a heavy avalanche season 2013, caused by a weak snow layer, and leading to several road closures in Northern Norway**  
Silje HAALAND, Ole-André HELGAAS, Jeanette KVALVÅGNES
- P1-59 **Avalanche forecasting and warning for specific objects**  
Krister KRISTENSEN, Hedda BREIEN, Suzanne LACASSE
- P1-60 **Home protection against snow avalanches and falling rocks: mixed barriers**  
Julien LORENTZ, Benoit BOUTILLIER
- P1-61 **Artificial avalanche release as a protection measure for major roads: the case study of road S.S. 21 «Colle della Maddalena» (CN, Western Italian Alps)**  
Margherita MAGGIONI, Vagliasindi MARCO, Theodule ALEX, Levera ELENA
- P1-62 **Works in wintry mountain for the rehabilitation of a pressure pipe: organization of the avalanche safety for the staff and for the installations**  
Travaux en montagne hivernale pour la réhabilitation d'une conduite forcée : organisation de la sécurité avalanche pour le personnel et pour les installations  
Daniel MARIETIS, Bruno GAMBIEZ, Alain DUCLOS
- P1-63 **Snow nets: feedback from the RTM department for the definition of maintenance instructions; Filets paravalanches : un retour d'expérience du service RTM pour la définition de consignes de maintenance**  
Rémy MARTIN
- P1-64 **Improvement and tracking of avalanches helicopter triggering**  
Optimisation et traçabilité dans le cadre d'un PIDA avec déclenchements hélicoptés  
Jean-Marc NEUVILLE, Prola ALESSANDRO

- P1-65 **Vulnerability of a reinforced concrete wall loaded by a snow avalanche: experimental testing and FEM analysis**  
**Vulnérabilité d'un mur en béton armé sollicité par une avalanche de neige : test expérimental et analyse par la méthode des éléments finis**  
Isabelle OUSSET, David BERTRAND, Michaël BRUN, Ali LIMAM, Mohamed NAAIM
- P1-66 **Feedback on the site snow racks Oz-en-Oisans (French Alps)**  
**Retour d'expérience sur le chantier de claies paravalanches de Oz-en-Oisans (38)**  
Philippe ROBIT, Nicolas VILLARD
- P1-67 **Automatic detection of avalanches using infrasound and seismic signals**  
Andreas SCHIMMEL, Johannes HÜBL
- P1-68 **Avalanche protection dam of Cialancier in Saint Etienne de Tinée : from 2D digital modeling to the start of the onsite work**  
**Tourne paravalanche du Cialancier à Saint-Etienne-de-Tinée (06) : du dimensionnement par modélisation numérique 2D à la réalisation des travaux**  
Vincent SEGEL, Stéphane ROUDNISKA, Mohammed NAAIM, Edith MICHEL-VILLAZ, Mathieu SCHMITT, Thierry EME
- P1-69 **Road network management in the context of natural hazards: a decision-aiding process based on multi-criteria decision making methods and network structural properties analysis**  
Jean-Marc TACNET, Eric MERMET, Ekaterina ZADONINA, Jean-Christophe DISSART, Michael DESCHATRES, Sylvain LABBÉ
- P1-70 **Wet snow instabilities - Multiple approaches to lift the veil**  
Thomas WIESINGER, Stefan KOCH, Martin OBERHAMMER, Johann SEIWALD

## Tuesday, October 8, Orals

### Global snow properties and drifting snow

*Session Chair: Kouichi NISHIMURA*

- 8:00 **Uncut Column Stability Tests for Hard Slab Snow Climates (O2-01)**  
Wesley FARNSWORTH, Markus ECKERSTORFER, Ron SIMENHOIS, Hanne H. CHRISTIANSEN
- 8:15 **On how to measure snow mechanical properties relevant to slab avalanche release (O2-02)**  
Benjamin REUTER, Martin PROKSCH, Henning LÖWE, Alec VAN HERWIJNEN, Jürg SCHWEIZER
- 8:30 **Influence of slab tensile strength and weak-layer spatial variations on slab tensile failure propensity (O2-03)**  
Johan GAUME, Guillaume CHAMBON, Nicolas ECKERT, Mohamed NAAIM
- 8:45 **Integration of a drifting snow scheme in the French operational modelling for avalanche risk forecasting: validation over 10 years (O2-04)**  
Gilbert GUYOMARC'H, Yves DURAND, Gérald GIRAUD, Florence NAAIM-BOUVET
- 9:00 **Double measurements of snow depths: innovation for better management of avalanche risk in real time on the roads of Savoy (France); Double mesures de hauteurs de neige : une innovation pour mieux gérer le risque d'avalanche en temps réel sur les routes de Savoie (France) (O2-05)**  
Gaëlle BOURGEOIS, Alain DUCLOS, Stéphane CAFFO
- 9:15 **Intermittent drifting snow - combining experimental and model studies (O2-06)**  
Stefan HORENDER, Christine GROOT ZWAFTINK, Charles FIERZ, Michael LEHNING
- 9:30 **Exploring Snow Surface Morphology of the Seasonal Snowpack in the Alaskan Arctic with a Terrestrial LiDAR (O2-07)**  
Simon FILHOL, Matthew STURM, Christopher POLASHENSKI

### 9:45 Morning break

### Instrumentation, monitoring and remote sensing

*Session Chair: Alexandre PROKOP*

- 10:15 **The cosmic ray snow gauge : a decade of snow water equivalent monitoring in the French Mountain ranges (O2-08)**  
Frédéric GOTTARDI, Emmanuel PAQUET, Paul CARRIER, Marie-Thérèse LAVAL, Joë GAILHARD, Rémy GARÇON



- 10:30 **CS725, an accurate sensor for the snow water equivalent (SWE) and soil moisture (SM) measurements (O2-09)**  
Yves CHOQUETTE
- 10:45 **The relationship between the near-infrared reflectance of snow and its water content (O2-10)**  
Satoru YAMAGUCHI, Hiroki MOTOYOSHI, Teruo AOKI, Tomonori TANIKAWA, Akihiro HACHIKUBO
- 11:00 **Innovative methods for high-resolution and quantitative snowpack stratigraphy; Méthodes innovantes pour la stratigraphie quantitative et à haute résolution du manteau neigeux (O2-11)**  
Ghislain PICARD, Laurent ARNAUD, Quentin LIBOIS, Nicolas CHAMPOLLION, Carlo CARMAGNOLA, Samuel MORIN, Benoit MONTPETIT
- 11:15 **Comparing different MODIS snow products with distributed simulation of the snowpack in the French Alps (O2-12)**  
Marie DUMONT, Luc CHARROIS, Pascal SIRGUEY, Samuel MORIN, Matthieu LAFAYSSE, Fatima KARBOU
- 11:30 **Motion detection in seasonal snow cover; Détection des mouvements à la base du manteau neigeux saisonnier (O2-13)**  
Marcos VALCARCEL, Pedro CARRERA-GÓMEZ
- 11:45 **Measuring acoustic emissions in an avalanche starting zone to monitor snow stability (O2-14)**  
Ingrid REIWEGER, Jürg SCHWEIZER

## 12:00 Lunch

### Instrumentation, monitoring and remote sensing

*Session Chair: Alexandre LANGLOIS*

- 13:20 **NIVEXC: an electronic snow-pole for real-time monitoring of avalanche starting zones (O2-15)**  
Massimiliano BARBOLINI, Matteo BAUDONE, Francesco FERRO, Laura RICCHETTI
- 13:35 **Using time-lapse photography in avalanche research (O2-16)**  
Alec VAN HERWIJNEN, Nicole BERTHOD, Ron SIMENHOIS, Christoph MITTERER
- 13:50 **Remote sensing of avalanches using SAR and UAV-borne sensors in northern Norway (O2-17)**  
Markus ECKERSTORFER, Eirik MALNES, Yngvar LARSEN, Stian SOLBØ, Rune STORVOLD, Regula FRAUENFELDER, Árni JÓNSSON, Rune ENGESET
- 14:05 **Monitoring snowpack properties using passive microwave remote sensing data (O2-18)**  
Fatima KARBOU, Eric BRUN, Samuel MORIN, Marie DUMONT, Yves DURAND

- 14:20 **The new snow water equivalent in the Canadian Land Data Assimilation System based on improved modeling and on the assimilation of space-based data (O2-19)**

Nathalie GAUTHIER, Stéphane BÉLAIR, Chris DERKSEN, Bernard BILODEAU, Marco CARRERA, Libo WANG

## 14:35 Afternoon break and Posters

### Avalanche dynamics and hazard mapping

*Session Chair: Perry BARTELT*

- 16:10 **Why don't avalanche-dynamics models of higher complexity necessarily lead to better predictions? (O2-20)**  
Christophe ANCEY
- 16:25 **Impulse water wave generation by a snow avalanche: CFD and two shallow layers models (O2-21)**  
Mohamed NAAIM
- 16:40 **Integrating gaming technology to map avalanche hazard (O2-22)**  
Donna DELPARTE, Michael PETERSON, John PERKINS, Jahrain JACKSON
- 16:55 **Validating a relationship between avalanche runout distance and frequency (O2-23)**  
Alexandra SINICKAS, Bruce JAMIESON
- 17:10 **The historical investigation as a tool to improve the hazard maps: the case study of the historical avalanche of Avieil (Valle d'Aosta - Italy) (O2-24)**  
Andrea DEBERNARDI, Simone ROVEYAZ, Elisabetta CEAGLIO, Valerio SEGOR
- 17:25 **Avalanche hazard mapping in Kazakhstan (O2-25)**  
Viktor BLAGOVECHSHENSKIY, Tamara GULYAYEVA

## Tuesday, October 8, Posters 14:35 - 16:10

### Instrumentation, monitoring and remote sensing

- P2-01 **SnowMonit - Winner of GMES Best service challenge 2012**  
Francesco BARTOLI
- P2-02 **The snow and weather observation network of the Valle d'Aosta Region (NW Italian Alps)**  
Giovanna BURELLI, Barbara FRIGO, Paola DELLAVE DOVA, Valerio SEGOR
- P2-03 **Monitoring snowfall events in Lombardia, Italy, by specialized observers network and advanced remote sensing systems**  
Orietta CAZZULI, Roberto GRIMALDELLI, Lorenzo CRAVERI, Roberto CREMONINI

## Detailed program

- P2-04 **Detecting precipitation events by in situ measurements in Antarctica**  
**Mesures in situ des précipitations en Antarctique**  
Luc PIARD, Cyril PALERME, Christophe GENTHON, Hervé BELLOT, Charles AMORY
- P2-05 **Challenges and benefits of continuous weather soundings on a gondola during the FIS Alpine World Ski Championships 2013 in Schladming/ Austria**  
Arnulf WURZER, Hannes RIEDER, Christian PEHSL, Arnold STUDEREGGER
- P2-06 **Applicability of the INCA model for the spatial representation of fresh snow in the Karawank Alps**  
Arnulf WURZER, Hannes RIEDER, Arnold STUDEREGGER, Miha PAVSEK, Jaka ORTAR, Manca VOLK, Bric VASJA
- P2-07 **Daily rainfall detection and estimation over land using microwave surface emissivities**  
Camille BIRMAN, Fatima KARBOU, Jean-François MAHFOUF
- P2-08 **Use of radar images including X Band radar, in order to improve hourly disaggregation of daily precipitation analyse. Application on Mercantour and Haut-Var Haut-Verdon massifs (French Alps)**  
Laurent MERINDOL, Yves DURAND, Béatrice FRADON, Renaud TZANOS, Samuel WESTRELIN
- P2-09 **Airborne Snowmapping - airborne surveying of snow surfaces and glaciers**  
**Airborne Snowmapping - die luftgestützte Vermessung von Schnee - und Gletscheroberflächen**  
Markus AUFLEGER, Frank STEINBACHER
- P2-10 **Instrumentation of Snow-Supporting Structures in Jackson, WY, Planning and Implementation**  
Scott MERRY, Joshua HEWES, Rand DECKER
- P2-11 **The employment of MODIS time series to monitor snow cover in the Majella National Park (Italian Central Apennines)**  
Danilo GODONE, Angela STANISCI, Giuseppe CORTI, Stefania COCCO, Michele FREPPAZ
- P2-12 **An innovative algorithm for unmanned validation of automatic snow depth measurements**  
Mattia FALETTO, Silvia TERZAGO, Maria Cristina PROLA, Simona FRATIANNI, Roberto CREMONINI, Secondo BARBERO
- P2-13 **Improving snow properties retrievals thermodynamic snow models and satellite remote sensing**  
Alexandre LANGLOIS, Alain ROYER
- P2-14 **Data assimilation of multilayer snowpack on Argentière glacier, using SAR 2-D and 3-D data, DMRT and snow metamorphism models**  
Xuan-Vu PHAN, Laurent FERRO-FAMIL, Michel GAY, Yves DURAND
- P2-15 **Geomatic contribution for estimate and follow important indicators in snow cover contribution to hydrological resources**  
**Contribution de la géomatique à l'estimation et au suivi d'indicateurs déterminants dans l'apport du manteau neigeux aux ressources hydrogéologiques**  
Janine SOMMA, Charbel ABOU CHAKRA, Taha EL ALI
- P2-16 **Climate change: a new software to study the variations of snow images shot by web cam**  
Mauro VALT, Rosamaria SALVATORI, Paolo PLINI, Roberto SALZANO, Marco GIUSTO, Mauro MONTAGNOLI, Daniele SIGISMONDI
- P2-17 **Drifting and blowing snow measurements: comparison between snow particle counter and a simple photo-electronic fork sensor (Wenglor)**  
Hervé BELLOT, Florence NAAIM, Luc PIARD, Cyril PALERME
- P2-18 **Thermographic imagery as a tool for snow measurements**  
Marc PONS, Pere MARCÉ, Aina MARGALEF, Pere ESTEBAN, Martí ROSAS-CASALS, Èric JOVER
- P2-19 **Limitations of an infrared camera to measure snow pit-wall temperatures**  
Michael SCHIRMER, Bruce JAMIESON
- P2-20 **IceCube, a portable and reliable instrument for snow specific surface area measurement in the field**  
Nicolas ZUANON
- P2-21 **Remote and real time avalanche monitoring with Wi-Fi**  
Marek BISKUPIČ, Milan LIZUCH, Jozef RICHNAVSKÝ, Ľuboslav ŠTEFANČEK, Ľuboš ČERNÝ
- P2-22 **Real-time monitoring of snow avalanches by means of an Infrasonic Array Network (IAN) in Valle d'Aosta (Italy)**  
Giacomo ULIVIERI, Emanuele MARCHETTI, Maurizio RIPEPE, Giorgio LACANNA, Igor CHIABRETTI, Valerio SEGOR
- P2-23 **The «Avalanche Detector»: a new avalanche monitoring tool using distributed acoustic fiber optic sensing**  
Alexander PROKOP
- P2-24 **Towards a basic avalanche characterization based on the generated seismic signal**  
Alec VAN HERWIJNEN, Lisa DREIER, Perry BARTELT

- P2-25 **A simple method to study snow erosion and deposition processes in small avalanches: the straw test**  
 Eloïse BOVET, Margherita MAGGIONI, Luca PITET, Bernardino CHIAIA, Michele FREPPAZ, Valerio SEGOR, Paola DELLAVEDOVA
- P2-26 **Field report on remotely controlled terrestrial laser scanner and avalanche-RADAR measurements**  
 Thomas GIGELE
- P2-27 **Testing a new shear loading apparatus for in-situ studies of weak snow layers**  
 Evgeny A. PODOLSKIY, Monica BARBERO, Fabrizio BARPI, Mauro BORRI-BRUNETTO, Oronzo PALLARA, Bernardino CHIAIA, Guillaume CHAMBON
- P2-28 **A snow stratigraphy comparison with the ramsonde and thin-blade penetrometer**  
 Andrea TUPY, Chris DEVITO
- P2-29 **Measurements on small avalanches in Lech/ Austria**  
 Marc ADAMS, Engelbert GLEIRSCHER
- P2-31 **The production of patents related to snow avalanches and notes for the evolution of the production of knowledge around snow avalanches in a collaborative environment**  
 Luis G. LÓPEZ-COBO
- P2-33 **Real-time detection of natural snow avalanches by Infrasonic Array Network (IAN) on December 2012 in Valtournenche - Aosta Valley (IT)**  
 Nathalie DURAND, Giacomo ULIVIERI, Emanuele MARCHETTI, Barbara FRIGO, Paola DELLAVEDOVA, Valerio SEGOR
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- Avalanche dynamics and hazard mapping**
- P2-32 **Qualitative analysis of the transfer of knowledge about snow avalanches in the land use planning of four territories of Europe; Qualitative analysis and conceptual map of the lines of research related to the snow avalanches and regional/spatial planning**  
 Luis G. LÓPEZ-COBO
- P2-34 **The new 3D-images tool to rapid drawing the avalanche limits: procedure and first validation**  
 Nathalie DURAND, Leandro BORNAZ, Barbara FRIGO, Paola DELLAVEDOVA, Valerio SEGOR
- P2-35 **Avalanche impact pressure on a wall-like obstacle**  
 Emmanuel THIBERT, Thierry FAUG, Hervé BELLOT, Djebar BAROUDI
- P2-36 **Avalanche in the Lys valley in 2013: known avalanche with a new trajectory**  
**Avalanche de la vallée de Lys 2013 : avalanche connue avec une trajectoire inédite**  
 Jean-François QUINIOU, Jean-luc MAGDINIER, Caroline KUCHARSKI, Frédéric LASSUS, Bernard LARAT
- P2-37 **Contribution of dendro-geomorphology in the field of avalanche hazard assessment in the French Alps**  
 Romain SCHLÄPPY, Vincent JOMELLI, Nicolas ECKERT, Delphine GRANCHER, Markus STOFFEL, Christophe CORONA, Daniel BRUNSTEIN
- P2-38 **Analysis of an avalanche that destroyed a chair lift and comparison to the design avalanche impact pressure according to «Swiss guidelines»**  
 Mark SCHAER, Stefan MARGRETH
- P2-39 **When should a hazard map show the risk of small avalanches or snow glide?**  
 Stefan MARGRETH
- P2-40 **Public authorities and risk management**  
**Collectivités publiques et gestion du risque**  
 Grégory MOLLION
- P2-43 **Extreme value analysis of design events**  
 Jan-Thomas FISCHER, Leopold STEPANEK, Andreas HUBER, Reinhard FROMM, Zeidler ANTONIA, Karl KLEEMAYR
- P2-44 **Wet snow avalanche dynamics**  
 Cesar VERA VALERO, Marc CHRISTEN, Yves BÜHLER, Perry BARTLET
- P2-45 **Recent snowmaking in the Eastern Alps and search for statistical relationships between slab avalanches and nivo-meteorological parameters**  
**Innevamento recente sulle Alpi orientali e ricerca di relazioni statistiche tra valanghe spontanee a lastroni e parametri nivometeorologici**  
 Massimiliano FAZZINI, Billi PAOLO, Costanzo FRANCESCO, Moro DANIELE
- P2-46 **Development of a simple raster-based model for gravitational mass movement processes for application in regional assessment of forest stands with direct protective functionality**  
 Andreas HUBER, Frank PERZL, Reinhard FROMM, Jan-Thomas FISCHER, Klaus KLEBINDER, Bernadette SOTIER
- P2-47 **Winter terrain roughness as a new parameter to define location and size of avalanche release areas**  
 Jochen VEITINGER, Betty SOVILLA, Ross PURVES



- P2-48 **Features of avalanches based on aerial photograph interpretation in Japan**  
Kazuya AKIYAMA, Shinji IKEDA
- P2-49 **Back-analysis modeling for the catastrophic avalanches in Sewell, Central Chilean Andes**  
Marc JANERAS, Pere OLLER, Rodrigo ARANCIBIA, Judit PONS, Olga COSTA, Danilo ASECIO
- P2-50 **Characterization of major avalanche episodes in space and time in the 20th and 21st centuries in the Catalan Pyrenees**  
Pere OLLER, Elena MUNTÁN, Carles GARCÍA-SELLÉS, Glòria FURDADA, Cristina BAEZA, Cecilio ANGULO
- P2-51 **Application of empirical calculations and dynamics models for snow avalanche hazard assessment in Russia**  
Alla TURCHANINOVA
- P2-52 **CLPA annual updating, 10 years of practice... Results, process improvement and prospects...**  
Julien ROBINET, Mylène BONNEFOY
- P2-53 **Retrieving avalanche basal friction law parameters from high rate positioning of avalanches**  
Gaëtan PULFER, Mohamed NAAÏM, Emmanuel THIBERT, Alvaro SORUCO
- P2-54 **Snow avalanche hazard mapping for different frequency scenarios, the case of the Tatra Mts., Western Carpathians**  
Paweł CHRUSTEK, Przemysław KRUSIŃSKI, Andrzej GRYSZKUR
- P2-55 **Obtaining snow avalanche information by means of terrestrial photogrammetry**  
Paweł CHRUSTEK, Natalia KOLECKA, Yves BÜHLER
- P2-56 **Mathematical modeling of slope flows entraining bottom material**  
Margarita EGLIT
- P2-57 **The role of slope angle, ground roughness and stauwall strength in the formation of glide-snow avalanches in forest gaps**  
Thomas FEISTL, Peter BEBI, Marc HANEWINKEL, Perry BARTELT
- P2-58 **Granulation of snow**  
Walter STEINKOGLER, Betty SOVILLA, Michael LEHNING
- P2-59 **Determining avalanche modeling input parameters using terrestrial laser scanning technology**  
Alexander PROKOP, Peter SCHOEN, Florian SINGER, Gaëtan PULFER, Emmanuel THIBERT, Mohamed NAAÏM
- P2-61 **Numerical study of granular dense snow avalanche front instabilities**  
Mohamed NAAÏM, Perry BARTELT
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- Global snow properties and drifting snow**
- P2-60 **A comparison of terrain-based parameter, wind-field modelling and TLS snow depth data for snow drift modelling**  
Alexander PROKOP, Peter SCHOEN, Florian SINGER, Florence NAAÏM-BOUVET, Vincent VIONNET, Hervé BELLOT, Gilbert GUYOMARC'H, Kouichi NISHIMURA
- P2-62 **Wind tunnel blowing snow study: steady and unsteady properties of wind velocity, mass fluxes and mass exchanges**  
Mohamed NAAÏM, Florence NAAÏM-BOUVET, Kouichi NISHIMURA, Osamu ABE, Yoichi ITO, Masaki NEMOTO, Kenji KOSUGI
- P2-63 **Determination of the surface roughness length for momentum over a coastal region of Adelie**  
Charles AMORY, Hubert GALLÉE, Alexandre TROUVILLIEZ, Florence NAAÏM-BOUVET
- P2-64 **Simulation of blowing snow in Antarctica with the regional climate model MAR**  
Hubert GALLÉE, Charles AMORY, Alexandre TROUVILLIEZ, Cécile AGOSTA, Christophe GENTHON, Vincent FAVIER, Florence NAAÏM-BOUVET
- P2-65 **Preliminary measurements and surveys of snowdrift at the Seehore avalanche test site - Aosta Valley (IT)**  
Margherita MAGGIONI, Nathalie DURAND, Barbara FRIGO, Oronzo PALLARA, Michele FREPPAZ, Davide VIGLIETTI, Paola DELLAVEDOVA, Florence NAAÏM-BOUVET, Hervé BELLOT
- P2-66 **Technical handbook "Wind drift control structures in mountainous areas"**  
**Guide technique «Ouvrages à vent en zone de montagne»**  
Florence NAAÏM-BOUVET, Michel TRUCHE
- P2-67 **Size distribution of blowing snow particles in the French Alps : comparison with previous studies**  
Florence NAAÏM-BOUVET, Hervé BELLOT, Mohamed NAAÏM, Kouichi NISHIMURA
- P2-68 **Snow particle speeds in blowing snow**  
Kouichi NISHIMURA, Chika YOKOYAMA, Yoichi ITO, Masaki NEMOTO, Kenji KOSUGI, Florence NAAÏM-BOUVET, Hervé BELLOT

**Thursday, October 10, Orals****Global snow properties and their spatial variability***Session Chair: Jürg SCHWEIZER*

- 8:00 **Spatial predictions of surface hoar and crust formation** (O4-01)  
Simon HORTON, Michael SCHIRMER, Bruce JAMIESON
- 8:15 **Micromechanical elastic properties of weak layers** (O4-02)  
Berna KÖCHLE, Margret MATZL, Martin PROKSCH, Martin SCHNEEBELI
- 8:30 **Computation of grain sizes from microtomographic images of snow** (O4-03)  
Frédéric FLIN, Xi WANG, Pascal HAGENMULLER, Neige CALONNE, Bernard LESAFFRE, Anne DUFOUR, David COEURJOLLY, Christian GEINDREAU, Sabine ROLLAND DU ROSCOAT
- 8:45 **Measurements of triggering stress transmitted through the upper snowpack** (O4-04)  
Scott THUMLERT, Bruce JAMIESON
- 9:00 **Effects of alpine birch forest on snow stability** (O4-05)  
Hedda BREIEN, Øyvind HØYDAL
- 9:15 **A multi-dimensional water transport model to reproduce the preferential flow in a snowpack** (O4-06)  
Hirashima HIROYUKI, Yamaguchi SATORU
- 9:30 **SNOWGRID - A new operational snow cover model in Austria** (O4-07)  
Marc OLEFS, Wolfgang SCHÖNER, Martin SUKLITSCH, Christoph WITTMANN, Bernd NIEDERMOSER, Alfred NEURURER, Arnulf WURZER

**9:45 Morning break****Avalanche hazard forecasting***Session Chair: Glòria MARTÍ*

- 10:15 **Evaluation of an avalanche triggered by a local earthquake at the Vallée de la Sionne (Switzerland) experimental site** (O4-08)  
Cristina PÉREZ-GUILLÉN, Mar TAPIA, Emma SU RIÑACH, Glòria FURDADA, Martin HILLER
- 10:30 **Understanding the «true» predictive power of statistical avalanche forecasting** (O4-09)  
Jordy HENDRIKX
- 10:45 **Can near real-time avalanche occurrence data improve avalanche forecasting?** (O4-10)  
Jürg SCHWEIZER, Alec VAN HERWIJNEN
- 11:00 **The systematic snow cover diagnosis: A process-based approach for avalanche danger assessment** (O4-11)  
Georg KRONTHALER, Christoph MITTERER, Bernd ZENKE, Michael LEHNING

- 11:15 **Avalanche danger variability in level 2 - moderate and 3 - considerable of the European danger scale following the EAWS Bavarian matrix - Experimental use of icons representing different weight and scenarios frequency in the last few winter seasons** (O4-12)  
Flavio BERBENNI, Mauro VALT, Alfredo PRAOLINI
- 11:30 **Avalanche Danger Patterns - A new approach to snow and avalanche science** (O4-13)  
Rudi MAIR, Patrick NAIRZ
- 11:45 **Avalanche problems: an important part of the Norwegian forecast, and a useful tool for the users** (O4-14)  
Markus LANDRØ, Solveig KOSBERG, Karsten MÜLLER

**12:00 Lunch****Avalanche protection, artificial release and mitigation strategies***Session Chair: Robert BOLOGNESI*

- 13:20 **Avalanche risk management in Winter 2012/13 in Monterosa Ski resort - Aosta Valley (IT)** (O4-15)  
Barbara FRIGO, Alessandro PROLA, Arnaldo WELF, Nathalie DURAND, Paola DELLAVEDOVA, Valerio SEGOR
- 13:35 **Avalanche safety in ski areas - the legal position in Austria** (O4-16)  
Siegfried SAUERMOSE, Gebhard WALTER
- 13:50 **Use of the memory of the meteorological and snow observations, reducing the avalanche's risk for the hard working actors on the ski resorts; Utilisation de la mémoire des observations Nivo-Météo, réduisant les risques des acteurs intervenants sur le domaine skiable** (O4-17)  
Christian REVERBEL, Michel CLEMENCON, Jean-Marc DAULTIER
- 14:05 **Impressions from Applying ISO31000 to Avalanche Mitigation Projects** (O4-18)  
Bruce JAMIESON, Alan JONES
- 14:20 **The avalanche's risk prevention in the Chamonix valley; La prévention du risque d'avalanche dans la vallée de Chamonix** (O4-19)  
Pascal CROZ

**14:35 Afternoon break and posters****Crisis management, avalanche accidents and rescue, and Snow hydrology and ecology***Session Chair: Ulrich STRASSER*

- 16:10 **Use of avalanche terrain exposure classification for avalanche accidents in Catalan Pyrenees** (O4-20)  
Glòria MARTÍ, Laura TRABAL, Joan Manuel VILAPLANA, Carles GARCÍA

- 16:25 **Specific traumatology in avalanche victims** (O4-21)  
**Bertrand TRILLING**, Marc BLANCHER, Catherine ARVIEUX, François-Xavier AGERON
- 16:40 **Impact of climate versus land-use changes on snow cover in Bassiès, Pyrenees - France** (O4-22)  
**Camille SZCZYPTA**, Simon GASCOIN, Thomas HOUET, Pascal FANISE
- 16:55 **Review of precipitation phase determination towards synergistic hydrology and meteorology models** (O4-23)  
**James FEICCABRINO**, William GRAFF, Nils SANDSTRÖM, Angela LUNDBERG
- 17:10 **Snow and glacier melt runoff modeling in Langtang river basin of Central Nepal Himalaya using energy balance based snow and glacier melt model** (O4-24)  
**Shrestha MAHESWOR**, Lei WANG, Toshio KOIKE, Yongkang XUE, Yukiko HIRABAYASHI
- 17:25 **Geo-historical analysis of the interactions between forest and avalanche dynamics in a medium-high mountain: the case of the Vosges range (France);**  
**Analyse géo-historique des interactions entre dynamiques forestières et dynamiques des avalanches en moyenne montagne : le cas du Massif vosgien (France)** (O4-25)  
**Florie GIACONA**, Brice MARTIN
- 17:40 **Linking snow distribution and forest canopy characteristics by way of hemispherical photography** (O4-26)  
**Jiri ROUBINEK**, David MOESER, Tobias JONAS, Jirka PAVLASEK
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- Workshop (only in English): Snow and avalanche test sites**  
*Session Chair: Peter GAUER; Stendhal room*
- 15:00 **Long-term (climatological) to short-term (intensive campaigns) field investigations of meteorological and snow conditions at the experimental site Col de Porte in the French mountains** (O4-27)  
**Yves LEJEUNE**, Samuel MORIN, Jean-Michel PANEL, Bernard LESAFFRE, Laurent PEZARD, Carlo CARMAGNOLA, Marie DUMONT, Romain BIRON, Jean-Paul LAURENT, Laurent ARNAUD, Didier VOISIN, Christophe GENTHON, Paul CARRIER, Frédéric GOTTARDI
- 15:15 **Studies of snow cover in the area of Hala Gasienicowa in Polish Tatra Mountains** (O4-28)  
**Maciej KARZYNSKI**, Anna FIEMA, Tomasz NODZYNSKI
- 15:30 **Blowing snow in Antarctica: 3 years of continuous observations in Adelie Land** (O4-29)  
**Alexandre TROUVILLIEZ**, Charles AMORY, Christophe GENTHON, Luc PIARD, Florence NAAIM-BOUVET, Hervé BELLOT, Hubert GALLEE
- 15:45 **Lac Blanc Pass: a natural wind-tunnel for studying drifting snow at 2700m.a.s.l!** (O4-30)  
**Florence NAAIM-BOUVET**, Gilbert GUYOMARC'H, Hervé BELLOT, Yves DURAND, Mohamed NAAIM, Vincent VIONNET, Christophe GENTHON, Yoichi ITO, Alexander PROKOP
- 16:00 **An integrated system to assess snow forces on avalanche defense structures from snow-gliding: La Tour test site - Aosta Valley (IT)** (O4-31)  
**Valerio DE BIAGI**, Monica BARBERO, Fabrizio BARPI, Mauro BORRI-BRUNETTO, Elisabetta CEAGLIO, Michele FREPPAZ, Barbara FRIGO, Oronzo PALLARA, Valerio SEGOR
- 16:15 **Preliminary results at the Hijiori Avalanche test site** (O4-32)  
**Osamu ABE**, Masaki NEMOTO, Kenji KOSUGI, Isao KAMIISHI
- 16:30 **The full-scale avalanche dynamics test site Vallée de la Sionne** (O4-33)  
Walter STEINKOGLER, **Betty SOVILLA**, Jim MC ELWAINE, Walter STEINKOGLER, Martin HILLER, Francois DUFOUR, Emma SURINACH, Emmanuel THIBERT
- 16:45 **The full-scale avalanche test site, Lautaret, France** (O4-34)  
**Emmanuel THIBERT**, Hervé BELLOT, Xavier RAVANAT, Frédéric OUSSET, Gaëtan PULFER, Mohamed NAAIM, Florence NAAIM-BOUVET, Yoichi ITO, Djebbar BAROUDI, Alexander PROKOP, Alvaro SORUCO, Christian VINCENT, Ali LIMAM, Damiano PESARESI
- 17:00 **40 years of NGI's full-scale avalanche test site Ryggfonn** (O4-35)  
**Peter GAUER**, Krister KRISTENSEN
- 17:15 **The experimental snow avalanche test site at Seehore Peak in Aosta Valley (IT)** (O4-36)  
**Valerio SEGOR**, Luca PITET, Margherita MAGGIONI, Barbara FRIGO, Michele FREPPAZ, Bernardino CHIAIA, Eloïse BOVET, Paola DELLAVEDOVA, Arnaldo WELF
- 17:30 **Monitoring of Taconnaz avalanche path: Pressure and velocity measurements on breaking mounds** (O4-37)  
**Hervé BELLOT**, Florence NAAIM-BOUVET, Mohamed NAAIM, Thierry FAUG, Paolo CACCAMO, Frédéric OUSSET
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- 17:45 **Workshop discussion**
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- 17:55 **From safe to treacherous snows : an unusual look at snow and avalanches in France**  
**Des neiges tranquilles aux neiges redoutées: un regard insolite sur la neige et les avalanches en France**  
**Richard LAMBERT**

Thursday, October 10, Posters 14:35 - 16:10

## Global snow properties and their spatial variability

- P4-01 **Human triggered slab avalanche properties from the Catalan Pyrenees**  
Montserrat BACARDIT, Ivan MONER, Jordi GAVALDÀ, Carles GARCIA, Glòria MARTÍ
- P4-02 **Spatial variability of the thermal resistance of the snowpack; Relationship to vegetation and impact on the soil thermal regime**  
Florent DOMINE, Yannick DUGUAY, Denis SARRAZIN, Samuel MORIN, Matthieu LAFAYSSSE, Eric BRUN
- P4-03 **Tracking melt-freeze crust evolution in Val d'Aran (Catalan Pyrenees)**  
Jon APODACA-SARATXO, Montserrat BACARDIT, Ivan MONER, Jordi GAVALDÀ
- P4-05 **Small-scale meteorological conditions at an avalanche slope**  
Reinhard FROMM, Thomas GIGELE, Friedrich OBLEITNER
- P4-06 **On modeling the formation and survival of surface hoar in complex terrain**  
Nora HELBIG, Alec VAN HERWIJNEN
- P4-07 **The effect of spatial variations of snowpack properties on snow slope stability**  
Johan GAUME, Jürg SCHWEIZER, Guillaume CHAMBON, Mohamed NAAIM
- P4-08 **Linking weather conditions to snow property variations**  
Benjamin REUTER, Jürg SCHWEIZER
- P4-09 **Numerical modeling of snow cover and its sensitivity to various parameters**  
Vasily SOKRATOV, Andrey SHMAKIN
- P4-10 **Climatological comparison of 2011-2012 and 2012-2013 winters focused on the huge contrast in different nivological parameters in Pyrenees Range (Spain)**  
Ismael SAN AMBROSIO, Samuel BUISÁN, Javier RODRIGUEZ, Jose Antonio VADA
- P4-11 **Physical and isotopic characteristics of snowpack in NW Slovenia**  
Jaka ORTAR, Manca VOLK, Miha PAVŠEK, Iztok VRŠKUP, ...
- P4-12 **Spatial and temporal snow depth variability on slopes of the Aibga Ridge (Sochi Region, Russia)**  
Pavel CHERNOUS, Vladimir SUCHKOV
- P4-13 **Can a point measurement represent the snow depth in its vicinity? A comparison of areal snow depth measurements with selected index sites**  
Thomas GRÜNEWALD, Michael LEHNING

- P4-14 **Implementation and evaluation of prognostic representations of the optical diameter of snow in the detailed snowpack model SURFEX/ISBA-Crocus**  
Carlo-Maria CARMAGNOLA, Samuel MORIN, Matthieu LAFAYSSSE, Florent DOMINE, Ghislain PICARD, Laurent ARNAUD
- P4-15 **Studies of capillarity and liquid water between snow layers**  
Willi POSE
- P4-16 **Investigation of adsorbent for a measurement of snow specific surface area by the gas-adsorption method**  
Akihiro HACHIKUBO, Satoru YAMAGUCHI, Hayato ARAKAWA, Tomonori TANIKAWA, Masahiro HORI, Konosuke SUGIURA, Masashi NIWANO, Teruo AOKI
- P4-17 **Comparison of a snowpack on a slope and level ground by focusing on the effect of water infiltration**  
Shinji IKEDA, Takafumi KATSUSHIMA, Yasuhiko ITO, Hiroki MATSUSHITA, Yukari TAKEUCHI, Kazuya AKIYAMA
- P4-18 **Relationship between preferential flow and condition of water input in snow cover**  
Satoru YAMAGUCHI, Hiroyuki HIRASHIMA, Atsushi SATO
- P4-19 **Digital flow for grain segmentation from 3D microtomographic images of snow**  
Xi WANG, Frédéric FLIN, David COEURJOLLY, Bernard LESAFFRE
- P4-20 **Grain size dependence of intrinsic permeability in seasonal snow**  
Hayato ARAKAWA, Akihiro HACHIKUBO, Satoru YAMAGUCHI, Teruo AOKI
- P4-21 **3D images of snow under a controlled temperature gradient: anisotropic evolution of the micro-structural and physical properties**  
Neige CALONNE, Christian GEINDREAU, Frédéric FLIN, Bernard LESAFFRE, Sabine ROLLAND DU ROSCOAT, Pascal CHARRIER
- P4-22 **Description of the snow microstructure as a 3D assembly of snow grains**  
Pascal HAGENMULLER, Guillaume CHAMBON, Frédéric FLIN, Xi WANG, Bernard LESAFFRE, Mohamed NAAIM

## Snow hydrology and ecology

- P4-23 **Operational SWE forecasts using nearest neighbours**  
Edward BAIR, Robert DAVIS, Karl RITTGER, Jeff DOZIER
- P4-24 **A snow model intercomparison project for the evaluation of snow water equivalent in Valle d'Aosta**  
Simone GABELLANI, Edoardo CREMONESE, Umberto MORRA DI CELLA, Paolo POGGIOTTI, Roberto RUDARI, Sara RATTO, Hervé STEVENIN



## Detailed program

- P4-25 **Modelling the effect of changing snow cover regimes on alpine plant species distribution in alpine context**

Jean-Pierre DEDIEU, Christophe RANDIN, Massimiliano ZAPPA, Stefan DULLINGER

- P4-26 **Spatial distribution of HBV-ETH model**

Zbynek KLOSE, Jiri PAVLASEK, Roman JURAS, Jiri ROUBINEK

- P4-27 **Can we document avalanche activity by plants succession monitoring?**

Milena KOCIÁNOVÁ, Irena ŠPATENKOVÁ, Petra KOCOURKOVÁ, Roman JURAS, Alena BARTOSOVÁ, Jan ALTMAN

- P4-28 **Comparison of statistical and dynamical approaches for the precipitation phase discrimination in the Alps**

Isabella ZIN, Stéphanie FROIDUROT, Ingrid DOMBROWSKI-ETCHEVERS, Louis QUÉNO

- P4-29 **Test and potentialities of a new numerical weather forecasting non-hydrostatic model for hydrology and snowcover simulations**

Ingrid DOMBROWSKI-ETCHEVERS, Louis QUÉNO, Fatima KARBOU, Jean-François RIBAUD, Yves DURAND

- P4-30 **ESCIMO.spread - a spreadsheet-based point snow surface energy balance model to calculate hourly snow water equivalent and melt rates for historical and changing climate, v2: parameterization of inside-canopy conditions**

Ulrich STRASSER, Thomas MARKE

- P4-31 **A new model for operational winter road surface conditions forecasting in Météo-France**

Ludovic BOUILLILOUD, Odile COUDERT, Alain FOIDART

- P4-32 **Simulation of snowmelt-runoff using SRM model in Taleghan watershed**

Mehdi VAFAKHAH, Anis NOORI

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## Managing snow

- P4-33 **Green Snowflake label**

Label Flocon Vert

Laurent BURGET

- P4-34 **A network-based approach for the study of criticalities in ski-resorts**

Valerio DE BIAGI, Bernardino CHIAIA, Barbara FRIGO

- P4-35 **Natural snowpack variations and ski resorts operation**

Variations de l'enneigement naturel et exploitation des stations de sports d'hiver

Hugues FRANÇOIS, Samuel MORIN, Emmanuelle GEORGE-MARCELPOIL, Matthieu LAFAYASSE, Cécile COLÉOU

- P4-36 **Geotechnical and ecological aspects of locaing snow fields on the urbanized territory (Yuzhno-Sakhalinsk)**

Yury GENSIOROVSKY, Natalia UKHOVA, Valentina LOBKINA

- P4-37 **The history and evolution of track machinery used for the purpose of avalanche clean up on the Alaska railroad**

Bruce GOUGH

- P4-38 **Future changes in ski resorts**

Steward SHEPPARD

- P4-39 **Recent climatic changes and protection of perennial snow of Presena glacier (western Trentino)**

Massimiliano FAZZINI, Billi PAOLO, Andreatta STEFANO, Casarotto CHRISTIAN

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## Impact of climate change

- P4-40 **The snow climatology in the Appennines in the last thirty years;**

Climatologia della neve sul sistema montuoso degli Appennini durante gli ultimi trenta anni

Massimiliano FAZZINI, Romeo VINCENZO

- P4-41 **How short warm events disrupt snowcover dynamics Exemple of a polar basin behaviour - Spitsberg, 79°N**

Éric BERNARD, Florian TOLLE, Jean Michel FRIEDT, Christelle MARLIN, Madeleine GRISELIN

- P4-42 **Snow cover sensitivity to black carbon deposition in the Himalaya: from ice core measurements to regional climate simulations**

Sensibilité du couvert neigeux au dépôt d'aérosol carboné en Himalaya : analyse de forages glaciaires et de simulations climatiques régionales

Martin MÉNÉGOZ, Gerhard KRINNER, Yves BALKANSKI, Anne COZIC, Olivier BOUCHER, Sahee LIM, Patrick GINOT, Hans-Werner JACOBI

- P4-44 **New snow cover climate monitoring indices; Nouveaux indicateurs de suivi climatique pour l'enneigement en montagne**

Jean-Michel SOUBEYROUX, Sophie MARTINONI-LAPIERRE, Daniel GOETZ, Michel SCHNEIDER, Pierre ETCHEVERS, Cécile COLÉOU

- P4-45 **Evaluation of snowmelt runoff for extreme annual snow conditions under climate change**

Yoshihiro ASAOKA, Shunsuke KASHIWA, So KAZAMA

- P4-46 **Assessing long term trends in winter conditions**

Elena STOLL, Antonia ZEIDLER, Reinhard FROMM

- P4-47 **Wet snow avalanche activity in the Swiss Alps - trend analysis for mid-winter season**

Christine PIELMEIER, Frank TECHEL, Christoph MARTY, Thomas STUCKI

- P4-48 **Climatic change in Italian Alps: analysis of snow precipitation, snow durations and avalanche activity**

Mauro VALT, Paola CIANFARRA

- P4-49 **Snow climatological analysis and assessments of the extreme events in western Italian Alps in the context of the interreg project STRADA**



**Mattia FALETTO**, Simona FRATIANNI, Silvia TERZAGO, Federica ACQUAOTTA, Maria Cristina PROLA, Secondo BARBERO

- P4-50 **Does climate change affect avalanche activity? A study at Rogers Pass, Canada**  
**Sascha BELLAIRE**, Scott THUMLERT, Bruce JAMIESON, Grant STATHAM
- P4-51 **Combined temperature - precipitation winter modes and major avalanche activity in the Eastern Pyrenees**  
**Carles GARCIA-SELLES**, Santi MANGUAN, Glòria MARTÍ, Pere OLLER, Pere MARTINEZ
- P4-52 **Basic findings of the project RIMES**  
**Antonia ZEIDLER**, Paul DOBESBERGER
- P4-53 **Climate change influence on the winter tourism in the Pyrenees (NIVOPYR); A regional approach in the CTP research framework**  
**Eric JOVER**, Marc PONS, Pere ESTEBAN, Santiago MACIÀ, Jose Ignacio LÓPEZ-MORENO, Carles GARCÍA, Pere OLLER, Martí ROSAS
- P4-54 **Exploration of water management adaptation strategies in a context of climatic changes in the Alps via a modelling tool**  
**Eve LEROY**, Georges-Marie SAULNIER

### Forum on new technologies

- P4-55 **Telemedicine backpack: Helping rescue teams to send vital sign measurements to healthcare professionals in inaccessible areas**  
**Manuel AVELLANAS**, Sergio MAYO, Marèa de la Vega RODRIGÁLVAREZ, Juan COLL, Modesto SIERRA, Rosana ANGLÉS, Rocio HURTADO
- P4-56 **Electromagnetic compatibility of avalanche transceivers**  
**Ilari DAMMERT**, Erwin MEISTER
- P4-58 **Infrasound detection of avalanches, a new approach on managing avalanche risk**  
**Arnold KOGELNIG**, Giacomo ULIVIERI, Emanuele MARCHETTI, Samuel WYSSEN
- P4-59 **New findings regarding the effectiveness of the avalanche airbag and new developments of the avalanche airbag deployment for snowmobiler**  
**Franz KROELL**
- P4-61 **Smart antenna technology**  
**Hendrik RESCHKE**
- P4-62 **A revolution in airbag technology**  
**Nathan KUDER**, Markus ECK, Ryan GUESS
- P4-63 **Intelligent (Mountain) Rescue System, iSis - Système Intelligent de Secours**  
**Malik KARAOU**

### Friday, October 11, Orals

#### Guiding in avalanche terrain and snow stability evaluation

*Session Chair: Brian GOULD*

- 8:00 **Snowpack tests and their association with local avalanche danger (O5-01)**  
**Shane HALADUICK**, Bruce JAMIESON
- 8:15 **Edge effects in propagation tests (O5-02)**  
**Edward BAIR**, Ron SIMENHOIS, Alec VAN HERWIJNEN, Karl BIRKELAND
- 8:30 **Comparing ECT and RB failure layers to snow stratigraphy characteristics (O5-03)**  
**Igor CHIAMBRETTI**, Fabiano MONTI, Mauro VALT
- 8:45 **Bayes' beacon: avalanche prediction, competence and evidence for competence. Modelling the effect of competent and incompetent predictions of highly improbable events (O5-04)**  
**Philip EBERT**, Theoni PHOTOPOULOU
- 9:00 **Terrain analysis of human triggered avalanche starting zones (O5-05)**  
**Stephan HARVEY**, Irene VONTOBEL, Ross PURVES
- 9:15 **Intuitive vs. rule based decision making - why intuition doesn't work in avalanche terrain; Intuitives gegen regelbasiertes Entscheiden - warum Intuition im Lawinengelände nicht funktioniert (O5-06)**  
**Werner MUNTER**
- 9:30 **Better self-awareness for better decision-making: reflections on leaders' behaviour**  
**Mieux se connaître pour mieux décider : Réflexions sur le comportement du leader (O5-07)**  
**Sébastien ESCANDE**, Rémi ENGELBRECHT

#### 9:45 Morning break

#### Avalanche education

*Session Chair: Stephan HARVEY*

- 10:15 **Modern avalanche education: about rubber gloves and cardgames (O5-08)**  
**Rolf WESTERHOF**, Maarten HUISMAN
- 10:30 **Risk management training in mountain guide education**  
**L'enseignement de la gestion du risque dans la formation des guides de haute montagne (O5-09)**  
**Alexis MALLON**, Jean Sébastien KNOERTZER
- 10:45 **Identifying accident prevention strategies in avalanche terrain using a systems approach (O5-10)**  
**Hördur HARALDSSON**, Per Olov WIKBERG

11:00 **Off-piste skiing - risk minimization and risk acceptance? Swedish alpine skiers and snowboarders levels of knowledge of and attitudes towards off-piste skiing and avalanches** (O5-11)

Per-Olov WIKBERG, Stefan MÅRTENSSON, Petter PALMGREN

11:15 **Decision-making on avalanche terrain. The extended 3\*3 method**

**Le processus de décision dans la gestion du risque d'avalanche** (O5-12)

François-Xavier CIERCO, Sébastien ESCANDE

11:30 **The role of avalanche character in public avalanche safety products** (O5-13)

Karl KLASSEN, Pascal HAEGELI, Grant STATHAM

11:45 **Risk perception and precautions adoption: a study in the field of out-of-bounds skiing**

**Perception du risque et adoption de précautions : une étude dans le domaine de la pratique du hors-piste** (O5-14)

Mathilde GLETTY, Dongo Rémi KOUABENAN, Aurélie LANDRY

12:00 **Multimedia interface for the dog teams training**

**Interface multimédia pour la formation des équipes cynophiles** (O5-15)

Hervé PUJOL, Marc ALMONTE

12:15 **Artificial avalanche triggering: toward a new generation of products;**

**Le déclenchement artificiel d'avalanches : vers des produits de nouvelle génération** (O5-16)

Jean BRUNET, Louis COMETTO, Christophe FÉLIX, Sébastien GIRARD-BERTHET, André EYBERT-BÉRARD, Henri MIERMONT, Serge RIVEILL, Jean-Louis TUAILLON

12:30 **Lunch**

**Modern form of communicating avalanche danger**

*Session Chair: Valerio SEGOR*

13:30 **The software behind the interactive display of the Swiss avalanche bulletin** (O5-17)

Marc RUESCH, Weiss GERD, Matthias GERBER, Andreas EGLOFF

13:45 **European Avalanche Warning Services (EAWS) - latest news** (O5-18)

Patrick NAIRZ, Karel KRIZ

14:00 **Shifting audience and the visual language of avalanche risk communication** (O5-19)

Jernej BURKELJCA

14:15 **Modern forms of communicating avalanche danger - A Norwegian case** (O5-20)

Erik JOHNSEN

14:30 **Could the mediatization of the biggest avalanches help for the advancement of the accidents prevention?**

**Les avalanches médiatiques font-elles avancer la prévention des accidents ?** (O5-21)

Philippe DESCAMPS

14:45 **Afternoon break and posters**

**Impact of climate change**

*Session Chair: Ludwig BRAUN*

16:00 **Adaptation of current modeled snow covers and avalanche hazards to future climate according several RCM scenarii: application to French Alps** (O5-22)

Gérald GIRAUD, Marie ROUSSELOT, Laurent MÉRINDOL, Ingrid DOMBROWSKI-ETCHEVERS, Yves DURAND, Michel DEQUE, Hélène CASTEBRUNET

16:15 **Relationships among atmosphere-cryosphere-biosphere in a transitional glacial catchment (Sabbione Lake, North-Western Italian Alps)** (O5-23)

Luca PARO, Nicola COLOMBO, Simona FRATIANNI, Elisa GIACCONE

16:30 **Trend analysis of snow water equivalent in the Alpine region** (O5-24)

Christoph MARTY, Anna-Maria TILG, Tobias JONAS

16:45 **Recent changes in avalanche activity in the French Alps and their links with climatic drivers: an overview** (O5-25)

Nicolas ECKERT, Aurore LAVIGNE, Hélène CASTEBRUNET, Gérald GIRAUD, Mohamed NAAIM

17:00 **Le Sappey-en-Chartreuse ski resort: how it is managed and how to take into account climate change?** (O5-26)

Hubert GALLÉE, Antoine KEVORKIAN, Thierry GRENET, Pascale HUYGHE

17:15 **The 'Optimal Skiing Day': The future of ski resorts under climate change conditions** (O5-27)

Jürgen SCHMUDE

**Friday, October 11, Posters**

14:45 - 16:00

**Guiding in avalanche terrain and snow stability evaluation**

P5-01 **Integration of ATES in the avalanche information in Val d'Aran (Central Pyrenees)**  
Jordi GAVALDÀ, Ivan MONER, Montse BACARDIT

P5-02 **Developing guidelines and standards for zoning with the avalanche terrain exposure scale**  
Cam CAMPBELL, Brian GOULD

P5-03 **Risk management with mandatory upper risk threshold in the world's largest mountaineering school**

Manuel GENSWEIN, Krister KRISTENSEN

- P5-04 **Progression in a snowy environment**  
**Progression en terrain enneigé : comment gérer son projet ?**  
 Paul BONHOMME, Denis CRABIERES, Bruno PELLICIER, Christian TROMMSDORF
- P5-05 **Ash and snow, impact on the avalanche hazard of ash layers in the snowpack**  
 Cédric LARCHER
- P5-06 **Wikisnow: an interface for the decision maker in the snow**  
**Wikisnow-eine Schnittstelle für Entscheidungs-träger im Schnee, Arlberg Österreich**  
 Martin BERNER, Martin SCHUSTER
- 
- Avalanche education**
- P5-08 **White Risk 2.0 - A new web-based platform for avalanche education**  
 Stephan HARVEY, Daniel LANDOLT, Samuli AEGERTER
- P5-09 **Understanding travel behavior in avalanche terrain through combined use of GPS tracking, logbook records, and in-depth interviews**  
 Jordy HENDRIKX, Jerry JOHNSON
- P5-10 **Snow dangers and avalanches: prevention through the organization of a federation and the training of its instructors and members**  
 Charles DAUBAS
- P5-11 **«PrevRisk Enfants»: Awareness raising and education of young people about the natural hazards in the mountains**  
 Giovanna BURELLI, Ingrid TROYER, Davide FRANCO, Elisabetta CEAGLIO, Giuseppe ANTONELLO, Andrea DEBERNARDI, Nathalie DURAND, Barbara FRIGO, Eloise BOVET
- P5-12 **Training for mountain area users and professionals using the Horspiste.net (ENSM) web site;**  
**Formation des pratiquants et des professionnels**  
 Pascal NORAZ
- P5-13 **«La Chamoniarde»: 40 years of avalanche risk management for practitioners in Chamonix (French Alps)**  
 Ludovic RAVANEL, Jean-Christophe BÈCHE
- P5-14 **Avalanche risk management by ski touring practitioners in the French Alps**  
 Boris VALAT, Yann DELEVAUX, Ludovic RAVANEL, Philippe SCHOENEICH
- P5-15 **Assessing the impact of avalanche safety training courses in Andorra (2009-2012)**  
 Aina MARGALEF, Pere ESTEBAN
- P5-16 **«Know thyself»**  
**«Connais-toi, toi-même» : Comment aborder les facteurs humains individuels auprès des pratiquants ?**  
 Damien HAXAIRE
- P5-17 **Decision-making at the heart of a new offer for the practitioners training in France: assessment and perspectives of the «Traces» conferences and training courses;**  
**La prise de décision au cœur d'une nouvelle offre de formation de pratiquants en France : bilans et perspectives des conférences et stages «Traces»**  
 Sébastien ESCANDE, Antoine RATTIN, Jean-Yves FERRANDIS
- P5-18 **Quantitative analysis of accidents in the filter of an approach 3x3**  
**Analyse quantitative d'accidents au filtre d'une démarche 3x3**  
 Nicolas RAYNAUD, Sébastien ESCANDE
- P5-19 **Human factors in decision making on avalanche terrain**  
 François-Xavier CIERCO, Frank DEBOUCK
- P5-20 **To train: yes... but in a coherent way!**  
**Former : oui ... mais de manière cohérente !**  
 Paul BONHOMME, Denis CRABIERES, Bruno PELLICIER, Christian TROMMSDORF
- P5-21 **Snow and avalanche association in Spain: a merging of professional and amateur experiences**  
 Glória MARTÍ, Sara ORGUÉ, Jordi GAVALDÀ, Pere OLLER, Francesc CAROLA, Helena SERRED, Txema ARTETA
- P5-22 **Ride Hard, Ride Safe! Val d'Isère (French Alps)**  
 Henry SCHNIEWIND, Renaud LOBRY
- P5-23 **An active avalanche learning experience: playing cards**  
 Rolf WESTERHOF, Werner MUNTER, Manuel GENSWEIN, Huib WOUTERS
- P5-24 **Avalanches in nature protected areas - except of prevention and rescue, the need for education of nature protection arises (experience from the High Sudetes, Czech rep.)**  
 Milena KOCIANOVA, Roman JURAS
- P5-26 **Winter sports in avalanche terrain: how to move forward safely**  
**Pratique des sports de neige en terrain avalancheux : Éléments pour une stratégie de progression**  
 Philippe ERTLEN

- P5-28 **Avalanche forecasting, research and education in Svalbard, Norway - A roadmap provided by an expert workshop in Longyearbyen, April 2013**  
Markus ECKERSTORFER, Jordy HENDRIKX, Hanne H. CHRISTIANSEN, Karl BIRKELAND, Kelly ELDER, Wesley R. FARNSWORTH, Christian JAEDICKE, Karsten MUELLER, Patrick NAIRZ
- P5-29 **Training and information sessions for members of the French Rambler's Association practicing snowshoeing (or snowshoers from the French rambler's Association)**  
**Formation et information des licenciés de la Fédération française de la randonnée Pédestre pratiquants la raquette à neige : comment améliorer la connaissance et les compétences dans un réseau hétérogène de pratiquants ?**  
Michaël ANTHOINE
- P5-30 **Risk appraisal and decision making in front of avalanche risk: A pilot study with backcountry skiers**  
Andres CHAMARRO, Glòria MARTÍ, Tatiana ROVIRA, Francesc CAROLA, Jordi FERNANDEZ-CASTRO
- P5-31 **The Canadian approach to professional avalanche training**  
Emily GRADY
- 
- Modern form of communicating avalanche danger**
- P5-32 **STIPP, a Spanish-french project that combines experience and technology to disseminate information on both sides of the Pyrenees in order to prevent risk situations in mountain areas**  
Bernard COMET, Manuel AVELLANAS, Sergio MAYO, Carlos CISNEROS, David ASIAIN, Adjela ROBERT, Rocio HURTADO
- P5-33 **CPIR, a way of using technology for diffusion of information to prevent risk situations on the Pyrenees**  
Carlos CISNEROS, Sergio MAYO, María de la Vega RODRIGÁLVAREZ, Rocio HURTADO
- P5-34 **Swiss avalanche bulletin: automated translation with a catalogue of phrases**  
Kurt WINKLER, Martin BÄCHTOLD, Stefano GALLORINI, Ueli NIEDERER, Thomas STUCKI, Chris PIELMEIER, Gian DARMS, Frank TECHEL, Beni ZWEIFEL
- P5-35 **GeoAvalanche: state of art and future developments**  
Francesco BARTOLI
- P5-36 **How semantics and resilience from Twitter are being used to avalanche awareness risk**  
Francesco BARTOLI, Igor CHIAMBRETTI
- P5-37 **The avalanche cadaster of the Valle d'Aosta Region (NW Italian Alps): the new born web portal**  
Andrea DEBERNARDI, Valerio SEGOR
- P5-38 **Software tools developed for the Swiss avalanche warning service - a system overview**  
Andreas STOFFEL, Ueli NIEDERER
- P5-39 **New technologies: what roles should be played by education and training? Feedback and examples**  
**Les nouvelles technologies : quels rôles dans la sensibilisation et la formation ? Retours d'expériences et exemples concrets**  
Thierry VALLÉE, Alain DUCLOS
- P5-40 **Using google map application programming to communicate avalanche hazard from multiple avalanche centers**  
Bob COMEY, Carol PECK
- P5-41 **Establishing an avalanche community and communication in Japan**  
Azusa DEGAWA, Yusuke HIROTA
- P5-42 **RegObs: Public database for submitting and sharing observations**  
Ragnar EKKER, Kjetil KVÆRNE, Aslak OS, Tore HUMSTAD, Anders WARTIAINEN, Vidar EIDE, Ravi Kjell HANSEN
- P5-43 **Collecting snow measurements with Ushahidi: Arpa Piemonte experience during winter 2013**  
Mattia FALETTO, Roberto CREMONINI, Maria Crisitna PROLA, Erika SOLERO, Rocco PISPICO, Armando Riccardo GAETA, Secondo BARBERO
- P5-44 **Web service for visualizing snow profiles**  
Matthias GERBER, Charles FIERZ, Pascal HAEGELI