

April 30, 2012

## Programme. IGS 2012 Lahti – Symposium on Seasonal Snow and Ice

### Sunday, 27 May 2012

16–19 Registration desk open at Lahti Ski Museum  
Address: Ski jumping hill (15 minute walk from centre)

### Monday, 28 May 2012

8:00 Registration desk opens in the lobby of Sibeliustalo (symposium site)

9:00 *Opening ceremony, Hall Kuusi*  
Chair: Matti Leppäranta  
Opening of the symposium, *Douglas MacAyeal, President of IGS*  
Greeting of Lahti town by *Jorma Vaskelainen*  
Greeting of APECS, *Yulia Zaika, President of APECS*  
Opening presentation: Reindeer in the changing environment and climate, *Pekka Aikio*

10:00 *Coffee break*

Chair: Lasse Makkonen

10:30 Martin Schneebeli — 62A231 “*Is there a difference in the metamorphism of seasonal snow and multi-year firn*”

11:15 Jouni Pulliainen — 62A999 “*Remote sensing of snow and ice*”

12:00 *Lunch break (buffet lunches are served in Sibeliustalo main hall)*

13:30 Session on Physics of Snow Chair: Erik Brun

13:30 Michael Lehning, Rebecca Mott, Thomas Grünwald and Michael Schirmer — 62A241  
“*Physical and statistical descriptions of mountain snow distributions*”

13:50 Cecilia Johansson, Veijo Pohjola, Christer Jonasson and Terry V Challagan — 62A143 “*50 years of snow stratigraphy observations*”

14:10 Basang Drolma — 62A183 “*Investigation of snow cover over the Tibetan Plateau during 2003–2006*”

14:30 Mats P. Björkman, Rafael Kühnel, Daniel Partridge, Tjarda J. Roberts, Johan Strøm and Elisabeth Isaksson — 62A089 “*Nitrate dry deposition to Svalbard snow*”

14:50 Sven Kotlarski, Christian Steger and Christoph Schär — 62A199 “*Alpine snow cover in a changing climate and the snow-albedo feedback*”

15:10–15:40 *Coffee break*

15:40 Session on Physics of Sea Ice Chair: Hiroyuki Enomoto

15:40 Takenobu Toyota and Haruki Ishii — 62A029 “*Temporal evolution of the structural properties of seasonal sea ice during the early melt season*”

16:00 Martin Doble — 62A052 “*Attenuation of waves in pancake ice: multi-wave buoy in situ measurements compared with a two-layer viscous model*”

16:20 Thomas Krumpfen, Jens A Hølemann, Sascha Willmes — 62A112 “*Formation, growth and export of sea ice in the Laptev Sea between 1992 and 2010*”

16:40 Caixin Wang, Liqiong Shi, Sebastian Gerland, Mats A Granskog, Angelika H H Renner and Zhijun LI — 62A135 “*Snow and sea ice measurements in Rjippfjorden, Svalbard*”

17:00 Matthieu Chevallier, David Salas Y Mélia, Aurore Voldoire, Emilia Sanchez-Gomez, Gilles Garric, Sophie Belamari and Michel Déqué — 62A099 “*Seasonal forecasts of the Arctic sea ice cover : initialization strategy and skills of summer and winter predictions using CNRM-CM5 coupled climate model*”

17:30 Reception

Site: Sibelius Hall Main Lobby

**Tuesday, 29 May 2012**

- 8:30 Session on micro-dynamics of snow and ice *Chair: Paul Bons*  
8:30 Frederic Flin, N. Calonne, C. Geindreau, B. Lesaffre, X. Wang, C. Carmagnola, S. Rolland du Roscoat, P. Charrier, S. Morin, D. Coeurjolly — 64A062+62A101 “3D imaging of snow microstructure for a better knowledge of snow properties and of their time evolution: 2 examples”  
9:00 Ian Baker and Si Chen — 62A016 “Microstructural characterization of dry snow metamorphism”  
9:20 Hiroyuki Hirashima and Osamu Abe — 62A120 “Snow temperature dependency of shear strength change for faceted crystals during equi-temperature metamorphism”  
9:40 Andrew Kasurak, Josh King and Richard Kelly — 62A118 “An optical transmission based snow grain size sensor”  
10:00 Maria Tikanmäki and Lasse Makkonen — 62A216 “Comparison of ice and snow friction models in winter sports”

10:20–10:50 Coffee break

- 10:50 Session continues *Chair: Ian Baker*  
10:50 Paul Bons, Jens Rössiger and Albert Griera — 62A149 “Deformation of ice on the grain scale, using a combined front-tracking and FFT approach”  
11:10 Sonke Maus, Sabine Leisinger and Martin Schneebeli — 62A201 “An X-ray micro-tomographic study of sea ice percolation”  
11:30 Iris Ehlert and Dirk Notz — 62A152 “Warming induced sea-ice desalination”  
11:50 Wenfeng Huang, Zhijun Li, Xiaoyan Liu, Haiqian Zhao, Shuai Guo and Qing Jia — 62A075 “Effective thermal conductivity of reservoir fresh ice with attention to high temperature”  
12:10 Toshihiro Ozeki, Satoru Adachi, Takuma Sakamoto and Katsumi Kose — 62A154 “Field observations of sea-spray icing in Hokkaido, Japan”

12:30 Lunch break (buffet lunches are served in Sibelius Hall main hall)

- 13:50 Session on ecology of ice-covered waters *Chair: Daiki Nomura*  
13:50 William Rizk, Georgiy Kirillin and Matti Leppäranta — 62A200 “Heat budget of the ice-covered Lake Pääjärvi during the early- and mid-winter season”  
14:10 Galina Zdrovennova, Roman Zdrovennov, Nikolay Palshin and Arkady Terzhevik — 62A179 “Ice cover on Lake Vendyurskoy (1994–2011): Phenomenology and temporal-spatial dynamics”  
14:30 Georgiy Kirillin, Matti Leppäranta and William Rizk — 62A173 “Direct measurements of convective mixing under melting lake ice”  
14:50 Brigitte Nixdorf, Jacqueline Rücker and Ingo Henschke — 62A237 “In situ observation of lake ice phenomenology in temperate region – ecological impacts on phytoplankton response”  
15:10 Ioanna Merkouriadi and Matti Leppäranta — 62A097 “Influence of landfast ice on hydrography and circulation in the coastal zone”

15:30 Poster session with Coffee break

18:00–20:00 APECS Panel: International Collaborations in "Cool" Sciences  
Chaired by Yulia Zaika, President of APECS

## Wednesday, 30 June

- 8:30 Session on Lake ice Chair: Georgiy Kirillin  
8:30 Keynote talk: Nikolai Granin, Ilya Aslamov, Vladimir Kozlov, Andrey Zhdanov and Konstantin kucher — 62A127 “*Ice phenomena on Lake Baikal*”  
9:10 Jennifer Sobiech and Wolfgang Dierking — 62A037 “*Monitoring Lake-ice decay with Imaging Radar in the Siberian Arctic*”  
9:30 Tao Che, Xin Li and Liyun Dai — 62A188 “*Monitoring freeze-up and break-up date of big lakes in the Northern Hemisphere using SMMR and SSM/I time series data*”  
9:50 Eirik Malnes, Heidi Hinberg and Olli-Pekka Mattila — 62A158 “*A multisensor monitoring system for lake ice parameters*”

10:10–10:40 *Coffee break*

- 10:40 Session on remote sensing of snow Chair: Susanne Ingvander  
10:40 Sari Metsämäki, Olli-Pekka Mattila and Kirsikka Niemi — 62A109 “*Continental-scale mapping of fractional snow cover in Eurasian boreal forests and tundra using optical satellite data*”  
11:00 Kirsikka Niemi, Sari Metsämäki, Jouni Pulliainen, Hanne Suokanerva, Kristin Böttcher, Matti Leppäranta and Petri Pellikka — 62A076 “*The behaviour of mast-borne spectra in a snow-covered boreal forest*”  
11:20 Thomas Nagler, Gabriele Bippus, Helmut Rott, Christian Schiller, Sari Metsämäki, Jouni Pulliainen, Hans Larsen, Rune Solberg, Eirik Malnes, Andrei Diamandi, Andreas Wiesmann and David Gustafsson — 62A226 “*Monitoring snow and land ice using satellite data in the GMES project Cryoland*”  
11:40 Galina Ragulina, Kjetil Melvold and Tuomo Saloranta — 62A108 “*Snow distribution investigations on Hardangervidda mountain plateau in 2008-2011, based on GPR-measurements*”  
12:00 Miia Salminen — 62A084 “*Development of optical remote sensing methods for seasonal snow cover applications*”  
12:20 Onni Järvinen and Matti Leppäranta — 62A031 “*Heat and mass balance of snow patches in summer in Basen nunatak, Dronning Maud Land*”

12:40 *Lunch*

13:45 Excursion

- boat trip Lake Vesijärvi – Lake Päijänne – Lehmonkärki (3 hours)
- sauna, dinner at beach, party at Lehmonkärki lake shore
- return to Lahti by bus 22 – 23 hrs

## Thursday, 31 May 2012

- 8:30 Session on frozen ground and glaciers Chair: Michael Kuhn  
Keynote: Vladimir V. Melentyev and I V Matelionok — 62A222 “*Improved theoretical model of emissivity in microwave and changing of the parameters by using AMSR-E*”
- 9:00 Kimmo Rautiainen, Jouni Pulliainen, Juha Lemmetyinen, Kristin Böttcher, Anna Kontu and Jaakko Ikonen — 62A130 “*Global detection of soil freezing and thawing*”
- 9:20 Tomas Kohout, Michal Bucko and Kai Rasmus — 62A150 “*Nondestructive investigation of palsas using ground penetrating radar*”
- 9:40 Mihaela Triglav-Čekada and Matej Gabrovec — 62A095 “*Documentation of Triglav glacier using non-metric panoramic images*”
- 10:00 Florian Karner, Friedrich Obleitner, Florian Bilgeri, Jack Kohler, Georg Jocher and Joachim Reuder — 62A119 “*Surface energy and mass balance along the central flow line of Kongsvegen glacier, Svalbard*”

*10:20–10:50 Coffee break*

- 10:50 Session on sea ice modelling and remote sensing Chair: Jari Haapala
- 10:50 Juha Karvonen — 62A042 “*Tracking of the motion of recognizable sea ice floes from coastal radar image sequences*”
- 11:10 Anders Berg and Leif Eriksson — 62A213 “*Evaluation of a sea ice drift algorithm using Synthetic Aperture Radar images*”
- 11:30 Agnieszka Herman — 62A055 “*Molecular-dynamics simulation of sea-ice at medium ice concentrations*”
- 11:50 Øystein Rudfjord, Øivind Due Trier and Rune Solberg — 62A102 “*Automatic estimation of seasonal sea ice thickness with MODIS data*”
- 12:10 Marko Mäkynen, Bin Cheng and Markku Similä — 62A166 “*On the accuracy of the thin ice thickness retrieval using MODIS thermal imagery over the Arctic first year ice*”

*12:30 Lunch break (buffet lunches are served in Sibeliustalo main hall)*

- 14:00 Session on snow Chair: Michel Lehning
- 14:00 Lino Schmid, Christop Mitterer, Achim Hellig, Jürg Schweizer, Olaf Elsen, Robert Okorn, Georg Brunnhöfer and Thomas Platzer — 62A202 “*Deducing the temporal evolution of snow properties from upward-looking radar systems*”
- 14:20 Konosuke Sugiura — 62A048 “*Accuracy of the seasonal snow distribution in the Lena River basin, Siberia*”
- 14:40 Ahmet Emre Tekeli, Ibrahim Sönmez and Erdem Erdi — 62A175 “*Temperature, precipitation and snow cover changes over Türkiye*”
- 15:00 Kjetil Melvold and Thomas Skaugen — 62A160 “*Spatial variability of snow depth determined from airborne laser scanning: implication for snow course design example from Hardangervidda southern Norway*”
- 15:20 Hendrik Huwald, Chad W. Higgins, Sian R. Williams, Anne W. Nolin, Stephen A. Drake, John S. Selker and Marc B. Parlange — 62A164 “*Potential of fiber-optic distributed temperature sensing for alpine snowpack measurements*”
- 15:40 Christine Groot Zwaaftink and Michael Lehning — 62A227 “*Quantifying drifting snow sublimation in an Alpine catchment*”

*Coffee break and Poster session*

19:00 Banquet *Officers’ club, Lahti*

## Friday, 1 June 2012

- 8:30 Session on Sea Ice Physics *Chair: Martin Doble*  
8:30 Keynote talk: Simon Prinsenberg, IK Peterson, J Scott Holladay and Louise Lalumiere — 62A184 “*Observing the ice and snow pack ice properties in Canadian coastal waters*”  
9:00 Keguang Wang, Caixin Wang, Sebastian Gerland, Mats Granskog and Christina Pedersen — 62A207 “*ALVERT: A new sea ice albedo parameterization through successive combination of vertical layers*”  
9:20 Jari Haapala, Mikko Lensu, Jonna Lehtiranta and Christian Haas — 62A156 “*Inter-annual variability of deformed ice production in the Baltic Sea*”  
9:40 Mikko Lensu, Bruce C. Elder and Jari Haapala — 62A194 “*Comparison of ice stress records in terms of extremal value analysis*”  
10:00 Liqiong Shi, Caixin Wang Sebastian Gerland and Angelika H.H. Renner — 62A125 “*Comparison of sea ice texture at lower and higher latitudes*”

*10:20–10:50 Coffee break*

- 10:50 Session on snow *Chair: Frederick Flin*  
10:50 Charles Fierz, Laura Anne Bakermans, Bruce Jamieson and Michael Lehning — 62A139 “*Short wave radiation penetration into the snowpack: model verification with snow temperatures*”  
11:10 Susanne Ingvander, Gunhild Rosqvist, Jonas Svensson and Helen Dahlke — 62A229 “*Seasonal and inter-annual variability of black carbon in the snow pack of Storglaciären, Northern Sweden*”  
11:30 Shunsuke Miyata — 62A209 “*Sensitivity analysis of degree-day method and snowmelt rate factor to meteorological condition comparing with a heat balance model*”  
11:50 Chris Derksen, Arvids Silis, Juha Lemmetyinen, Jouni Pulliainen and Matthew Sturm — 62A169 “*Physical properties of high Arctic versus sub-Arctic snow: implications for snow emission modeling*”  
12:10 Anna Kontu, Juho Vehviläinen, Juha Lemmetyinen and Jouni Pulliainen — 62A132 “*Simulating microwave brightness temperature of snow with SNOWPACK and HUT snow model*”

*12:30 Lunch break (buffet lunches are served in Sibeliustalo main hall)*

- 13:30 Session on snow modelling *Chair: Charles Fierz*  
13:30 Erik Brun, Vincent Vionnet, Bertrand Decharme, Fatima Karbou, Yannick Peings, Samuel Morin and Rémi Valette — 62A078 “*Simulation of northern Eurasian local daily snow depth, mass and density using a detailed snowpack model and meteorological reanalyses*”  
13:50 Daria Kliver — 62A035 “*Seasonal influences on snowfall in the United States with statistical forecasting applications*”  
14:10 Hans-Werner Jacobi, Martin Ménégoz and Hubert Gallée — 62A215 “*Development of a detailed snowpack model to study the impact of black carbon on the seasonal snow*”  
14:30 Rajeev S. Ahluwalia, Shiv P. Rai and Sanjay K. Jain — 62A133 “*Assessment of Snowmelt runoff using modelling and Isotope approach, A Case Study from Western Himalaya, India*”

*14:50 Coffee break*

- 15:30 Session continues *Chair: Sari Metsämäki*  
15:10 Cecile Menard, Richard Essery, Jouni Pulliainen and John Pomeroy — 62A103 “*Modelling snow distribution and albedo of shrub tundra*”  
15:30 Kari Luojus, Jouni Pulliainen, Matias Takala, Juval Cohen, Jaakko Ikonen and Jouni Räisänen — 62A141 “*Investigating snow accumulation on northern hemisphere by utilizing satellite retrievals and climate model simulations*”  
15:50 Yoshihiro Asaoka and Yuji Kominami — 62A218 “*Interannual variability of snow water equivalent over Japan with a snow model and satellite-derived snow cover data*”  
16:10 Juval Cohen, Jouni Pulliainen, Kari Luojus, Bernt Johansen and Lauri Oksanen — 62A140 “*The influence of vegetation on snowmelt and surface albedo*”

16:30 Thomas Skaugen and Frode Randen — 62A162 “*Updating the snow reservoir in hydrological models from satellite derived snow covered area*”

16:50 Closing

## Posters

Kunio Shirasawa, Naoto Ebuchi and Matti Leppäranta — “62A007 *Ice edge dynamics from X-band radar and HF radar coastal stations*”

Daiki NOMURA, Mats Granskog, Philipp Assmy, Gernot Nehrke, Yubin Hu, Michael Fischer and Gerhard Dieckmann — 62A034 “*Characterization of ikaite (CaCO<sub>3</sub>·6H<sub>2</sub>O) crystals in first-year Arctic sea ice north of Svalbard: Crystal size and melted-ice total alkalinity*”

Martin Doble and Jean-Raymond Bidlot — 62A051 “*Cross-MIZ wave attenuation coefficients derived from an in-situ wavebuoy and the WAM model*”

Antero Kukko, Sanna Kaasalainen, Harri Kaartinen and Kati Anttila — 62A082 “*Mobile laser scanning in seasonal snow cover change detection*”

Cecilie Rolstad Denby and John Hulth — 62A083 “*Estimating spatially distributed snow accumulation from glacier snow line tracking and backward calculation of melt*”

Peng Lu, Zhijun Li, Liqiong Shi and Wenfeng Huang — 62A086 “*Marine radar observations on icebergs distribution in summer Southern Ocean*”

Dagrun Vikhamar-Schuler and Karsten Müller — 62A087 “*Snow modeling using SURFEX with the CROCUS snow scheme for Norway*”

Caixin Wang, Keguang Wang and Matti Leppäranta — 62A088 “*Impact of Antarctic ice shelf-ocean interaction on polar sea ice cover*”

James Foster, Dorothy Hall, David Robinson and Tom Estilow — 62A090 “*Date of Snowmelt at 60 Degrees and 70 Degrees North Latitude as Determined from Visible Satellite Data*”

Bing Tan, Peng Lu, Zhijun Li, Christian Haas, Marcel Nicolaus and Runling Li — 62A092 “*Form drag of pressure ridges and drag coefficient in the Northwestern Weddell Sea in winter*”

Sirpa Rasmus, Jouko Kumpula and Jukka Siitari — 62A094 “*Effect of snow structure on reindeer winter mortality and calf production in Finnish Lapland – combining snow modeling to weather and reindeer data*”

Timo Saarinen, Sirpa Rasmus, Robin Lundell, Olli-Kalle Kauppinen and Heikki Hänninen — 62A096 “*Responses of boreal dwarf shrubs to changing snow conditions – a snow manipulation experiment*”

Tuomo Saloranta — 62A098 “*Statistical evaluation of the seNorge snow model and the snow maps for Norway*”

Dagrun Vikhamar-Schuler, John M. Edwards, Gabriel Rooney and Jørn Kristiansen — 62A100 “*Evaluation of JULES multi-layer snow scheme for Norwegian snow conditions*”

Mats P. Bjørkman, Carmen Vega, Veijo Pohjola and Elisabeth Isaksson — 62A104 “*A chemical view of Svalbard snow*”

Carmen Vega, Veijo A. Pohjola, Rickard Pettersson, Elisabeth Isaksson, Margit Schwikowski and Emilie Beaudon — 62A106 “*In situ melting experiments: evaluating nitrate relocation after percolation events*”

Sunal Ojha — 62A107 “*Analysis of Snow and Glaciers in the Himalayan region with perspective of climate change using remote sensing data*”

Yinke Dou, Ruibo Lei and Jianmin Qin — 62A110 “*A modern concept for monitoring snow/ice thickness based on a coplanar multi-electrode capacitance sensor*”

Tomoko Nitta, Kei Yoshimura, Kumiko Takata, Ryouta O'ishi, Shinjiro Kanae, Taikan Oki and Glen E. Liston — 62A111 “*Representing subgrid snow cover and snow depth variability in a global land model: offline validation*”

Hotaek Park, Hironori Yabuki and Tetsuo Ohata — 62A114 “*Variability and trends in the Arctic terrestrial snow extent and depth*”

Peter Jansson, Hans W. Linderholm and Sven Blomqvist — 62A116 “*Small glaciers as amplifiers for environmental monitoring through chemical analysis of accumulated snow, an example from Storglaciären, Sweden*”

Peter Jansson and Hans W. Linderholm — 62A117 “*The sub-seasonal buildup of winter accumulation on Storglaciären, Sweden, from a combination of local meteorological measurements, snow chemistry and re-analysis wind-field data*”

Hiroki Shibata, Koh Izumiyama, Kazutaka Tateyama, Hiroyuki Enomoto and Shuhei Takahashi — 62A123 “*Sea ice coverage variability on the Northern Sea Routes, 1980–2010*”

Liqiong Shi, Peng Lu, Qing Jia, Zhijun Li and Matti Leppäranta — 62A124 “*Study on thermal diffusivity of natural fresh-water ice*”

Kati Anttila, Terhikki Manninen, Tuure Karjalainen, Panu Lahtinen, Aku Riihelä and Niilo Siljamo — 62A126 “*The development and spatial variation of snow surface roughness in Sodankylä Finnish Lapland in 2009-2010*”

Olli-Pekka Mattila, Eirik Malnes, Heidi Hindberg and Hanna Alasalmi — 62A128 “*SAR and Optical Satellite Products for Monitoring Lake Ice – Comparison with High-Resolution Satellite Data and In-Situ Observations of Lake Ice Phenology*”

Sascha Willmes, Marcel Nicolaus and Christian Haas — 62A129 “*The 19 to 89 GHz emissivity response of snow on sea ice to early-melt processes*”

Jee-Hoon Jeong, Hans W. Linderholm, Tinghai Ou, Deliang Chen, Baek-Minn Kim, Sung-Ho Woo and Peter Jansson — 62A131 “*Contributions of Snow Depth Initialization to Seasonal Prediction of Surface Air Temperature for Winter Season*”

Heidi Bache Stranden — 62A134 “*Results from Filefjell and Anestølen snow research stations*”

Sonja Kivinen, Elina Kaarlejärvi, Kirsti Jylhä and Jouni Räisänen — 62A136 “*Warming climate and threatened snowbed and snow patch habitats in northwestern Finland*”

Caixin Wang, Wang, Sebastian Gerland, Bin Cheng and Olga Pavlova — 62A137 “*A model study of snow ice and superimposed ice formation in an Arctic fjord*”

Keguang Wang, Jens Debernard, Ann Kristin Sperrevik, Pål Erik Isachsen and Thomas Lavergne — 62A138 “*A combined optimal interpolation and nudging scheme for the assimilation of OSISAF sea ice concentration into ROMS*”

Stefan Hendricks, Andreas A. Pfaffhuber and Lasse Rabenstein — 62A142 “*Electromagnetic methods for first-year sea ice pressure ridge surveys*”

Sanja Forsstrøm, Elisabeth Isaksson, Ragnhild B. Skeie, Johan Strøm, Sebastian Gerland and Christina A. Pedersen — 62A144 “*Elemental carbon measurements in Arctic snow packs*”

Angelika Renner, Stefan Hendricks and Sebastian Gerland — 62A146 “*Large-scale characteristics of first year sea ice in spring and summer north of Svalbard*”

Mikko Lensu, Jari Haapala and Christian Haas — 62A147 “*Comparison of Baltic ice thickness records from sonar and airborne EM measurements*”



Tom Kokkonen — 62A148 “*River Kymijoki Ice Phenomena*”

Iris Ehlert and Dirk Notz — 62A151 “*The interaction between frost flowers and sea ice*”

Yuliya Zaika, Alexandr Volkov and Vikulina Marina — 62A153 “*Observations of snow cover properties and stratigraphy in the Khibiny Mountains area, Russia*”

Yukari Takeuchi and Hiroyuki Hirashima — 62A155 “*Snowpack estimations in the starting zone of large-scale snow avalanches in the Makunosawa valley, Myoko, Japan*”

Jari Haapala, Mikko Lensu, Angelika Renner, Marie Dumont, Mats Granskog and Sebastian Gerland — 62A157 “*Small scale horizontal variability of snow, ice thickness and freeboard in the Svalbard CryoVEx 2011 region*”

Eirik Malnes, Cecilia Johanson, Hans Tømmervik, Jan Åge Riseth and Harald Johnsen — 62A159 “*Monitoring the effect of extreme winter warming events on snow covered reindeer pastures using satellite remote sensing data*”

Kjetil Melvold and Thomas Skaugen — 62A161 “*Spatial distribution of snow depth at Hardangervidda Mountain, Norway, measured by airborne laser scanning*”

Markku Similä, Marko Mäkynen, Bin Cheng and Eero Rinne — 62A163 “*Multisensor and thermodynamic sea ice model based sea ice thickness charts over the Kara and Barents Seas during the winter 2008-2009*”

Sergey Karetnikov, Matti Leppäranta and Anni Jokiniemi — 62A165 “*Reconstruction of seasonal evolution of Lake Ladoga ice cover using the air temperature*”

Ross Brown and Chris Derksen — 62A170 “*Changes in Arctic snow cover during the satellite era*”

Jing Li, Shiyin Liu and Junfeng Wei — 62A172 “*The spatial variable response of snow cover in the Tarim River Basin to climate change*”

Xianbo Zhao, Zhenping Liu, Shiguo Xu and Tiejun Liu — 62A176 “*Freeze-Thaw Lead to Black Soil Erosion and Non-Point Source Pollution Preferences: An Alterable Fuzzy Optimum Model of Semi-structural Decision Applied*”

Xianbo Zhao, Zhenping Liu, Shiguo Xu and Tiejun Liu — 62A177 “*An Experimental Study of the Freeze-Thaw Lead to Black Soil Erosion and Non-Point Source Pollution*”

Bin Cheng, Marko Mäkynen, Markku Similä, Laura Rontu and Timo Vihma — 62A180 “*Modelling snow and ice thickness in a coastal region of the Kara Sea*”

Bin Cheng, Timo Vihma, Laura Rontu, Anna Kontu, Juha Lemmetyinen and Jouni Pulliainen — 62A181 “*Evolution of snow and ice thickness in Lake Orajärvi, northern Finland*”

Caixin Wang, Sebastian Gerland, Na Li, Zhijun Li, Bin Cheng, Marcel Nicolaus, Don Perovich, Mats A. Granskog, Liqiong Shi, RuiBo Lei, Qun Li, Peng Lu and Jari Haapala — 62A186 “*An international research and mobility exchange project: Advance Modeling and Observing solar Radiation of Arctic Sea ice (AMORA)*”

Iina Ronkainen — 62A191 “*Baltic Sea ice time series*”

Susanne Ingvander, Helen Dahlke and Peter Jansson — 62A193 “*In situ sampled Snow Particle Sizes of the east Antarctic Ice Sheet and their relation to physical and remotely sensed snow surface parameters*”

Blaize Denfeld and Gesa Weyhenmeyer — 62A197 “*Under Ice Accumulation of CO<sub>2</sub> in Lake Water and Subsequent Spring CO<sub>2</sub> Evasion*”

Shinjiro Ohkubo, Yuki-yoshi IWATA, Tomoyoshi Hirota — 62A198 “*Influence of snow-cover and soil-frost variations on continuously monitored CO<sub>2</sub> fluxes from agricultural land*”

Anca Munteanu, Narcisa Milian, Laura Comanescu and Alexandru Nedelea — 62A203 “*The snow condition, the avalanches caused and the dynamic of the avalanches corridors during the winter 2007-2008. Case study, Padinile Frumoase (Piatra Craiului Mountains, Romania)*”

Yuki-yoshi Iwata, Tomotsugu Yazaki, Junichi Arima, Shinji Suzuki, Masaki Hayashi and Tomoyoshi Hirota — 62A204 “*Impacts of the change of snowfall pattern to the frost depth, water movement and nitrate movement in an arable field in northernmost Japan*”

ZhiJun Li, Wenfeng Huang, Peng Lu, Sebastian Gerland and Mats A. Granskog — 62A205 “*On the measurements and studies of Arctic melt pond morphology*”

Hiroaki Kawase, Masayuki Hara, Takao Yoshikane and Fujio Kimura — 62A206 “*Uncertainty in snow cover changes over the Central Japan projected by a regional climate model in the early 21st Century*”

Jari Uusikivi — 62A208 “*Forecasting ice jams during river breakup using statistical model*”

Martin Menegoz, Hans-Werner Jacobi and Hubert Gallée — 62A210 “*Modelling precipitation and snow cover in the Himalayas with a regional model MAR*”

Aleksandra Mazur — 62A212 “*Baltic Sea Ice extent and concentration changes during winter 2010*”

Egle Grebliauskaite, Toma Mingelaite and Inga Dailidienė — 62A217 “*Different winter types impact on the ice cover formation on Curonian Lagoon*”

Eliina Jaatinen, Antti Westerlund and Ari Seinä — 62A219 “*Validation of the long term Baltic Sea ensemble ice forecast*”

Kouji Kim and Yukari Takeuchi — 62A220 “*Evaluation of blade penetrating application*”

Xieyao Ma, Hiroaki Kawase, Takao Yoshikane, Noriko Ishizaki, Mikiko Fujita, Sachiko Adachi and Fujio Kimura — 62A221 “*River discharge projection to future climate change in a snowy region, Japan*”

Li Runling, Lu Peng and Li Zhijun — 62A223 “*Observation of Ice and Water under Ice in Aquaculture Zone in Liaodong Gulf*”

Samuel Morin, Florent Domne, Anne-Sophie Taillandier, Eric Brun, Neige Calonne, Matthieu Lafaysse and William Simpson — 62A224 “*Measurements and simulations of the vertical profile of snow permeability at Fairbanks, Alaska*”

Inese Latkovska, Elba Apsite, Didzis Elferts and Liga Kurpniece — 62A225 “*Changes in ice seasons of rivers and lakes in Latvia*”

Inga Zaitseva-Pärnaste and Tarmo Soomere — 62A228 “*Interannual variations of ice cover and wave energy flux in the north-eastern Baltic Sea*”

Christine Groot Zwaaftink, Katherine C. Leonard, Roland Meister, Daniel Lussi and Michael Lehning — 62A230 “*Drifting snow measurements performed with different sensors*”

Helen Dahlke, Ype Van Der Velde and Nikki Vercauteren — 62A232 “*Isotopic evolution of two snowpacks in the Tarfala valley, northern Sweden and its relation to changes in snowpack mass balance*”

David Gustafsson, Fredrik Wetterhall, Nils Sundström, Jesper Ahlberg and Angela Lundberg — 62A233 “*Snow melt runoff predictions assimilating seasonal weather forecasts and ground penetrating radar measurements of snow water equivalent*”

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