ILTS International Symposium on Low Temperature Science

30 November – 2 December 2015
Auditorium, Institute of Low Temperature Science (ILTS), Hokkaido University

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Program

► Monday, 30 November 2015 ◄

Plenary Session, 13:00-14:30
Chair: Gen Sazaki

13:00-13:10 Opening
Ralf Greve (Local Organizing Committee, ILTS)
Hiroyuki Enomoto (Director, Arctic Environment Research Center, NIPR)

K-01 13:10-13:50 Keynote Speech
Naoto Ebuchi (Director of ILTS)
Challenges toward a new era in low temperature science

K-02 13:50-14:30 Keynote Speech
Ilka Weikusat (AWI, Bremerhaven / University of Tübingen, Germany)
Ice physics studies in the light of global warming

Coffee Break, 14:30-15:00

Session 1. Water and Material Cycles, 15:00-18:00
Chair: Tsutomu Watanabe

1-01 15:00-15:30 Tetsuya Hiyama (Nagoya University)
Changes in hydrologic cycle under current global warming in eastern Siberia

1-02 15:30-16:10 Gabriel Katul (Duke University, Durham, NC, USA)
Optimality theories at the leaf scale and their role in regulating the hydrological cycle

1-03 16:10-16:35 Yuzo Miyazaki (ILTS)
Origin and formation mechanisms of atmospheric organic aerosols in marine and terrestrial ecosystems

1-04 16:35-17:05 Shoshiro Minobe (Graduate School of Science, Hokkaido University)
Ocean to atmosphere influences in mid-latitudes

1-05 17:05-17:35 Hiroyuki Enomoto (NIPR / SOKENDAI, Tokyo)
Sea ice decrease in the Arctic and increase in the Southern Ocean – Discussions from the bipolar perspectives

1-06 17:35-18:00 Shigeru Aoki (ILTS)
ROBOTICA: Research of Ocean-ice BOundary InTeraction and Change around Antarctica
Session 2. Frontier Ice and Snow Science, 09:00-12:00  
Chair: Akira Kouchi

2-01 09:00-09:25 Ayako Abe-Ouchi (University of Tokyo)  
How and when to terminate the ice ages?

2-02 09:25-09:45 Fuyuki Saito (JAMSTEC, Yokohama)  
Development and performance of a numerical ice-sheet/shelf/stream model IcIES

2-03 09:45-10:15 Heinz Blatter (ETH Zurich, Switzerland)  
Modelling polythermal ice sheets and glaciers

2-04 10:15-10:35 Shin Sugiyama (ILTS)  
Ice mass loss in northwestern Greenland

2-05 10:35-11:00 Shuji Fujita (NIPR / SOKENDAI, Tokyo)  
Recent progress in understanding densification phenomena of polar firn: textural effects and some soluble impurities control creep deformation

2-06 11:00-11:20 Gen Sazaki (ILTS)  
In-situ visualization of quasi-liquid layers on ice surfaces by advanced optical microscopy

2-07 11:20-11:40 Yuki Kimura (ILTS)  
Nucleation from a supersaturated vapor

2-08 11:40-12:00 Hidekazu Tanaka (ILTS)  
Homogeneous SPC/E water nucleation in large molecular dynamics simulations

Lunch Break, 12:00-13:30

Session 3. Environmental Biology, 13:30-16:30  
Chair: Toshihiko Hara

3-01 13:30-14:10 Wilhelm Hagen (University of Bremen, Germany)  
Life history traits and ecophysiological adaptations in polar zooplankton and fish

3-02 14:10-14:35 Yasuhiro Kasahara (ILTS)  
Proteome analysis of bacterial genes specifically expressed in soil

3-03 14:35-15:00 Akihiro Sumida (ILTS)  
Boreal forest ecosystems as related to recent advances in ecological and physiological studies of trees

3-04 15:00-15:25 Ryouichi Tanaka (ILTS)  
Photosynthesis at low temperatures: The roles of light-harvesting-like proteins in the biogenesis and protection of photosystems

3-05 15:25-15:50 Makio Yokono (ILTS)  
PSI-PSII megacomplex in evergreen plants
3-06  15:50-16:30 Michael Hippler (University of Münster, Germany)
Calredoxin mediates calcium- and redox-dependent regulation of photosynthesis and ROS defense in Chlamydomonas reinhardtii

Poster Session (with coffee and tea), 16:30-18:00  Chair: Gen Sazaki

P1-01 Poonam Tyagi (ILTS / GSES)
Soil microorganisms and terrestrial plant metabolites in marine aerosols from the western North Pacific: molecular distribution of hydroxy fatty acids over Chichijima Island

P1-02 Md. Mozammel Haque (ILTS / GSES)
Contribution of biogenic VOCs to secondary organic aerosols in Alaska atmosphere

P1-03 Fumihiro Mori (ILTS / GSES)
Turbulence structure measurement in atmospheric surface layers visualized by a PIV technique

P1-04 Haruhiko Kashiwase (NIPR, Tokyo / ILTS)
Ice-ocean albedo feedback effect on recent drastic reduction in Arctic sea ice cover

P1-05 Takuya Nakanowatari (NIPR, Tokyo / ILTS)
Predictability of the Barents Sea ice in early winter: Remote effects of oceanic and atmospheric thermal conditions from the North Atlantic

P1-06 Tatsuru Sato (ILTS)
Investigation of ice-ocean interaction on Lutzow-Holm Bay, East Antarctica, from geographic, ocean data analysis and modeling

P2-01 Takashi Obase (University of Tokyo)
Antarctic ice shelves’ basal melting in glacial and warm climates

P2-02 Ralf Greve (ILTS)
A simple parameterisation of ice-shelf basal melting for long-term, large-scale simulations of the Antarctic ice sheet

P2-03 Hakime Seddik (ILTS)
Towards a GPU-accelerated ice sheet model: design philosophy and implementation

P2-04 Yoshinori Iizuka (ILTS)
Shallow ice core project on south-east dome in Greenland – Drilling report and science trench of the ice core

P2-05 Evgeny A. Podolskiy (ILTS)
Tide-modulated seismicity in the Bowdoin glacier calving front, Northwestern Greenland

P2-06 Masahiro Minowa (ILTS / GSES)
Seasonal variations in the dynamics of Bowdoin Glacier, northwest Greenland

P2-07 Daiki Sakakibara (ILTS / GSES)
Seasonal changes in ice front position and flow speed of marine terminating outlet glaciers in northwestern Greenland
P2-08  Shun Tsutaki (NIPR, Tokyo / ILTS)  
Field observations of surface mass balance, ice velocity and ice temperature on Qaanaaq ice cap, northwestern Greenland

P2-09  Naoki Katayama (ILTS / GSES)  
Elevation change of calving glaciers in northwestern Greenland analyzed by satellite data

P2-10  Naoya Morimoto (ILTS / GSES)  
Surface elevation change on Trambau Glacier, Nepal Himalaya, based on remote sensing techniques

P2-11  Ken-ichiro Murata (ILTS)  
Wetting of quasi-liquid layers on ice surfaces: statics and dynamics

P2-12  Ken Nagashima (ILTS)  
Liquid layers on ice surfaces induced by hydrochloric gas

P3-01  Atsushi Takabayashi (ILTS)  
Evolution of photosystems in green algae through ice ages

P3-02  Mia Terashima (ILTS)  
Intracellular “energy bento-box”: Flow cytometry as a method to sort microalgae and bacteria based on cell energy reserves

P3-03  Miho Watanabe (ILTS / GSES)  
Characterization of a novel sulfate-reducing bacterium possessing desulfoviridin and vibroid morphology

P3-04  Tomohiro Watanabe (ILTS)  
Diversity of sulfate-reducing and sulfur-oxidizing organisms in sediments of Antarctic lakes

P4-01  Hiroyuki Enomoto (NIPR / SOKENDAI, Tokyo)  
Okhotsk study and connection to the Arctic – Sea ice, environment and life

P4-02  Akane Tsushima (NIPR, Tokyo)  
Reconstruction of paleo-environmental changes in the northwestern North Pacific region from an alpine ice core

P4-03  Tatsuro Karaki (ILTS / GSES)  
On the structure and dynamics of the Soya Warm Current from the viewpoint of buoyancy arrest

P4-04  Kaoru Ito (ILTS / GSES)  
Interactions of internal waves and submeso-scale vortex

P4-05  Ryu Saiki (ILTS / GSES)  
A mechanism of ice-band pattern formation caused by resonant interaction between sea ice and internal waves

P5-01  Toru Takatsuka (ILTS)  
Technical Support in ILTS, 2015

Reception, 18:00-20:00 (ILTS Lecture Room 215)
Wednesday, 2 December 2015

Session 4. Research on the Pan-Okhotsk Region, 09:00-12:00  Chair: Humio Mitsudera

4-01  09:00-09:40 Takeshi Nakatsuka (RIHN, Kyoto)
      Climate variations in East Asia and Japan during the last two millennia

4-02  09:40-10:20 Wonsun Park (GEOMAR, Kiel, Germany)
      Predictability in the North Pacific

4-03  10:20-11:00 Teruo Aoki (MRI, Tsukuba)
      Modeling of the radiative properties of snow and its application to climate study

4-04  11:00-11:30 Sumito Matoba (ILTS)
      Climate changes in the North Pacific region reconstructed from alpine ice cores

4-05  11:30-12:00 Jun Nishioka (ILTS)
      Biogeochemical system in the Pan-Okhotsk area

Closing, 12:00-12:15
      Atsumu Ohmura (ETH Zurich, Switzerland)
      Ralf Greve (Local Organizing Committee, ILTS)

Note

In the above program, only the speakers are listed.
For the full list of authors, please see the corresponding abstracts.

Abbreviations

AWI  Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research
GSES  Graduate School of Environmental Science (Hokkaido University)
ILTS  Institute of Low Temperature Science (Hokkaido University)
JAMSTEC  Japan Agency for Marine-Earth Science and Technology
MRI  Meteorological Research Institute
NIPR  National Institute of Polar Research
RIHN  Research Institute for Humanity and Nature
SOKENDAI  Graduate University for Advanced Studies