Annals of Glaciology 34 2002

PROGRAMME OF SESSIONS

Monday, 4 June 2001

OPENING OF SYMPOSIUM: Antonio Busalacchi, Director, Earth System Studies Interdisciplinary Center (University of Maryland)
Robert A. Bindschadler, President, International Glaciological Society
Dorothy K. Hall, Local Organizing Committee
Jan-Gunnar Winther, Chief Editor

0900–1020 h CHAIR: Jan-Gunnar Winther

SESSION 1: GRAIN SIZE AND FABRIC

Neal Young, Michel Fily and Glenn Hyland: Surface grain size of the Antarctic snow cover derived from ATSR-2 data

C. S. M. Doake, H. F. J. Corr and A. Jenkins: Polarisation of radio waves transmitted through Antarctic ice shelves

Eija Kärkäs, Hardy B. Granberg, Chantale Lavoie, Kimmo Kanto, Kai Rasmus and Matti Leppäranta: Physical properties of the seasonal snow cover in Dronning Maud Land, East Antarctica

Shuji Fujita, Hideo Maeno, Teruo Furukawa and Kenichi Matsuoka: Scattering of VHF radio waves from within the top 700 m of the Antarctic ice sheet and its relation to the depositional environment: a case study along the Syowa–Mizuho–Dome F traverse

1050–1230 h CHAIR: Robert A. Bindschadler

SESSION 2: MASS BALANCE

Helen A. Fricker, Neal Young, Ian Allison and Richard Coleman: Iceberg calving from the Amery Ice Shelf, East Antarctica

Frank Paul, Andreas Kääb, Max Maisch, Tobias Kellenberger and Wilfried Haeberli: The new remote sensing derived Swiss glacier inventory. I. Methods

Andreas Kääb, Frank Paul, Max Maisch, Martin Hoelzle and Wilfried Haeberli: The new remote sensing derived Swiss glacier inventory. II. First results

Martiyn de Ruyter de Wildt and J. Oerlemans: Glacier mass balance from space

F. G. L. Cawkwell and J. L. Bamber: The impact of cloud cover on the net radiation budget of the Greenland ice sheet

1400–1540 h CHAIR: H. Jay Zwally

SESSION 3: TEMPERATURE

Dale P. Winebrenner and Christopher A. Shuman: Mean surface temperature on the Greenland and Antarctic ice sheets mapped from observations of microwave emission

Christopher A. Shuman and Josefino C. Comiso: In situ and satellite surface temperature records in Antarctica

Sarah B. Das, Richard B. Alley, David B. Reusch and Christopher A. Shuman: Temperature variability at Siple Dome, West Antarctica, derived from ECMWF re-analyses, SSM/I and SMMR brightness temperatures and AWS records

Sylviane Surdyk: Low microwave brightness temperatures in central Antarctica: observed features and implications

Mark A. Fahnestock, Waleed Abdalati and Christopher A. Shuman: Long melt seasons on ice shelves of the Antarctic Peninsula: an analysis using satellite-based microwave emission measurements

1610–1730 h CHAIR: Christopher A. Shuman

SESSION 4: TEMPERATURE

Neal Young, Tim Gale and Glenn Hyland: Melt/freeze rates under Lambert Glacier–Amery Ice Shelf

Jiancheng Shi: On estimation of snow wetness with ASAR

Thorsten Markus, Donald J. Cavalieri and Alvaro Ivanoff: The potential of using Landsat 7 ETM+ for the classification of sea ice surface conditions during summer

Ian A. Brown and Bengt Lundén: Seasonal changes in SAR backscatter from an Arctic icecap

Tuesday, 5 June 2001

0830–1010 h CHAIR: Dorothy K. Hall

SESSION 5: MAPPING SNOW COVER

Thomas H. Painter, Jeff Dozier and Robert O. Green: Alpine snow algae concentration using AVIRIS

Anne Walker and Arvids Silis: Snow cover variations over the Mackenzie River basin derived from SSM/I passive microwave satellite data

Nelly M. Mognard and Edward G. Josberger: Northern Great Plains seasonal evolution of snowpack parameters from satellite passive microwave measurements

Frédérique Pivot, Claude Kergomard and Claude Duguay: Use of passive microwave data to monitor spatial and temporal variations of snow cover at treeline near Churchill, Manitoba, Canada

Rune Solberg: Investigation of the snow-cover mapping accuracy using MODIS

1040–1210 h CHAIR: Nelly M. Mognard

SESSION 6: MAPPING SNOW COVER

Jan-Gunnar Winther and Max König: Snow albedo during spring melt in Svalbard — early assessments with MODIS

Dorothy K. Hall, Richard E. J. Kelly, George A. Riggs, Alfred T. C. Chang and James L. Foster: Assessment of the relative accuracy of hemispheric-scale snow-cover maps

Manfred Stähli, Jesko Schaper and Andreas Papritz: Towards a snow depth distribution model in a heterogeneous subalpine forest using a Landsat TM image and an aerial photograph

Per Gloersen: Interannual waves in the concentrations of the Antarctic sea ice canopy

Gunnar Østrem: Historic view of Landsat

1340–1420 h CHAIR: Gunnar Østrem

SESSION 7: MAPPING GLACIERS AND ICE CAPS

Matthias Braun, Frank Rau, Franco Coren and Helmut Saurer: Delimiting glacier drainage basins using remote sensing data of various sensor types and digital elevation models of different accuracies

H. H. Kieffer, J. S. Kargel, R. Wessels and the GLIMS consortium: Global Land Ice Measurements from Space: first ASTER glacier images

1420–1730 h CHAIR: Anne E. Walker

POSTER SESSION 1

Robert O. Green, Jeff Dozier, Dar Roberts and Tom Painter: Spectral snow reflectance models for grain size and liquid water fraction in melting snow for the solar reflected spectrum

Andrew G. Klein and Julienne Stroeve: Development and validation of a snow albedo algorithm for the MODIS instrument

Richard R. Forster and Lynne M. Baumgras: Melt and freeze processes on the North Slope of Alaska detected with satellite microwave remote sensing

Richard L. Armstrong and Mary J. Brodzik: Hemispheric-scale comparison and evaluation of passive microwave snow algorithms

C. Derksen, A. Walker, E. LeDrew and B. Goodison: Monitoring central North American snow water equivalent with passive microwave imagery: algorithm evaluation and time series analysis

Frédérique Pivot, Claude Duguay and Claude Kergomard: The limits of estimating snow water equivalent with satellite synthetic aperture radar as demonstrated by the use of a ground penetrating radar (Churchill, Manitoba)

Stefan W. Vogel: The minimum extent of snow patches as a climatic indicator — use of high resolution Landsat 7 Band 8 for single band, snow-cover classification

Dagrun Vikhamar and Rune Solberg: Snow cover mapping in forest: the influence of the topography

Hiroyuki Ohno, Hironori Yabuki, Tetsuo Ohata, Divaa Erdenetsetseg, Gombo Davaa and Dambaravjaa Oyunbaatar: Distribution and its regression of relationship between snow depth and SSM/I brightness temperature difference

Li Xin, Toshio Koike and Cheng Guodong: Topographic normalization of TM-based snow mapping in rugged terrain

Tomonori Tanikawa, Teruo Aoki and Fumihiko Nishio: Retrieval of snow grain size and impurities from Airborne Multi-Spectral Scanner data using a snow Bidirectional Reflection Distribution Function model

Olivier Torinesi, Michel Fily and Christophe Genthon: Antarctic warm events over the past 20 years from remote sensing, and comparison with meteorological observations

Xuanji Wang and Jeffrey R. Key: Aggregate-area radiative flux biases

D. J. Cavalieri, T. Markus and A. Ivanoff: Comparison of DMSP SSM/I and Landsat 7 ETM+ sea ice concentrations during summer melt

Claire L. Parkinson: Trends in the length of the Southern Ocean sea ice season, 1979–1999

Hiroyuki Enomoto and Fumihiko Nishio: Satellite observation of melting and break-up of fast ice area in the Lutzow–Holm Bay, East Antarctica

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Sridhar Anandakrishnan and Jerry C. Bowling: Ice Stream D flow speed is strongly modulated by the tide beneath the Ross Ice Shelf

V. I. Lytle, A. B. Giles and R. A. Massom: Defining the fast ice edge around Antarctica using synthetic aperture radar (SAR) images

Kazutaka Tateyama, Hiroyuki Enomoto, Takenobu Toyota and Shotaro Uto: Examination of reliability of sea ice thickness derived from satellite passive microwave radiometer SSM/I

Masashige Nakayama, Kohei Cho, Haruhisa Shimoda and Fumihiko Nishio: The evaluation of sea ice types and thickness in thin ice area using satellite passive microwave data

Tingjun Zhang, Richard L. Armstrong and Jeff Smith: Investigation of the seasonal freeze/thaw cycle of soils in the GCIP region

Li Xin, Cheng Guodong, Wu Qingbai and Ding Yongjian: Modeling Chinese cryospheric change by using GIS technology

E. Ermolin, H. de Angelis and P. Skvarca: Mapping of permafrost on Vega Island, Antarctic Peninsula, using satellite images and aerial photography

Bruce H. Raup, Hugh H. Kieffer, Roger G. Barry, Andreas Kääb, Jeff Kargel, Siri Jodha Singh Khalsa, Greg Scharfen, Vincent J. Troisi, I-Pin Wang and Rick Wessels: The GLIMS glacier database: design considerations

Daniel H. Elsberg, Keith A. Echelmeyer, William D. Harrison, Virginia B. Valentine and Patricia A. Del Vecchio: ELA and terminus positions measured using an integrated video and altimetry system

Mauri S. Pelto, Maynard M. Miller, Joan Ramage and Scott McGee: Limitations and applications of remote sensing data for mass balance determination on the Taku Glacier and Lemon Creek Glacier, Alaska

Joan M. Ramage and Bryan L. Isacks: Determination of melt onset and refreeze timing on SE Alaskan icefields using SSM/I diurnal amplitude variations

M. N. Demuth, C. Hopkinson, M. Sitar, A. Pietroniro and L. Chasmer: Airborne scanning LASER terrain mapping of Peyto Glacier, Wapta and Waputik Icefields, Canada: first results and future prospects

J. Graham Cogley: Melting on Axel Heiberg Island ice caps from RADARSAT browse images

Garnet Whyte and Roger Wheate: Satellite glacier mapping in Monkman Provincial Park, British Columbia

Sagi Filin and Beáta Csathó: Improvement of elevation accuracy for mass-balance monitoring using in-flight laser calibration

Wednesday, 6 June 2001

0810–0950 h CHAIR: Richard E. J. Kelly

SESSION 8: MAPPING GLACIERS AND ICE CAPS

Gino Casassa, Katrine Smith, Andrés Rivera, José Araos, Michael Schnirch and Christoph Schneider: Inventory of glaciers in Isla Riesco, Patagonia, Chile, based on aerial photography and satellite imagery

Rick L. Wessels, Jeff Kargel and Hugh Kieffer: ASTER imaging contributions to the characterization and measurement of supraglacial lakes in the Mount Everest region of the Himalaya

Yves Arnaud: Interannual and seasonal snowline fluctuations on Sajama volcano snow cap as seen from Landsat, aerial photography and ERS radar imagery

R. E. J. Kelly: Snow and ice studies on Hardangerjøkulen, Norway using SAR

Max König, Jemma Wadham, Jan-Gunnar Winther, Jack Kohler and Anne-Marie Nuttall: Detection of superimposed ice on the glaciers Kongsvegen and Midre Lovénbreen, Svalbard, using SAR satellite imagery

1020–1200 h CHAIR: Dorothy K. Hall

SESSION 9: MAPPING SEA ICE

M. Johnston and D. Flett: First year ridges in RADARSAT ScanSAR imagery: influence of incidence angle and feature orientation

Takeshi Matsuoka, Seiho Uratsuka, Makoto Satake, Akitsugu Nadai, Toshihiko Umehara, Hideo Maeno, Hiroyuki Wakabayashi, Fumihiko Nishio and Yasushi Fukamachi: Identification of sea ice types in the Sea of Okhotsk using dual-frequency airborne SAR (Pi-SAR) data

Charles M. Bachmann, Robert A. Fusina and Timothy F. Donato: Automated classification of sea ice from RADARSAT SAR imagery using projection pursuit methods

Laura E. Chasmer and Ellsworth F. LeDrew: Using PCA to examine seasonal changes in the Odden sea ice peninsula, Greenland Sea

Ron Kwok: Arctic Ocean ice area and volume production: a contrast of two winters — 1996/97 and 1997/98

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Thursday, 7 June 2001

0830–1010 h CHAIR: Donald J. Cavalieri

SESSION 10: MAPPING SEA ICE

Josefino C. Comiso: Correlation and trend studies of the sea ice cover and surface temperatures in the Arctic

Claire L. Parkinson and Donald J. Cavalieri: A 21-year record of Arctic sea ice extents and their regional, seasonal, and monthly variability and trends

Shusun Li, Xiaobing Zhou, Kim Morris and Martin Jeffries: The variability of summer sea ice in the Southern Ocean seen from MODIS and RADARSAT and QuikScat images

Jeffrey R. Key, Christopher S. Velden and David Santek: Estimating winds in the polar regions with MODIS

Mark R. Drinkwater, David G. Long and Pierre Mercier: Scatterometer climate-record Pathfinder sea-ice results

1040–1140 h CHAIR: Craig S. Lingle

SESSION 11: SURFACE ELEVATION

Anthony Arendt, K. Echelmeyer, W. Harrison, V. Valentine and P. Del Vecchio: Repeat airborne profiling of Alaskan glaciers: ongoing elevation and volume changes

Hamish Pritchard, Tavi Murray, Tazio Strozzi, Adrian Luckman and Stuart Barr: Surge-related topographic change derived from SAR interferometry

Reginald R. Muskett, Craig S. Lingle, Keith A. Echelmeyer, William D. Harrison, Virginia B. Valentine and Patricia Del Vecchio: Dynamic changes in Bagley Ice Valley, Alaska, during a surge cycle from airborne altimetry and SAR

1320–1420 h CHAIR: Rune Solberg

SESSION 12: SURFACE ELEVATION

H. Jay Zwally and Li Jun: Seasonal and interannual variations of ice sheet surface elevation at the Summit of Greenland: observed and modeled

Craig S. Lingle and David N. Covey: Multi-year variability of Antarctic surface elevations from ERS-1 and 2 radar altimetry

H. Jay Zwally, Anita Brenner and Helen Cornejo: Surface elevation changes in West Antarctica from satellite radar altimetry: mass balance implications

1420–1730 h CHAIR: Josefino C. Comiso

POSTER SESSION 2

Masamu Aniya, Renji Naruse and Satoru Yamaguchi: Utilization of 6 x 6 cm format vertical aerial photographs for mapping small glaciers in remote area

P. Skvarca, H. de Angelis, R. Naruse, C. R. Warren and M. Aniya: Calving rates in freshwater: new data from southern Patagonia

Andrés Rivera, César Acuña, Gino Casassa and Francisca Brown: Use of remote sensing and field data to estimate the contribution of Chilean glaciers to the sea level rise

Wouter Greuell: On the use of narrowband and broadband albedo measurements from a helicopter for improvement of satellite-retrieval methods

Sverrir Guðmundsson, Magnus Tumi Guðmundsson, Helgi Björnsson, Freysteinn Sigmundsson, Helmut Rott and Jens Michael Carstensen: Three-dimensional glacier surface motion maps at the Gjálp eruption site, Iceland, inferred from combining InSAR and other ice displacement data

Liss Marie Andreassen, Hallgeir Elvehøy and Bjarne Kjøllmoen: Using aerial photography to study glacier changes in Norway

J. A. Dowdeswell, R. P. Bassford, A. P. Shepherd, A. F. Glazovsky, Yu. Ya. Macheret and M. Williams: Iceberg flux from the ice caps on Severnaya Zemlya, Russian Arctic: evidence from SAR interferometry and ice-penetrating radar interferometry and ice-penetrating radar

W. L. Wang, H. J. Zwally, W. Abdalati and S. Luo: Modeling of ice flow and internal layers along a flow line through Swiss Camp in West Greenland

Tavi Murray, Tazio Strozzi, Adrian Luckman, Hamish Pritchard and Hester Jiskoot: Ice dynamics during a surge of Sortebræ, East Greenland

S. W. Shin, B. M. Csathó, A. F. Habib, C. J. van der Veen and T. Schenk: Measurements of surface velocities of a Greenland outlet glacier from DISP imagery

Andreas P. Ahlstrøm, Carl Egede Bøggild, Johan J. Mohr, Niels Reeh, Erik Lintz Christensen, Ole B. Olesen and Kristian Keller: Mapping of a hydrological ice sheet drainage basin on the West Greenland ice sheet margin from ERS-1/2 SAR interferometry, ice-radar measurement and modelling

Stephan Eickschen and Manfred A. Lange: The use of passive microwave data for Antarctic ice surface classification

D. Methakullachat, B. Csathó, T. Schenk and T. Wilson: Orthorectification of DISP imagery over the Transantarctic Mountains using a rigorous block adjustment

Akira Takahashi, Teruo Furukawa, Kohei Cho and Norihisa Kamibatashi: Detecting surface melting processes on the coastal region of Antarctic Ice Sheet using RADASAT SAR imagery

Robert Bindschadler, Patricia Vornberger and Steve Price: Landsat-7 imagery of Antarctica

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Patrick Bardel, Andrew G. Fountain, Dorothy Hall and Ron Kwok: Synthetic aperture radar detection of the snowline on polar glaciers, Taylor Valley, Antarctica
Eric Rignot: East Antarctic glaciers and ice shelves mass balance from satellite data
Massimo Frezzotti and Marco Polizzi: 50 years of ice front changes between Adélie and Banzare coasts (East Antarctica)
Christine E. Rosanova, Baerbel K. Lucchitta and Jane G. Ferrigno: Velocities and ice-front changes of Thwaites and Pine Island Glaciers, West Antarctica
H. J. Zwally, M. A. Beckley, A. C. Brenner and M. B. Giovinetto: Motion of major ice shelf fronts in Antarctica from slant range analysis of radar altimeter data, 1978–1998
Frank Pattyn and Dominique Derauw: Shirase Glacier dynamics inferred from ERS-SAR interferometry
Marjorie Schmeltz, Eric Rignot and Douglas MacAyeal: Tidal flexure zones along ice-sheet margins: comparison of InSAR with an elastic plate model
Kenichi Matsuoka, Hideo Maeno, Seiho Uratsuka, Shuji Fujita, Teruo Furukawa and Okitsugu Watanabe: A ground-based, multi-frequency ice-penetrating radar system
Wendy M. Calvin, Margaret Milman and Hugh H. Kieffer: Reflectance of Antarctica from 3 to 5 μm: discrimination of surface snow and cloud properties
Ted A. Scambos and Terry Haran: An image-enhanced DEM of the Greenland ice sheet

Friday, 8 June 2001

0830–0950 h CHAIR: Julian A. Dowdeswell

SESSION 13: LAYERING

Kenichi Matsuoka, Shuji Fujita, Hideo Maeno, Seiho Uratsuka, Teruo Furukawa, Renji Naruse and Okitsugu Watanabe: Anisotropic radar echoes from within the ice sheet: inter-frequency comparisons along the main flowline of Shirase basin, East Antarctica
B. E. Smith, N. E. Lord and C. R. Bentley: Crevasse ages on the northern margin of Ice Stream C, West Antarctica
O. Eisen, U. Nixdorf, F. Wilhelms and H. Miller: Electromagnetic wave speed in polar ice: validation of the CMP technique with high resolution DEP and γ-density measurements
Beá Csathó, Terry Wilson and Kees van der Veen: Investigation of geologic control on ice sheets using remote sensing imagery

1020–1200 h CHAIR: Helmut Rott

SESSION 14: VELOCITY AND DEFORMATION

Ian Joughin: Ice sheet velocity mapping: a combined interferometric and speckle tracking approach
Jonathan Bamber and Eric Rignot: Unsteady flow inferred in part of the West Antarctica ice sheet
E. Rignot: Acceleration of glaciers in the West Antarctic ice sheet
Neal W. Young and Glenn Hyland: Velocity and strain rates derived from InSAR analysis over the Lambert Glacier–Amery Ice Shelf system, Antarctica

1320–1500 h CHAIR: Eric J. M. Rignot

SESSION 15: MAPPING ICE SHEETS

Frank Rau and Matthias Braun: The regional distribution of the dry snow zone on the Antarctic Peninsula north of 70° South
Robert Bindschadler, Ted Scambos, Helmut Rott, Pedro Skvarca and Patricia Vornberger: Ice dolines on Larsen Ice Shelf, Antarctica
Helmut Rott, Wolfgang Rack, Pedro Skvarca and Hernán de Angelis: Northern Larsen Ice Shelf — further retreat after the collapse
Kenneth C. Jezek: RADARSAT-1 Antarctic Mapping Project: change detection and surface velocity across Antarctica
L. Gray, N. Short, B. Bindschadler, I. Joughin, L. Padman, P. Vornberger and A. Khananian: RADARSAT interferometry for Antarctic grounding zone mapping

1530–1710 h CHAIR: Robert A. Bindschadler

SESSION 16: MAPPING ICE SHEETS

K. Kim and K. C. Jezek: Argon mosaic of the Antarctic coast, 1963
Massimo Frezzotti, Stefano Gandolfi, F. la Marca and Stefano Urbini: Snow dunes and glazed surfaces in Antarctica: new field and remote sensing data
Nozomu Takeuchi: Optical characteristics of surface dust (cryoconite) on glaciers: relationship between the light absorbency and property of organic matter contained in the cryoconite
Laurie Padman, Helen A. Fricker, Richard Coleman, Susan Howard and Lana Erofeeva: A new tide model for the Antarctic ice shelves and seas
H. Rebhan, D. Wingham and G. Ratier: CryoSat: ESA's first Earth Explorer Opportunity Mission

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