

PROGRAMME OF SESSIONS

Monday, 16 August 1999

OPENING OF SYMPOSIUM: Albert Waldvogel, Vice President, ETH Zürich
Robert A. Bindschadler, Vice President, International Glaciological Society
Atsumu Ohmura, Chairman of the Local Organizing Committee
Konrad Steffen, Chief Editor

0910–1030 h

CHAIR: Bob Bindschadler

SESSION 1: ICE SHEETS

G. K. C. Clarke and S. J. Marshall: Model predictions of ice core stratigraphy
W. B. Krabill, E. B. Frederick, S. M. Manizade, C. F. Martin, J. G. Sonntag, R. N. Swift, R. H. Thomas, C. W. Wright and J. K. Yungel: Five year changes in surface elevations of the Greenland ice sheet measured by aircraft laser altimetry
I. Joughin, D. MacAyeal, J. L. Bamber and M. Fahnestock: Ice flow in the north-east Greenland ice stream
M. Albert and R. Hawley: Seasonal differences in surface energy exchange at Summit, Greenland

1050–1230 h

CHAIR: Hilmar Gudmundsson

SESSION 2: ICE SHEETS

S. J. Marshall, H. Björnsson, G. K. C. Clarke, C. E. Boggild and F. Webb: Improving the representation of margins in ice-sheet models: experiments with subgrid mass balance and longitudinal stress coupling
F. Pattyn: Computer modelling of grounding-line ice dynamics at different spatial resolutions
C. Ritz, F. Rémy and L. Testut: Comparison of measured and modelled surface topography of the Antarctic ice sheet
R. C. Warner and W. F. Budd: Derivation of ice thickness and bedrock topography in data gap regions over Antarctica
N. Young and G. Hyland: An averaging scale for calculation of surface slopes for ice-sheet modelling

1400–1540 h

CHAIR: Philippe Huybrechts

SESSION 3 and 4: ICE SHEETS

H. J. Zwally and M. B. Giovinetto: A glacio-climatological databases for Greenland
V. Bugnion: Reducing the uncertainty in the contributions of Greenland and Antarctica to sea-level rise
M. Braun and C. Schneider: Differentiation of summertime energy balance along the west coast of the Antarctic Peninsula
H. Fukazawa and S. Mae: Effects of temperature on vibrational spectra of ice Ih and polar ice
B. R. Rea, D. H. D. Irving, B. Hubbard and J. McKinley: Preliminary investigations of centrifuge modelling of polycrystalline ice deformation

Tuesday, 17 August 1999

0830–1030 h

CHAIR: Paul Föhn

SESSION 5: AVALANCHES

P. Bartelt and M. von Moos: Triaxial tests to determine snow viscosity
Y. Kominami, Y. Endo and S. Niwano: Estimation of density profile of snow cover using viscous compression model
E. Guseva-Lozinski: Thermo-mechanical and brittle properties of the snowpack
P. K. Satyawali: Diffusivity and vapor flow into snow during phase change
M. Lüthi and M. Funk: Borehole experiments and flow modeling at Jakobshavn Isbrae and at its surrounding ice sheet
S. A. Sokratov and A. Sato: Wind propagation to snow observed in laboratory

1050–1230 h

CHAIR: Mary Albert

SESSION 5: SNOW COVER

A. Wiesmann, C. Fierz and C. Mätzler: Simulation of microwave emission from physically modeled snowpacks
S. Rasmus: Snow pack structure changes in southern and northern Finland
O. C. Turpin, B. Johansson, R. G. Caves and R. I. Ferguson: Verification of simulated snow cover in an Arctic basin using satellite-derived snow-cover maps

S. Gerland, G. E. Liston, J.-G. Winther and J. B. Ørbæk: Attenuation of solar radiation in Arctic snow: field observations and modelling

R. Kattelmann: Snowmelt lysimeters in the evaluation of snowmelt models

1400–1800 h

CHAIR: Tad Pfeffer

SESSION 7: POSTERS — ICE SHEETS, SNOW COVER, AVALANCHES, PERMAFROST, SEA ICE, LAKE ICE AND RIVER ICE

B. M. Csathó, J. F. Bolzan and C. J. van der Veen, A. F. Schenk and D.-C. Lee: Surface velocities of a Greenland outlet glacier from high-resolution visible satellite imagery

P. Calanca, H. Gilgen, S. Ekholm and A. Ohmura: Gridded temperature and accumulation distributions for Greenland for use in cryospheric models

J. L. Bamber, R. J. Hardy, P. Huybrechts and I. Joughin: An analysis of balance velocities over the Greenland ice sheet as a boundary condition for modelling

I. Janssens and P. Huybrechts: The treatment of meltwater retardation in mass-balance parameterisations of the Greenland ice sheet

M. Lüthi, A. Iken and M. Funk: New experimental evidence on the mechanics of fast flow of Jakobshavn Isbrae, West Greenland: deformation and temperature measurements in boreholes to the bedrock

M. B. Giovinetto, H. J. Zwally: Glacio-climatological databases for Antarctica

Qin Dahe and others: Glaciology study along 1100 km transect from Zhongshan Station to Dome A, East Antarctic ice sheet

Qin Dahe and others: New knowledge of glacier resources and its environmental and climatic records, in the middle of Himalayas

S. Fujita, H. Maeno, S. Uratsuka, T. Furukawa, S. Mae, Y. Fujii and O. Watanabe: Growth of high-shear zones in the Antarctic ice sheet: observation by radar sounding

T. Ikeda, A. N. Salamatina, V. Ya. Lipenkov, S. Mae and T. Hondoh: Non-uniform distribution of air molecules within individual clathrate hydrates in polar ice sheets

D. K. Hall, A. B. Tait, J. L. Foster, A. T. C. Chang, J. Y. L. Chien and M. Allen: Intercomparison of satellite-derived snow-cover maps

M. Albert, E. Shultz and F. Perron: Snow and firn permeability at Siple Dome, Antarctica

T. T. Oksanen: Applicability of global seasonal snowcover classification system to Finland

M. Braun, F. Rau, H. Saurer and H. Goßmann: The development of the snow cover of King George Island during the austral summer 1996/97: a monitoring based on the interpretation of SAR data

D. M. McClung: Predictions in avalanche forecasting

M. Lehning, J. Doorschot and P. Bartelt: A simple snowdrift index based on SNOWPACK model calculations

V. N. Golubev and A. D. Frolov: Model of structure and mechanical properties of dry granular snow

Ch. Fierz and Th. Baunach: Large temperature gradient metamorphism under controlled conditions and in the field

B. Brabec and R. Meister: Cross-validation for estimating the error rate of a nearest neighbour model for regional avalanche forecasting

M. Phillips, P. Bartelt and M. Christen: Influences of snow supporting structures on ground temperature in permafrost terrain

N. I. Osokin, R. S. Samoilo, A. V. Sosnovskiy, S. A. Sokratov and V. A. Zhidkov: Model of the snow cover influence on soil freezing

R. Frauenfelder and A. Käab: Towards a palaeoclimatic model of rock-glacier formation in the Swiss Alps

C. Mittaz, M. Hoelzle and W. Haerberli: First results and analyses of energy flux measurements for improved spatial modelling of Alpine permafrost

M. Wegmann: Freezing and thawing observed in permafrost rock walls

K. Isaksen, D. Vonder Mühl, H. Gubler, T. Kohl and J. L. Sollid: Ground surface temperature reconstruction based on data from a deep borehole in permafrost at Janssonhaugen, Svalbard

M. C. R. Davies, O. Hamza, B. W. Lumsden and C. Harris: Laboratory measurements of the shear strength of ice-filled rock joints

E. Guseva-Lozinski: The mathematical modelling of salinity changes in ice and frozen soil as a result of thermal variations

R. E. Moritz and J. Ukita: Geometry and the deformation of pack ice. Part I. A simple kinematic [model]

R. L. S. Weaver, K. Steffen, J. Maslanik, J. Heinrichs and G. Flato: Prospects for data assimilation in sea ice monitoring

T. L. Shy, J. E. Walsh, W. L. Chapman, A. H. Lynch and D. A. Bailey: Sea ice model validation using submarine measurements of ice draft

T. Carriers: Operational ice model verification at the Canadian Ice Service

Wednesday, 18 August 1999

0830–1030 h

CHAIR: Hans Röthlisberger

SESSION 8: FRITZ MÜLLER SESSION

F. H. Schwarzenbach: How Fritz became a glaciologist

W. P. Adams: Fritz Müller's legacy on Axel Heiberg Island, Nunavut, Canada

A. Iken (presented by A. Ohmura): Valley glaciers

W. Haeberli, J. Cihlar and R. G. Barry: Glacier monitoring within the global climate observing system
 A. Ohmura: Permafrost and tundra
 K. Steffen: Polynyas
 C. S. L. Ommanney: Summary

1050–1230 h

CHAIR: William Harrison

SESSION 5: PERMAFROST

D. Vonder Mühl, C. Hauck and F. Lehmann: Verification of geophysical models in Alpine permafrost by borehole information
 C. Kneisel, W. Haeberli and R. Baumhauer: Comparison of spatial modelling and field evidence of glacier/permafrost-relations in an Alpine permafrost environment
 S. Springman: Geotechnical objectives of the Muragl rock-glacier project
 C. Harris, B. Rea and M. C. R. Davies: Geotechnical centrifuge modelling of gelifluction processes: validation of a new approach to periglacial slope studies
 A. D. Frolov: On the physical model of frozen soil

Thursday, 29 May 1997

0830–1130 h

CHAIR: Helgi Björnsson

SESSION 10: FLOATING ICE

T. Zhang and M. O. Jeffries: Modeling inter-decadal variations of lake ice thickness and sensitivity to climatic change in northernmost Alaska
 J. Ukita and R. E. Moritz: Geometry and the deformation of pack ice. Part II. Simulation with a random-isotropic model and implication in sea-ice rheology
 W. D. Hibler, III, R. Kwok and S. Li: Comparison of simulated and observed lead orientation in the Arctic Basin
 D. A. Bailey and A. H. Lynch: Antarctic regional modelling of atmospheric, sea ice, and oceanic processes and validation with observations
 W. Rack, C. S. M. Doake, H. Rott, A. Siegel and P. Skvarca: Interferometric analysis of the deformation pattern of the northern Larsen Ice Shelf, Antarctic Peninsula, compared to field measurements and numerical modelling
 N. Reeh, C. Mayer and O. B. Olesen: Tidal movement of Nioghalvfjærdsfjorden glacier, northeast Greenland: observations and modelling

SESSION 11: ICE STREAMS

C. L. Hulbe, I. R. Joughin, D. L. Morse and R. A. Bindschadler: Tributaries to West Antarctic ice streams: characteristics deduced from numerical modelling of ice flow
 E. Rignot: Dynamic thinning of the ice streams draining into the Amundsen Sea, West Antarctica

1400–1800 h

CHAIR: Dorothy Hall

SESSION 12: POSTERS — ICE STREAMS, MOUNTAIN GLACIERS AND ICE CAPS, ICE IN THE LABORATORY

A. Vieli, M. Funk and H. Blatter: Flow acceleration towards the calving front of tidewater glaciers: the role of basal sliding
 C. Hulbe, M. Fahnestock and T. Scambos: History of Ross Ice Stream discharge investigated by comparison of numerical tracer experiments and satellite imagery
 M. Parsons, R. Barry and A. Frei: Recent developments at NSIDC in cryospheric data for model validation
 D. MacKinnon, H. Kieffer, M. Bishop and J. Shroder: Recent progress in DEM extraction for GLIMS
 O. N. Solomina: Retreat of mountain glaciers of northern Eurasia after the Little Ice Age Maximum
 R. Sailer and H. Kerschner: A simple geometric reconstruction model for Late-glacial glaciers
 O. Albrecht, P. Jansson and H. Blatter: Modelling glacier response to measured mass balance forcing
 G. Casassa and A. Rivera: Topographic mass balance model for the Southern Patagonia Icefield
 K. Fujita and Y. Ageta: Effect of summer accumulation on glacier mass balance on the Tibetan Plateau revealed by mass balance model
 A. Bassi and G.H. Gudmundsson: High resolution measurements of spatial and temporal variations in surface velocities of Unteraargletscher, Bernese Alps, Switzerland
 M. Vonmoos and G.H. Gudmundsson: The effects of basal perturbations on the vertical strain-rate variation of a linearly viscous medium
 D. Mair, U. Fischer, I. Willis, B. Hubbard and P. Nienow: Use of field measurements to constrain 3-D modelling of valley-glacier ice dynamics: Haut Glacier d'Arolla, Switzerland
 A. Bauder and G. H. Gudmundsson: Comparison of measured and calculated variation of vertical strain with depth on Unteraargletscher, Bernese Alps, Switzerland
 G. Aðalgeirsdóttir, G. H. Gudmundsson and H. Björnsson: The response of a glacier to a surface disturbance, a case study on Vatnajökull ice cap
 W.T. Pfeffer, N. F. Humphrey, J. Harper, B. Korb and B. Amadei: In-situ stress measurements in temperate ice, Worthington Glacier, Alaska

- U. H. Fischer, B. Hubbard, D. Mair, P. Nienow and I. Willis: Hydrological control on basal flow dynamics of an Alpine glacier: Haut Glacier d'Arolla, Switzerland
- J. O. Hagen, B. Etzelmüller and A.-M. Nuttall: Runoff and drainage pattern derived from digital-elevation models, Finsterwalderbreen, Svalbard
- S. Suter and M. Hoelzle: First results from firn-temperature and energy-balance measurements in the summit region of Monte Rosa and Mont Blanc
- B.W. Brock, I.C. Willis, M.J. Sharp and N.S. Arnold: Seasonal and spatial variations in the surface energy balance of Haut Glacier d'Arolla, Switzerland
- J. Oerlemans and others: A glacio-meteorological experiment on Vatnajökull, Iceland
- N. Naito, M. Nakawo, Y. Ageta, C. F. Raymond, E. D. Waddington and H. Conway: High sensitivity of a summer-accumulation type glacier to temperature change indicated with a glacier fluctuation model
- I. Baker, F. Liu, K. Jia, X. Hu, D. Cullen, D. Black and M. Dudley: X-ray topographic boundary dislocation/grain in ice, observations of interactions
- I. Baker, Y.L. Trickett and P.M.S. Pradhan: The orientation dependence of the strength of ice single crystals

Friday, 20 August 1999

0830–1030 h

CHAIR: Georg Kaser

SESSION 13: MOUNTAIN GLACIERS AND ICE CAPS

- M. Maisch, A. Wipf and B. Denzler: Spatial variation of equilibrium lines (ELA) in the Swiss Alps: regional trends and correlation with cryospheric models
- R. Hock: Modelling glacier melt and discharge of Storglaciären, Sweden
- M. Lüthi and M. Funk: Dating of ice cores from a high-altitude Alpine glacier with a flow model for cold firn
- R.S.W. van de Wal: A vertically integrated flow line model including geometry dependent shape factors applied to Rhône Glacier, Switzerland
- N. Deichmann, J. Anserge, F. Scherbaum, A. Aschwanden, F. Bernardi and G.H. Gudmundsson: Evidence for deep icequakes in an Alpine glacier
- A. Kääh: Photogrammetric reconstruction of glacier mass balance using a kinematic ice-flow model: a 20 year time-series on Gruben Glacier, Swiss Alps

1050–1230 h

CHAIR: Roger Braithwaite

SESSION 13: MOUNTAIN GLACIERS AND ICE CAPS

- T. Wohlleben, L. Copland and M. Sharp: Flow velocity simulations for a High Arctic polythermal glacier
- R. V. Engeset, H. Elvehøy, L. M. Andreassen, N. Haakensen, B. Kjølmoen, L. A. Roald and E. Roland: Modelling of historic variations and future scenarios of the Svartisen ice cap, northern Norway
- J. Oerlemans: Holocene glacier fluctuations: is the current rate of retreat exceptional?
- D. E. Thompson: Exploration of uncertainty in glacier modelling
- G. H. Gudmundsson: The transient evolution of surface undulations on glaciers

1400–1540 h

CHAIR: Hans Oerlemans

SESSION 13: MOUNTAIN GLACIERS AND ICE CAPS

- G. E. Flowers and G. K. C. Clarke: An integrated modelling approach to understanding subglacial hydraulic release events
- L. N. Braun, M. Weber and M. Schulz: Consequences of climate change for runoff from Alpine regions
- M. Kuhn: Verification of a hydrometeorological model of glacierized basins
- G. Kaser: Vertical mass balance profiles on mountain glaciers in different climatic regimes as a tool for analysing climate variations and palaeo-climate
- W. Schönér, I. Auer and R. Böhm: Climate variability and glacier reaction in the Austrian East Alps

1600–1730 h

CHAIR: Heinz Blatter

SESSION 13: MOUNTAIN GLACIERS AND ICE CAPS

- H. Kerschner, G. Kaser and R. Sailer: Alpine Younger Dryas glaciers as paleo-precipitation gauges
- N. L. Kaloujinova and A. Yu. Mikhailov: Glaciation influence on air temperature and integral turbulent flux
- R. J. Braithwaite: Some thoughts on verification of large-scale climate models for mountain glaciers and ice caps
- B. Francou and J.-E. Sicart: Response of tropical glaciers to the climatic variability during the last decades of the 20th century: Zongo, Chacaltaya (16°S) and Antizana Glaciers (0°), central Andes