PROGRAMME OF SESSIONS

Monday 12 August 1996   0845–1740 h   CHAIR: Bjørn Wold

OPENING OF SYMPOSIUM: Bjørn Wold, President, International Glaciological Society
David Strong, President, University of Victoria
Barry Goodison, Chief, Climate Research Branch, Atmospheric Environment Service

SESSION 1: REPRESENTATION OF THE CRYOSPHERE IN MODELS

W. F. Budd, X. Wu and P. A. Reid: Physical characteristics of the Antarctic sea ice zone derived from modelling and
observations
M. Kreyscher, M. Harder and P. Lemke: First results of the Sea Ice Model Intercomparison Project (SIMIP)
S. J. Vavrus: The effect of sea ice parameterizations on the simulation of the Arctic ice pack
L. Nazarenko, T. Sou, M. Eby and G. Holloway: The Arctic Ocean/ice system studied by contaminant modelling

SESSION 2: REPRESENTATION OF THE CRYOSPHERE IN MODELS

B. Tremblay and L. A. Mysak: A drag law parameterization for sea ice involving the effect of surface roughness
W. D. Hibler, III and E. M. Schulson: Modeling sea-ice fracture and flow in numerical investigations of climate
J. R. Key and Y. Liu: Evaluation and development of surface shortwave flux parameterizations for use in sea ice models
S. Marshall, A. W. Nolin, R. J. Oglesby and G. T. Bates: Improving climate model representations of snow hydrology

SESSION 3: REPRESENTATION OF THE CRYOSPHERE IN MODELS   CHAIR: Gregory Flato

R. Essery: Modelling fluxes over heterogeneous snow cover
E. Martin, E. Brun and Y. Durand: Snow cover simulations in mountainous regions based on general circulation model
outputs
J. S. Tilley, A. H. Lynch and W. L. Chapman: Implementation and tests of the Canadian Land Surface Scheme (CLASS)
within the Arctic Region Climate System Model (ARCSyM)
H. Escher-Vetter: Modelling of mass balance and discharge of Vernagtferner, Austria
A. W. Nolin and J. Stroeve: The changing albedo of the Greenland ice sheet: implications for climate change
G. Krinner and C. Genthon: A study of the Antarctic surface mass balance in a regionally fine general circulation model

SESSION 4: REPRESENTATION OF THE CRYOSPHERE IN MODELS   CHAIR: John Walsh

L. Tarasov and W. R. Peltier: A high-resolution model of the 100 kyr ice-age cycle
R. Bindschadler, M. Fahnestock, A. Sigmund and I. Joughin: Improved ice-sheet surface elevation fields combining satellite
radar altimetry and SAR interferometry data
I. Marsiat and J. L. Bamber: Improving the topography of the climate of Antarctica in the UGAMP CGM
G. E. Flowers, G. K. C. Clarke and S. J. Marshall: Sensitivity of ice sheet hydrological systems to basal water pressure forcing
S. J. Marshall, G. K. C. Clarke and G. E. Flowers: Internal dynamical controls on flow instabilities in an ice sheet
G. K. C. Clarke, G. E. Flowers and S. J. Marshall: Single- and dual-pressure hydrologies for ice sheet modelling
R. C. A. Hindmarsh: Use of ice-sheet normal modes for initialisation and modelling small changes

Tuesday 13 August 1996   0845–1745 h

SESSION 5: REPRESENTATION OF THE CRYOSPHERE IN MODELS   CHAIR: Garry Clarke

G. M. Flato and D. Ramsden: Sensitivity of an atmospheric general circulation model to the parameterization of leads in
sea-ice
J. Maslanik and J. Dunn: On the role of sea ice transport in modifying Arctic responses to global climate change
J. W. Weatherly, T. W. Bettge and B. P. Briegleb: Simulation of sea ice in the NCAR climate system model

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SESSION 6: COUPLING OF CRYOSPHERIC PROCESSES

A. Stössel: On the impact of sea ice in a global ocean circulation model
S. Legutke, E. Maier-Reimer, A. Stössel and A. Hellbach: Ocean–sea ice coupling in a global ocean general circulation model

SESSION 7: COUPLING OF CRYOSPHERIC PROCESSES   CHAIR: Elizabeth Hunke

J. R. Miller and G. L. Russell: The effect of river flow on sea ice
B. P. Briegleb: Sea ice simulations forced by output from the NCAR CCM3
E. Brun, E. Martin and V. Spiridonov: The coupling of a multi-layered snow model with a GCM
A. H. Lynch, D. L. McGinnis, W. L. Chapman and J. Tilley: A multivariate comparison of two land surface models integrated into an Arctic regional climate system model

SESSION 8: COUPLING OF CRYOSPHERIC PROCESSES   CHAIR: Jay Zwally

P. Marsh, J. W. Pomeroy and N. Neumann: Sensible heat flux and local advection over a heterogeneous landscape at an Arctic tundra site during snowmelt
R. S. W. van de Wal and J. Oerlemans: Short-term response of the Greenland ice sheet to global warming: experiments with a two dimensional vertically averaged ice flow model coupled to an energy balance model and a visco-isostatic bedrock model
S. P. O'Farrell, J. L. McGregor, L. D. Rotstayn, W. F. Budd and C. M. Zweck: Impact of transient increases in CO_2 on the accumulation and mass balance of the Antarctic ice sheet
W. Abdalati and K. Steffen: Post-Pinatubo Greenland ice sheet melt
G. Ramstein, A. Fabre, S. Pinot, C. Ritz and S. Joussaume: Ice sheet mass balance during the Last Glacial Maximum
M. B. Giovinetto and H. J. Zwally: Areal distribution of the oxygen-isotope ratio in Antarctica: an assessment based on multivariate models

SESSION 9: APPLICATIONS OF MODELS

R. S. Steen and T. S. Ledley: Asynchronously coupling the cryosphere and atmosphere in an energy balance-climate model
M. Huddleston: Improving the climatic response of sea ice models in the Greenland Sea

SESSION 10: POSTERS   CHAIR: Barry Goodison

REPRESENTATION OF THE CRYOSPHERE IN MODELS AND COUPLING OF CRYSPHERIC PROCESSES

R. Garduño and J. Adem: The cryosphere in the Adem thermodynamic model: representation and results
H. Douville, E. Brun and E. Martin: Stand-alone tests of the snow parametrization in use in the Météo-France GCM
H. Dang, C. Genthon and E. Martin: Numerical modelling of snow-cover over polar ice sheets
H. Stern and K. C. Partington: The RADARSAT Geophysical Processor System (RGPS): weekly gridded Arctic sea ice data products
J. A. Richter-Menge: Establishing a physical basis for ice dynamics models
P. Lemke, W. D. Hibler, III, G. Flato, M. Harder and M. Kreyscher: On the improvement of sea ice models for climate simulations: the Sea Ice Model Intercomparison Project
W. D. Hibler, III, C. A. Geiger and S. F. Ackley: On modeling sea-ice inertial motions in numerical investigations of climate
I. A. Podgorny: Calculation of solar energy inputs into melt ponds
T. E. Arbetter, J. A. Curry, M. M. Holland and J. A. Maslanik: Response of sea ice models to perturbations in surface heat flux
G. Ramstein, F. Fluteau and V. Masson: Existence of ice cap during the mid-Cretaceous period (120–90 Myr)
W. D. Hibler, III and J. Zhang: The effect of interactive sea-ice on seasonally varying thermohaline circulation
D. A. Bailey, A. H. Lynch and K. S. Hedström: The impact of ocean circulation in a Regional Climate System Model
S. Kakuta, Y. Sasaki and A. Mukaida: Diffusive coefficients of Arctic sea-ice motion estimated through SAR
H. J. Zwally and M. B. Giovinetto: Areal distribution of the oxygen-isotope ratio in Greenland
M. B. Giovinetto, G. Holdsworth, D. A. Fisher, N. M. Waters and H. J. Zwally: An assessment of the regional distribution of the oxygen- isotope ratio in northeastern Canada
N. Ishikawa, Y. Takeuchi, Y. Ishii and Y. Kodama: Characteristics of the hydrologic cycle of an experimental watershed

Wednesday 14 August 1996   08450–1745 h

SESSION 11: APPLICATIONS OF MODELS   CHAIR: Roger Barry

B. Rana, M. Nakawo, Y. Fukushima and Y. Ageta: Application of a conceptual precipitation-runoff (HYCYMODEL) in the
  debris-covered glacierized basin of Langtang Valley, Nepal Himalaya
A. Rango: The response of areal snow cover to climate change in a snowmelt runoff model
M. Harder: Roughness, age, and drift trajectories of sea ice in large-scale simulations and their use in model verifications
D. A. Robinson: Hemispheric snow cover and surface albedo for model validation
C. S. Jackson: Sensitivity of a two-layer model atmosphere to changes in ice sheet topography

SESSION 12: APPLICATIONS OF MODELS   CHAIR: David McGinnis

S. L. Thompson and D. Pollard: Ice-sheet mass balance at the Last Glacial Maximum from the GENESIS version 2 global
  climate model
B. Chen, D. H. Bromwich and R. I. Cullather: Sensitivity of global atmospheric circulation to Antarctic surface heat flux
  anomalies
K. M. Hines, D. H. Bromwich and R. I. Cullather: Evaluating moist physics for Antarctic mesoscale simulations
C. A. Geiger, S. F. Ackley and W. D. Hibler, III: Year-round pack ice in the western Weddell Sea: sensitivity to atmospheric and
  oceanic forcing

SESSION 13: APPLICATIONS OF MODELS   CHAIR: Peter Lemke

S. P. O'Farrell and H. B. Gordon: Interdecadal variability of sea ice in a coupled climate model
H. Goosse, J. M. Campin, T. Fichefet and E. Deleersnijder: The impact of sea-ice formation on the properties of Antarctic
  bottom water
M. Verbitsky and B. Saltzman: Modeling the Antarctic ice sheet
J. L. Schramm, M. M. Holland and J. A. Curry: Applications of a single-column ice/ocean model to understanding the mass
  balance of sea ice and snow in the central Arctic
M. M. Holland, J. L. Schramm and J. A. Curry: Thermodynamic feedback processes in a single-column sea ice/ocean model

SESSION 14: POSTERS   CHAIR: Mark Serreze

APPLICATIONS OF MODELS AND VALIDATION OF CRYOSPHERIC COMPONENTS IN MODELS

D. Pollard and S. L. Thompson: Driving a high-resolution dynamical ice-sheet model with GCM climate: applications to ice-
  sheet initiation at 116,000 B.P.
P. Huybrechts and S. T'siobbel: A three-dimensional climate/ice-sheet model applied to the Last Glacial Maximum
R. J. Oglesby and S. Marshall: Modeling polar glaciation
E. M. Grace: Glacier reconstruction through iterative refinement in a finite-element glacier model
T. Fichefet, M. A. Morales Maqueda and H. Goosse: On the importance of snow-ice formation in large-scale sea-ice
  simulations
J. R. Marko, D. B. Fissel and D. Haller: Box model analyses of interannual variability in sea ice off the Canadian East Coast
D. L. McGinnis and M. D. Cross: The ARCSS Data Coordination Center at NSIDC: a catalyst for integration
R. L. S. Weaver and W. B. Tucker, III: Variability of Arctic sea ice thickness data
T. A. Agnew and H. Le: Estimation of large scale sea-ice motion from SSM/I 85.5 GHz imagery
R. D. Brown: Historical variability in Northern Hemisphere snow-covered areas
C. Derksen, K. Misurak, E. LeDrew, J. Piwowar and B. Goodison: The relationship between snow cover and upper atmo-
  spheric circulation, central North America, winter 1988
D. de Sève, M. Bernier, J.-P. Fortin and A. Walker: Preliminary analysis of the snow microwave radiometry using SSM/I
  passive microwave data: the case of the La Grande River watershed (Quebec)
I. G. Rubinstein: Passive microwave observations of the temporal and spatial variability of the snow cover
R. Essery: Seasonal snow cover in the Hadley Centre GCM
R. Kattelmann: Rapid changes in snow cover at low elevations in the Sierra Nevada, California, U.S.A.
C. A. Shuman, M. A. Fahnestock, R. A. Bindschadler and R. B. Alley: Hoar event detection on the Greenland ice sheet with
  enhanced SSM/I time series data
T. A. Scambos and M. A. Fahnestock: Improving digital elevation models over ice sheets using AVHRR-based
  photoclinometry
Y. Ujihasi, M. Nakawo and J. Liu: Roles of glacier melt in the hydrological cycle of rivers in arid regions

SESSION 15: VALIDATION OF CRYOSPHERIC COMPONENTS IN MODELS   CHAIR: Stephen Ackley

R. G. Barry: Cryospheric data for model validations: requirements and status
R. Kwok and J. C. Comiso: The perennial ice cover of the Beaufort Sea from active and passive microwave observations
K. Steffen and J. Box: Cloud cover parameterization and climatology: NW Greenland ice sheet
M. R. Anderson: Determination of a melt onset date climatology for Arctic sea ice regions using passive microwave data
J. Maslanik, C. Fowler, J. Key, T. Scambos, T. Hutchinson and W. Emery: AVHRR-based Polar Pathfinder products for modeling applications
R. W. Lindsay, J. A. Francis, P. O. G. Persson, D. A. Rothrock and A. J. Schweiger: Surface turbulent fluxes over pack ice inferred from TOVS observations

SESSION 16: VALIDATION OF CRYOSPHERIC COMPONENTS IN MODELS   CHAIR: Albert Rango

M. Beniston, W. Haeberli, M. Hoelzle and A. Taylor: On the potential use of glacier and permafrost observations for verification of climate models
A. Boudreaux and C. Raymond: Effect of spatial pattern of mass balance on geometry and climate response of glaciers
M. Higham, M. Craven, A. Ruddell and I. Allison: Snow accumulation distribution in the interior of the Lambert Glacier basin, Antarctica
C. Fierz, C. Plüss and E. Martin: Modelling the snow cover in a complex Alpine topography
D. H. Bromwich and R. I. Cullather: Validation of ECMWF and NMC numerical analyses in Antarctic latitudes
E. J. Steig: Close interval remote sensing of the ascent of the transient snowline in large glacierised basins in the Karakoram Mountains for a conceptually-based glacier runoff model

SESSION 16: VALIDATION OF CRYOSPHERIC COMPONENTS IN MODELS   CHAIR: Lawrence Mysak

D. M. Smith, C. Cooper and S. W. Laxon: Evaluation of the representation of sea ice in the UK Hadley Centre GCM
M. C. Serreze and J. A. Maslanik: Arctic precipitation as represented in the NCEP/NCAR reanalysis
M. A. Tschudi, J. A. Curry and J. M. Maslanik: Determination of areal surface feature coverage in the Beaufort Sea using aircraft video data
W. H. Knap, B. W. Brock and J. Oerlemans: Satellite-derived albedo of snow and ice
J. L. Bamber and R. A. Bindschadler: An improved elevation data set for climate and paleo-climate modelling: validation with satellite imagery

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