

## PROGRAMME OF SESSIONS

Sunday, 19 August 2001

**OPENING OF SYMPOSIUM:** Robert A. Bindschadler, President, International Glaciological Society  
Dorthe Dahl-Jensen, Head of Local Organizing Committee  
Eric W. Wolff, Chief Editor

0900–0930 h

CHAIR: Bernard Stauffer

W. Dansgaard: The oldest news

0910–1030 h

### **SESSION 1: LATE QUATERNARY CLIMATE FROM ICE CORES, 1: GREENLAND CLIMATE OF THE LAST 150 000 YEARS**

Dorthe Dahl-Jensen, Niels S. Gundestrup, Heinz Miller, Okitsugu Watanabe, Sigfús J. Johnsen, Jørgen P. Steffensen, Henrik B. Clausen, Anders Svensson and Lars B. Larsen: The NorthGRIP deep drilling programme

Sune Olander Rasmussen, Katrine Krogh Andersen, Marie-Louise Siggaard-Andersen and Henrik B. Clausen: Extracting the annual signal from Greenland ice-core chemistry and isotopic records

Thorsteinn Thorsteinsson, Yun Wang, Josef Kipfstuhl, Heinz Miller and Hitoshi Shoji: The normal grain-growth regime in the NGRIP deep ice core compared with other Greenland locations

Jørgen Peder Steffensen and Dorthe Dahl-Jensen: An attempt to understand some of the chemical profiles of the Eemian and deeper ice in the GRIP core

Niels Reeh, Hans Oerter and Henrik Højmark Thomsen: Comparison between Greenland ice-margin and ice-core oxygen-18 records

Roy M. Koerner and David A. Fisher: Ice-core evidence for widespread Arctic glacier retreat in the Last Interglacial and the early Holocene

1310–1510 h

CHAIR: Mary R. Albert

### **SESSION 2: IMPROVING ICE-CORE INTERPRETATION THROUGH METEOROLOGY, MODELLING AND AIR-SNOW TRANSFER STUDIES**

C. H. Reijmer, M. R. van den Broeke and M. P. Scheele: Air parcel trajectories to five deep drilling locations on Antarctica, based on the ERA-15 dataset

Jonathan D. W. Kahl: Atmospheric transport to Summit, Greenland: changes during the past four decades

G. Krinner and C. Genton: Modelled air mass transport times from remote source regions to ice core drilling sites at the LGM compared to today

Martin Werner, Ina Tegen, Caroline Roelandt, Karen Kohfeld, Yves Balkanski, Margareta Hansson, Sandy Harrison, Colin Prentice, Michael Schulz, Claudia Timmreck and Henning Rodhe: Mineral dust in polar ice cores: a model study of present and glacial sources, transport and deposition

Alexey A. Ekaykin, Vladimir Ya. Lipenkov, Narcisse I. Barkov, Jean Robert Petit and Valerie Masson-Delmotte: Spatial and temporal variability in isotope composition of recent snow in the vicinity of Vostok Station, Antarctica: implications for ice-core record interpretation

Jeffrey L. Kavanaugh and Kurt M. Cuffey: Generalized view of source-region effects on  $\delta D$  and deuterium excess in ice-sheet precipitation

1530–1800 h

CHAIR: Konrad Steffen

Sigfús J. Johnsen, James White, Arny E. Sveinbjörnsdóttir, Niels Gundestrup, Georg Hoffmann and Timothy Creyts: Diffusion of stable isotopes in Greenland firn and ice used to constrain palaeotemperatures and diffusivities in solid ice

Edwin D. Waddington, Eric J. Steig and Thomas A. Neumann: Using characteristic times to assess whether stable isotopes in polar snow can be reversibly deposited

R. Udisti, S. Becagli, O. Largiuni, R. Traversi, R. Mulvaney, E. Wolff, R. Röthlisberger and R. Delmas: Evidence of post-depositional processes in superficial and deep layers in EPICA-Dome C ice core

Manuel A. Hutterli, Joseph R. McConnell and Roger C. Bales: Increase of HCHO and H<sub>2</sub>O<sub>2</sub> in Greenland firn: to what extent an effect of changes in accumulation timing?

Mark A. J. Curran, Anne S. Palmer, Tas D. van Ommen, Vin Morgan, Katrina L. Phillips, Alison J. McMorrow and Paul A. Mayewski: Post-depositional movement of methanesulphonic acid at Law Dome and the effect on accumulation rate

Peter D. Ditlevsen, Susanne Ditlevsen and Katrine K. Andersen: The fast climate fluctuations during the stadial and interstadial climate states

Mary R. Albert and Robert L. Hawley: Seasonal changes in snow surface roughness characteristics at Summit, Greenland: implications for snow and firn ventilation

Monday, 20 August 2001

0830–1100 h

CHAIR: Yao Tandong

**SESSION 3: CLIMATE AND CHANGE IN THE PAST TWO MILLENNIA, 1**

Nancy Bertler, Peter Barrett, Paul A. Mayewski, Warren Dickinson, Alex Pyne and Jamie Shulmeister: Holocene climate record from the Dry Valleys, Antarctica: initial results for the last 650 years

Kumiko Goto-Azuma, Roy M. Koerner and David A. Fisher: An ice-core record over the last two centuries from Penny Ice Cap, Baffin Island, Canada

Qin Dahe, Hou Shugui, Zhang Dongqi, Ren Jiawen, Kang Shichang, Paul A. Mayewski and Cameron P. Wake: Preliminary results from the chemical records of an 80.4 m ice core recovered from the East Rongbuk Glacier, Mt Qomolangma (Everest)

Patrick Ginot, Margit Schwikowski, Ulrich Schotterer, Willibald Stichler, Heinz W. Gäggeler, Bernard Francou, Robert Gallaire and Bernard Pouyaud: Climate variability reconstruction from Andean glaciochemical records

Teija Kekonen, John Moore, Robert Mulvaney, Elisabeth Isaksson, Veijo Pohjola and Roderik S.W. van de Wal: An 800 year record of nitrate from the Lomonosovfonna ice core, Svalbard

0830–1100 h

CHAIR: Vincent I. Morgan

John Moore, Teija Kekonen, Robert Mulvaney, Elisabeth Isaksson and Veijo Pohjola: A record of sulphuric acid deposition in a Svalbard ice core spanning the industrial revolution

Sun Junying, Ren Jiawen and Qin Dahe: Sixty-year record of biogenic sulfur from Lambert Glacier basin firn core, East Antarctica

Michel Legrand, Susanne Preunkert and Dietmar Wagenbach: Historical atmospheric sulphate loads at 4300 m a.s.l. above Europe derived from a high Alpine ice core study and dedicated air/firn relation investigations

Anne S. Palmer, Vin Morgan, Mark A. J. Curran, Tas D. van Ommen and Paul A. Mayewski: Antarctic volcanic flux ratios from Law Dome ice cores

Wolfgang Graf, Hans Oerter, Oskar Reinwarth, Willibald Stichler, Frank Wilhelms, Heinz Miller and Robert Mulvaney: Stable-isotope records from Dronning Maud Land, Antarctica

1400–1800 h

**POSTER SESSION 1**

T. McCormack, R. Mulvaney, C. Arrowsmith, G. Littot and B. Knight: Results from a series of shallow ice cores from Berkner Island, Antarctic

William D. Miners, Eric W. Wolff, Sebastian Gerland: Modelling a radio-echo sounding record using ice core data to produce a synthetic radargram

Anna Grönlund, Douglas Nilsson, Ismo Koponen, Aki Virkkula, Margareta Hansson: Aerosol dry deposition measured with eddy-covariance technique at Wasa, Dronning Maud Land, Antarctica

Yoshiyuki Fujii, Mika Kohno, Kokichi Kamiyama, Hideaki Motoyama, Sumito Matoba, Makoto Igarashi and Okitsugu Watanabe: Microparticle concentration change during past 320 ka recorded in Dome Fuji ice core, Antarctica

Fumihiko Nishio, Teruo Furukawa, G. Hashida, Makoto Igarashi, Takao Kameda, Mika Kohno, Hideaki Motoyama, K. Naoki, Kazuhide Satow, Keisuke Suzuki, Morimasa Takata, Yoko Toyama, T. Yamada and Okitsugu Watanabe: Annual layer determinations and 167 year records of past climate of H72 ice core in east Dronning Maud Land, Antarctica

Sepp Kipfstuhl and Johannes Freitag: Air bubble studies from the Dome C ice core, Antarctica

Ren Jiawen, Ian Allison, Qin Dahe and Xiao Cunde: Variability of the accumulation rate and the ice budget over the Lambert Glacier basin, East Antarctica

Elisabeth Isaksson, Jack Kohler, Makoto Igarashi, Lars Karlöf, Teija Kekkonen, Tõnu Martma, Harro Meijer, John Moore, Hideaki Motoyama, Robert Mulvaney and Veijo Pohjola: Climate variability on Svalbard: results from two ice cores

Elisabeth Isaksson and Kjetil Melvold: Trends and patterns in the recent accumulation and oxygen isotopes in coastal Dronning Maud Land, Antarctica: interpretations from shallow ice cores

Alison J. McMorrow, Mark A. J. Curran, Tas D. van Ommen, Vin Morgan and Ian Allison: Features of meteorological events preserved in a high-resolution Law Dome snow pit

Barbara Smith, Tas van Ommen, Vin Morgan: Distribution of oxygen isotope ratios and accumulation rates in Wilhelm II Land, East Antarctica

Xiao Cunde, Ren Jiawen, Qin Dahe et al.: Remarkable difference of climatic variations between the eastern and western sides of Lambert Glacier basin, Antarctica

Elisabeth Schlosser and Hans Oerter: Shallow firn cores from Neumayer, Ekströmis, Antarctica: a comparison of accumulation rates and stable-isotope ratios

K. A. Kaspers, R. S.W. van de Wal, J. A. de Gouw, C. J. van der Veen, C. A. M. Brenninkmeijer, L. Karlöf and J.-G. Winther: Past atmospheric composition from chemical analyses of firn air from Dronning Maud Land 2000/2001, Antarctica

- Bernd Mügge, Ralf Greve and Kolumban Hutter: Simulation of the Antarctic ice sheet with a three-dimensional polythermal ice sheet model, in support of the EPICA project
- Lars Karlöf, Jan-Gunnar Winther, Rickard Pettersson, Gaute Lappégard, Coen Hofstede and Roderik van de Wal: Point accumulation variability in a 8 × 8 km area, eastern Dronning Maud Land, Antarctica, as determined from shallow firn cores and snow pits
- R. S.W. van de Wal, W. J. M. van der Kemp, K. van der Borg, A. F. M. de Jong, C. Alderliesten, J. Oerlemans, C. van der Veen and R. A. N. Lamers: <sup>14</sup>C-measurements along the EPICA–Dome C core
- Elisabeth Schlosser and Hans Oerter: Seasonality of accumulation and the isotope record in ice cores — a study with surface snow samples and firn cores from Neumayer Station, Antarctica
- Elisabeth Schlosser and Hans Oerter: Stable isotopes in the snow and origin of precipitation at Neumayer, Ekströmsen, Antarctica
- Martine de Angelis, Ian Goodwin and R. Udisti: Preliminary investigation of light carboxylic acids in ice and firn cores of the East Antarctic Plateau
- Gordon Hamilton: Mass balance and accumulation rates across Siple Dome, West Antarctica
- Takeo Hondoh, Hitoshi Shoji, Okitsugu Watanabe, Andrey N. Salamatina and Vladimir Ya. Lipenkov: Depth–age and temperature prediction at Dome Fuji station, East Antarctica
- C. M. Hofstede, R. S.W. van de Wal, L. Karlöf, J.-G. Winther, E. Isaksson, G. Lappégard and F. Wilhelms: The accumulation record from a medium long ice core in eastern Dronning Maud Land, Antarctica
- Rita Traversi, Silvia Becagli, Emiliano Castellano, A. Migliori, M. Severi and Roberto Udisti: Sulphate, chloride and nitrate profiles in the last 50,000 years from EPICA–Dome C ice core
- S. Becagli, E. Castellano, R. Traversi, B. Stenni, O. Flora, M. Proposito, R. Gragnani, M. Frezzotti and R. Udisti: Volcanic and biogenic signatures for sulphate and methanesulfonate at Talos Dome (East Antarctica)
- Geneviève C. Littot, Robert Mulvaney, Regine Röthlisberger, Roberto Udisti, Eric W. Wolff, Emiliano Castellano, Martine de Angelis, Margareta Hansson, Stefan Sommer and Jørgen P. Steffensen: Comparison of analytical methods used for measuring major ions in the EPICA–Dome C (Antarctica) ice core
- Marco Proposito, Silvia Becagli, Emiliano Castellano, O. Flora, Roberto Gragnani, Barbara Stenni, Rita Traversi, Roberto Udisti and Massimo Frezzotti: Chemical and isotopic snow variability along the 1998 ITASE traverse from Terra Nova Bay to Dome C, East Antarctica
- Hou Shugui et al.: Comparison of two ice core chemical records recovered from the Mt Qomolangma (Everest) region
- Hou Shugui, Qin Dahe, C. P. Wake and K. Kreutz: Monsoon and dust signals recorded in a 2.5 m snowpit, Mt Chu Oyu, Nepal Himalayas

Tuesday, 21 August 2001

0830–1230 h

CHAIR: Dorthe Dahl-Jensen

**SESSION 4: LATE QUATERNARY CLIMATE FROM ICE CORES, 2: ANTARCTIC AND BIPOLAR CLIMATE AND ENVIRONMENT**

- E. Castellano, A. Migliori, M. Severi, R. Udisti, C. Hammer, J. P. Steffensen and J. R. Petit: Global volcanism recorded in Antarctic ice sheet: a comparison of signatures from different ice cores
- F. Vimeux, V. Masson-Delmotte, G. Delaygue, S. Johnsen, J. Jouzel, J. R. Petit, B. Stenni and M. Stiévenard: Paleoclimatic variations of polar snow deuterium excess: indicator of ocean surface temperature changes
- Jefferson C. Simões, Jean Robert Petit, Roland Souchez, Vladimir Ya. Lipenkov, Martine de Angelis, Liu Leibao, Jean Jouzel and Paul Duval: Evidence of glacial flour in the deepest 89 m of the Vostok ice core
- Shuji Fujita, Nobuhiko Azuma, Hideaki Motoyama, Takao Kameda, Hideki Narita, Yoshiyuki Fujii and Okitsugu Watanabe: Electrical measurements on the 2503 m Dome F Antarctic ice core
- B. Stenni, V. Masson-Delmotte, O. Cattani, S. Falourd, S. Johnsen, J. Jouzel, A. Longinelli and E. Selmo: A 44 ka deuterium and deuterium excess records at Dome Concordia (East Antarctica)
- Barbara Delmonte, Jean Robert Petit and Valter Maggi: LGM–Holocene changes and Holocene millennial-scale oscillations of dust particles in the EPICA–Dome C ice core, East Antarctica
- Regine Röthlisberger, Manuel A. Hutterli, Eric W. Wolff, Robert Mulvaney, Hubertus Fischer, Matthias Bigler, Kumiko Goto-Azuma, Margareta E. Hansson, Urs Ruth, Marie-Louise Siggaard-Andersen and Jørgen P. Steffensen: Nitrate in Greenland and Antarctic ice cores: a detailed description of post-depositional processes
- Vin Morgan, Tas D. van Ommen and Suenor Woon: The oxygen isotope record from Law Dome, East Antarctica
- Eric W. Wolff and Robert Mulvaney: Ultra-high resolution analysis of the GRIP Greenland ice core

Wednesday, 22 August 2001

0840–0940 h

CHAIR: David A. Fisher

**SESSION 5: MASS BALANCE OF THE GREENLAND ICE SHEET**

- R. S.W. van de Wal, M. M. Helsen and H. Bartholomeus: An ablation model for the Greenland ice sheet
- Waleed Abdalati and PARCA Investigators: Program for Arctic Regional Climate Assessment (PARCA)
- Edward Hanna, Philippe Huybrechts and Thomas L. Mote: Surface mass balance of the Greenland ice sheet from climate-analysis data and accumulation/runoff models

1000–1100 h

CHAIR: Dorthe Dahl-Jensen

**SESSION 6: LATE QUATERNARY CLIMATE FROM ICE CORES, 3: ARCTIC AND BIPOLAR CLIMATE AND ENVIRONMENT**

- Bernhard Stauffer, J. Flückiger, Eric Monnin, Jakob Schwander, Jean-Marc Barnola and Jérôme Chappellaz: Atmospheric CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O records over the past 60 000 years based on the comparison of different polar ice cores
- Christian Zdanowicz, David A. Fisher, I. Clark and D. Lacelle: An ice-marginal δ<sup>18</sup>O record from Barnes Ice Cap, Baffin Island, Canada
- Gary D. Clow and Edwin D. Waddington: Reconstructing climatic changes at Summit, Greenland and Taylor Dome, Antarctica using borehole paleothermometry

1100–1200 h

CHAIR: Eric W. Wolff

Discussion: Integrity of ice-core records

1330–1530 h

CHAIR: Kumiko Goto-Azuma

**SESSION 7: CLIMATE AND CHANGE IN THE PAST TWO MILLENNIA, 2**

- Fidan Göktas, Hubertus Fischer, Hans Oerter, Rolf Weller, Stefan Sommer and Heinz Miller: A glacio-chemical characterization of the new EPICA deep-drilling site on Amundsenisen, Dronning Maud Land, Antarctica
- Yao Tandong, Duan Keqin, Xu Baiqing, Wang Ninglian, Pu Jianchen, Kang Shichang, Qin Xiang and Lonnie Thompson: The climatic changes of the past 1000 years recorded in Dasuopu ice core
- Yang Meixue, Yao Tandong and He Yuanqing: The significance of the relationship between ENSO events and Guliya ice core records in Tibetan Plateau
- Lars Berg Larsen, Marie-Louise Siggaard-Andersen, Henrik B. Clausen and Claus Uffe Hammer: A glacio-chemical analysis of a climatic event
- Eric A. Meyerson, Paul A. Mayewski, Karl J. Kreutz, L. David Meeker, Sallie I. Whitlow and Mark S. Twickler: The polar expression of ENSO and sea-ice variability as recorded in a South Pole ice core
- Robert Mulvaney, Hans Oerter, David A. Peel, Wolfgang Graf, Carol Arrowsmith, Elisabeth C. Pasteur, B. Knight, Geneviève C. Littot and William D. Miners: 1000-year ice-core records from Berkner Island, Antarctic

1400–1800 h

CHAIR: Eric W. Wolff

**POSTER SESSION 2**

- Ingeborg Auer, Reinhard Böhm, Corinna Huhle and Wolfgang Schönner: Precipitation adjusted temperature series — a way to optimise instrumental climate time series for comparisons with stable isotope ice core information from high Alpine sites
- Wolfgang Schönner, Ingeborg Auer, Reinhard Böhm, Lothar Keck and Dietmar Wagenbach: Spatial representativity of climate information from instrumental and ice core based Alpine records
- Roderik S. W. van de Wal, Robert Mulvaney, Elisabeth Isaksson, John C. Moore, Jean Francis Pinglot, Veijo A. Pohjola and Martijn P. A. Thomassen: Reconstruction of the historical temperature trend from measurements in a medium-length borehole on the Lomonosovfonna plateau, Svalbard
- Veijo A. Pohjola, Tõnu A. Martma, Harro A. J. Meijer, John C. Moore, Elisabeth Isaksson, Rein Vaikmäe and Roderik S. W. van de Wal: Reconstruction of 300 years accumulation rates from Lomonosovfonna, Svalbard
- Stephan Suter and Martin Hoelzle: Cold firn in the Mont Blanc and Monte Rosa areas, European Alps: spatial distribution and statistical models
- L. Keck, S. Preunkert, M. Legrand, M. Leuenberger, R. Böhm and D. Wagenbach: Significance of ice core records from high elevation mountain glaciers
- Hans-Arno Synal, Peter Kubik, Jürg Beer, Raimund Muscheler and Gerhard Wagner: Long-lived radionuclides in ice core records: what can we learn
- S. Preunkert, M. Legrand and D. Wagenbach: Changes in fluoride and sulfate levels in an Alpine ice core over the 20th century: implications on their atmospheric budgets over Europe
- Jari Vehviläinen, Elisabeth Isaksson and John Moore: A 20th-century record of naphthalene in an ice core from Svalbard
- Jefferson C. Simões, Francisco A. Ferron, Ronaldo T. Bernardo, Alberto J. Aristarain, Michel Stiévenard, Michel Pourchet and Alexandre L. Correia: Spatial distribution of shallow ice core parameters in the South Shetland Islands
- David A. Fisher, Roy M. Koerner, Gregory A. Zielinski, Cameron P. Wake, Christian M. Zdanowicz, Jocelyne C. Bourgeois, Paul A. Mayewski and N. Grummet: The effects of flowline length evolution on the chemistry–δ<sup>18</sup>O profiles from Penny Ice Cap, Baffin Island, Canada
- Cameron P. Wake, Kaplan Yalcin and Niels Gundestrup: The climate signal recorded in the oxygen-isotope, accumulation and major-ion time series from the Eclipse ice core, Yukon Territory, Canada
- David L. Naftz, David D. Susong, L. DeWayne Cecil, Paul F. Schuster, Robert L. Michel and Carol Kendall: Development and application of a transfer function between δ<sup>18</sup>O values in snowfall and surface air temperature, Upper Fremont Glacier, Wyoming, U.S.A.
- Paul F. Schuster, David P. Krabbenhoft, David L. Naftz, L. DeWayne Cecil, Mark L. Olson, John F. DeWild, David D. Susong and Jaromy R. Green: A 270-year ice core record of atmospheric mercury deposition to western North America

- David D. Susong, Michael Abbott, David L. Naftz, Paul Schuster and L. DeWayne Cecil: Mercury in snow: records of atmospheric mercury deposition from mid-latitude sites in North America and central Asia
- L. DeWayne Cecil, Hans-Arno Synal, Jaromy R. Green, Javier Santos, Jürg Beer, David L. Naftz, Karl J. Kreutz, Cameron P. Wake and Vladimir B. Aizen: Radioactive isotope profiles from mid-latitude glaciers.
- L. DeWayne Cecil, Jaromy R. Green, David L. Naftz, David D. Susong and Paul F. Schuster: Global environmental change research
- T. Shiraiwa, S. Kohshima, R. Uemura, N. Yoshida, S. Matoba, J. Uetake and M. A. Godoi: High net accumulation rates at the Southern Patagonia Icefield revealed by chemical and biological analyses of a 45.97-m-long ice core
- G.W. Kent Moore, Keith Alverson and Gerald Holdsworth: Variability in the climate of the Pacific Ocean and North America as expressed in an ice core from Mount Logan
- Shuji Fujita, Nobuhiko Azuma, Hideaki Motoyama, Takao Kameda, Hideki Narita, Yoshiyuki Fujii and Okitsugu Watanabe: Linear and non-linear relations between high-frequency-limit conductivity, AC-ECM signals and ECM signals of Dome F Antarctic ice core from a laboratory experiment
- H. Shoji, K. Satow, H. Narita, S. Aoki, H. Motoyama, Y. Fujii and O. Watanabe: A depth–age relationship of the Dome Fuji, Antarctica deep ice core
- Hiroshi Ohno, Vladimir Ya. Lipenkov and Takeo Hondoh: Number densities of air bubbles and air hydrates in the Dome F ice core
- Ted Scambos and Mark Fahnestock: Snow megadunes and the ice core climate record
- Todd K. Hinkley and Akikazu Matsumoto: How much dust and how much salt is really in polar ice? Atmospheric regime of dust and salt through 75,000 years of Taylor Dome ice core: refinement by measurement of major, minor and trace metal suites
- Weili Wang, Roland C. Warner and William F. Budd: Ice flow properties at Dome Summit South, Law Dome, East Antarctica
- He Yuanqing, Wilfred H. Theakstone, Yao Tandong, Zhao Xiaojun and Yang Meixue: The irregular pattern of isotopic and ionic signals in the typical monsoon temperate-glacier area, Yulong mountain, China
- Yoko Toyama, Fumihiko Nishio, Takayuki Shiraiwa, Takao Kameda, Akiyoshi Takahashi, Noriyuki Tanaka, Yaroslav D. Murav'ev and Alexander A. Ovsyannikov: Dating of Ushkovsky ice cap core in Kamchatka by DC-electrical conductivity measurement method
- Karl J. Kreutz, Cameron P. Wake, Vladimir B. Aizen and L. DeWayne Cecil: Spatial and altitudinal variability of precipitation isotopes in the central Tien Shan Mountains
- Wang Ninglian, Yao Tandong, Lonnie G. Thompson and Mary E. Davis: Indian monsoon and North Atlantic Oscillation signals reflected by  $\text{Cl}^-$  and  $\text{Na}^+$  in a shallow ice core from Dasuopu glacier, Xixiabangma, Himalaya
- Takayuki Shiraiwa, Tetsuya Fujikawa, Noriyuki Tanaka, Sumito Matoba, Yaroslav D. Murav'ev, Fumihiko Nishio and Yoko Toyama: A 170-year proxy climate records derived from co-isotopic and chemical analyses of ice core recovered from Ushkovsky ice cap, Kamchatka
- Duan Keqin, Yao Tandong, Sun Weizhen and Li Xinqing: Indian monsoon variability in Himalayas since 1800 AD
- Duan Keqin, Yao Tandong, Wang Ninglian, Sun Weizhen and Li Xinqing: An examination of possible solar activity effects in the accumulation variability of Dasuopu glacier in Himalayas
- Lee Xinqing, Zhou Hui: Oxalate record in ice cores: connection between Glacier 1, Tianshan, China, and Far East Rongbuk Glacier, Everest
- Lee Xinqing, Qin Dahe, Hou Shugui, Ren Jiawen, Duan Keqin, Zhou Hui: Changes in chemical and isotopic properties near infiltrated cracks in an ice core from Glacier No.1 at Ürümqi riverhead, Tien Shan, China

1930–2300 h

### POSTER SESSION 3

- Andreas P. Ahlstrøm, Carl Egede Bøggild, Ole B. Olesen, Johan J. Mohr and Maria Plougmann Hag: Ice sheet ablation in the Tasersiaq region of West Greenland determined from in situ observations, satellite images and energy balance modelling
- Morimasa Takata, Yoshiyuki Fujii, Hitoshi Shoji, Kimiko Shimohara, Atsushi Miyamoto and Josef Kipfstuhl: Stratigraphy analysis of deep ice cores by a laser tomograph measurement
- M.-L. Siggaard-Andersen, C. U. Hammer, A. Murray and N. A. Larsen: Luminescence experiments on mineral dust extracted from the NGRIP deep ice core
- Marie-Louise Siggaard-Andersen, Jørgen Peder Steffensen and Hubertus Fischer: Lithium in Greenland ice core samples measured by ion chromatography
- Aslak Grinsted and Dorte Dahl-Jensen: A Monte Carlo-tuned model of the flow in the NorthGRIP area
- Philippe Huybrechts, Ives Janssens, Chantal Poncin and Thierry Fichefet: The response of the Greenland ice sheet to climate changes in the 21st century by interactive coupling of an AOGCM with a thermomechanical ice-sheet model
- Li Jun, Weili Wang and H. Jay Zwally: Interannual variations of shallow firn temperature at Greenland summit
- S. H. Faria, D. Ktitarev and K. Hutter: Modelling evolution of anisotropy in fabric and texture of polar ice
- Hans Weertman: The Comninou–Dundurs effect and position stability of subglacial lakes
- Ralf Greve, Yongqi Wang and Bernd Mügge: Comparison of numerical schemes for the solution of the advective age equation in ice sheets
- Olivier Gagliardini and Jacques Meyssonier: Lateral boundary conditions for a local anisotropic ice-flow model
- Gina L. Luciano and Mary R. Albert: Bidirectional permeability measurements of polar firn
- Mary Albert: Effects of snow and firn ventilation on sublimation rates
- Gary Koh, Mary R. Albert and Edward F. Shultz: FMCW radar mapping of hoar layers in polar firn

- Piers R. F. Barnes, Robert Mulvaney, K. Robinson and Eric W. Wolff: Observations of polar ice from the Holocene and the glacial period using the scanning electron microscope
- Mika Kohno and Yoshiyuki Fujii: Past 220 year bipolar volcanic signals: remarks on common features of their source volcanic eruptions
- Annette Hofmann and Sepp Kipfstuhl: Rapid climate oscillations during the last glaciation in the Scotia Sea — on the link between magnetic susceptibility and dust records
- Carl Egede Bøggild: Diagnostic model analysis of spatial mass- and energy balance conditions at the Northeast Greenland ice sheet margin
- Konrad Steffen, Jason Box and Nicolas Cullen: Radiation climatology of the Greenland ice sheet
- David A. Braaten, S. Prasad Gogineni, D. Tammana, S. K. Namburi, John Paden and K. Gurumoorthy: Improvement of radar ice-thickness measurements of Greenland outlet glaciers using SAR processing
- Jessica E. Miller, Jonathan D.W. Kahl, Fred Heller and Joyce M. Harris: A three-dimensional residence-time analysis of potential summertime atmospheric transport to Summit, Greenland
- Hubertus Fischer and Matthias Schwager: Potential of northern Greenland ice cores for the reconstruction of large scale teleconnection patterns
- Gerhard Krinner, Christophe Genthon and Martin Werner: Impact of precipitation seasonality on isotopic signals in ice cores: an analysis of several atmospheric general circulation model simulations
- Urs Ruth, Dietmar Wagenbach, Matthias Bigler, Jørgen P. Steffensen, Regine Röthlisberger and Heinz Miller: High-resolution microparticle profiles at NorthGRIP, Greenland: case studies of the calcium–dust relationship
- Irene A. Mogensen, Sigfús J. Johnsen, Andrey Ganoploski and Stefan Rahmstorf: An investigation of rapid warm transitions during MIS2 and MIS3 using Greenland ice-core data and the CLIMBER-2 model
- K. M. Hansen, A. Svensson, Y. Wang and J. P. Steffensen: Properties of GRIP ice crystals from around Greenland interstadial 3
- Birgit Mieding, Hubertus Fischer, Matthias Bigler, Frank Wilhelms and Sepp Kipfstuhl: Reconstruction of seasonal variations in aerosol transport and deposition from chemical ice core records in Northeast Greenland
- Johannes Freitag, Uwe Dobrindt, Sepp Kipfstuhl: A new method for predicting transport properties of polar firn on its pore scale
- Filip Lefebvre, Hubert Gallée, Jean-Pascal van Ypersele and Philippe Huybrechts: Modelling of large-scale melt parameters with a regional climate model in south Greenland during the 1991 melt season
- K. K. Andersen and P. D. Ditlevsen: Noise reduction in ice core records
- L. B. Larsen, P. Kanagaratnam, N. Gundestrup, P. Gogineni, H. B. Clausen and J. Legarsky: Accumulation rate at NGRIP determined by radar profiling
- L. B. Larsen, J. Legarsky, N. Gundestrup, P. Gogineni, P. Kanagaratnam and T. Atkins: Firn measurements using a Ka-band ranging scatterometer
- Christine Schött Hvidberg, Jørgen Peder Steffensen, Henrik B. Clausen, Hitoshi Shoji and Josef Kipfstuhl: The NorthGRIP ice-core logging procedure: description and evaluation
- C. S. Hvidberg, Kristian Keller, N. Gundestrup: Mass balance and ice flow along the NNW ridge of the Greenland ice sheet at NorthGRIP
- Matthias Bigler, Dietmar Wagenbach, Hubertus Fischer, Sepp Kipfstuhl, Heinrich Miller, Stefan Sommer and Bernhard Stauffer: Sulfate record from a northeast Greenland ice core over the last 1200 years based on continuous flow analysis
- Gordon Hamilton and Ian Whillans: Measurements of local rates of ice sheet thickness change in Greenland
- Maria Plougmann Hag, Håkon Gjessing Karlsen, Jørgen Bille-Hansen and Carl Egede Bøggild: Time trends in runoff and climatology from an ice-sheet margin catchment in West Greenland

Thursday, 23 August 2001

0840–0940 h

CHAIR: Hans Oerter

**SESSION 8: HIGH-RESOLUTION ANALYSIS AND TIME-SCALES: DATING AND PHASING**

- Jørgen Peder Steffensen, Jakob Schwander, Sören Wedel Nielsen and Josef Kipfstuhl: Do cloudy bands in ice cores always represent chemical stratigraphy?
- Eric J. Steig and Richard B. Alley: Phase relationships between Antarctic and Greenland climate records
- Pieter M. Grootes and Marie-Josée Nadeau: The Taylor Dome time scale and global climate synchrony

1000–1410 h

CHAIR: Hans Röthlisberger

**SESSION 9: PHYSICS AND FLOW**

- Jérôme Weiss, J. Vidot, Michel Gay, Laurent Arnaud, Paul Duval and Jean Robert Petit: Dome Concordia ice microstructure: impurities effect on grain growth
- Piers R. F. Barnes, Heidi M. Mader, Regine Röthlisberger, Roberto Udasti and Eric W. Wolff: The evolution of chemical peak shapes in the Dome C ice core, Antarctica
- Ian Baker and Daniel Cullen: The structure and chemistry of 94 m Greenland Ice Sheet Project 2 ice
- Yun Wang, Thorsteinn Thorsteinsson, Josef Kipfstuhl, Heinz Miller, Dorte Dahl-Jensen and Hitoshi Shoji: A vertical girdle fabric in the NorthGRIP deep ice core, North Greenland
- Atsushi Miyamoto, Hitoshi Shoji and Okitsugu Watanabe: Uniaxial compression tests of cloudy band ice specimens from the GRIP, Greenland ice core

D. Dahl-Jensen, T. Thorsteinsson, A. Svensson and Y. Wang: Anisotropic models based on the observed ice crystal fabric at NorthGRIP

Thorstur Thorsteinsson and Edwin D. Waddington: Folding in strongly anisotropic layers near ice-sheet centers

Véronique Verbeke, Reginald Lorrain, Sigfús Johnsen and Jean-Louis Tison: A multiple step deformation history of basal ice from the Dye 3 (Greenland) core: new insights from the CO<sub>2</sub> and CH<sub>4</sub> content

*1410–1710 h*

CHAIR: Edwin D. Waddington

**SESSION 10: THE FUTURE: NEW METHODS, NEW CORES, NEW IDEAS**

J.-M. Barnola, C. Goujon, C. Coléou, E. Boller and P. Duval: First 3-dimensional study of the firn-ice transition by X-ray tomography

F. Nakazawa, N. Harada, K. Ohta, M. Nakawo, K. Fujita, Y. Ageta and N. Takeuchi: The potential use of amino acids as an indicator for micro-organism production in ice core analysis

Diedrich Fritzsche, Frank Wilhelms, Lev M. Savatyugin, Jean Francis Pinglot, Hanno Meyer, Hans-Wolfgang Hubberten and Heinz Miller: A new deep ice core from Akademii Nauk ice cap, Severnaya Zemlya, Eurasian Arctic: first results

R. van Trigt, Harro A. J. Meijer, Arny E. Sveinbjörnsdóttir, Sigfús J. Johnsen and Erik R. Th. Kerstel: Measuring stable isotopes of hydrogen and oxygen in ice by means of laser spectrometry: the Bølling transition in the Dye-3 ice core

David L. Morse, Donald D. Blankenship, Edwin D. Waddington and Thomas A. Neumann: A site for deep ice coring in West Antarctica: results from aerogeophysical surveys and thermo-kinematic modeling

Ryan Bay and P. Buford Price: Optical logging for dust and microbes

Jeffrey Severinghaus, James White, Kendrick Taylor, Edward Brook and Richard Alley: Gas-isotope evidence for abrupt climate change in Antarctica 19 and 15 kyr BP

Kurt Cuffey, Jeff Kavanaugh and Françoise Vimeux: Analyses of a source temperature-corrected Antarctic temperature history

*1710–1800 h*

CHAIR: Eric W. Wolff

Discussion: Ice cores and climate — the next ten years