PROGRAMME OF SESSIONS

MONDAY, 19 JUNE 2006

Opening of symposium

Atsumo Ohmura, President of the IGS
Kristín Ingólfsdóttir, Rector of the University of Iceland
Ólafur Ragnar Grímsson, President of Iceland
Þröstur Þórðarson, Chairman, Local Organizing Committee
Garry Clarke and John Smellie, Chief Editors

Effects of geothermal and volcanic systems on glaciers and ice caps

H. Björnsson: Plenary talk

D.D. Blankenship, I.Y. Filina, M.E. Peters, D.A. Young and D.L. Morse: Geothermal controls on a pervasive water sheet at the head of Kamb Ice Stream, West Antarctica

J.S. Walder, R.G. LaHusen, J.W. Vallance and S.P. Schilling: Emplacement of a lava dome through the crater glacier of Mount St. Helens, 2004/05

F. Rémy and M. Llubes: Subglacial hydrological networks and geothermal flux in Antarctica

S.F. Price and J.S. Walder: Modeling the dynamic response of a crater glacier to lava-dome emplacement: Mount St. Helens, Washington, USA

T. Zwinger, R. Greve, O. Gagliardini, T. Shiraiwa and M. Lyly: A full Stokes-flow thermo–mechanical model for firn and ice applied to the Gorshkov crater glacier, Kamchatka

K.S. Vogfjörd: Seismic signals related to geothermal activity, eruptions and glacial floods (jökulhlaup) in Mýrdalsjökull and Vatnajökull glaciers, Iceland

Th. Thorsteinsson, T. Jóhannesson, G. Larsen, K. Guldbæk Schmidt, M. Forwick, B. Einarsson, B. Oddsson and O. Sigurdsson: Physical properties and stratigraphy of a 115 m ice core from the Grímsvötn ice shelf, Vatnajökull, Iceland

Effects of ice cover on volcanic systems

J.M. Licciardi, M.D. Kurz and J.M. Curtice: Cosmogenic ^{3}He exposure ages of table mountains in Iceland as a tool for reconstructing ice surface profile changes through time

K. Fleming, V. Klemann and Z. Martinec: Lithospheric and asthenospheric stresses induced by changes in ice loading and the accompanying effect on volcanism in Iceland

D.W. McGarvie, J.A. Stevenson, R. Burgess, and A.G. Tindle: Volcano–ice interactions at Prestahnúkur, Iceland: rhyolite eruption during the last interglacial–glacial transition

A.J. Russell, A.R. Gregory, A.R.G. Large, P.J. Fleisher, and T.D. Harris: Tunnel channel formation during the November 1996 jökulhlaup, Skeiðarárjökull, Iceland

M.T. Gudmundsson: Interaction of magma and ice – lessons from eruptions in Iceland 1996–2004

F. Sigmundsson, E. Sturkell, H. Geirsson, V. Pinel, P. Einarsson, R. Pedersen, M.T. Gudmundsson, Th. Hognadottir, M.J. Roberts and K. Feigl: Ice–volcano interaction and crustal deformation at the subglacial Katla volcano, Iceland: GPS, InSAR and optical levelling tilt measurements compared to combined effects of magma accumulation and variable ice load

H. Tuffen, D.W. McGarvie and J. Gilbert: Will subglacial rhyolite eruptions be explosive or intrusive? Evidence from analytical models

J.L. Smellie, J.S. Johnson, W.C. McIntosh, R. Esser, M.T. Gudmundsson, M.J. Hambrey and B. van Wyk de Vries: Six million year history of glaciovolcanism recorded in the James Ross Island Volcanic Group, Antarctica

C. Pagli, F. Sigmundsson, B. Lund, H. Geirsson, E. Sturkell, P. Einarsson and Th. Árnadóttir: Glacio-isostatic deformation around the Vatnajökull ice cap, Iceland: observations and finite element modeling

TUESDAY, 20 JUNE 2006

Effects of geothermal and volcanic systems on glaciers and ice caps

L. Wilson and J.W. Head, III: Heat transfer in volcano–ice interactions: synthesis and applications to processes and landforms on Earth

E. Berthier, H. Björnsson, F. Palsson, K. Feigl, M. Llubes and F. Rémy: Vertical displacements of the Grímsvötn ice shelf (Vatnajökull, Iceland) measured by correlating SPOT5 images

C. Huggel, J. Caplan-Auerbach, C.F. Waythomas and R. Wessels: High-frequency high-magnitude ice-rock avalanches on Iliamna volcano, Alaska: monitoring, analysis and relation to volcanic activity

B. Brock, A. Rivera, G. Casassa, F. Bown and C. Acuña: The surface energy balance of an active ice-covered volcano: Volcan Villarrica, southern Chile

A.A. Ekaykin, V.Ya. Lipenkov, S. Johnsen, V. Masson-Delmotte, J.R. Petit and E.B. Prilepsky: Water isotope budget of subglacial Lake Vostok, Antarctica

G.W. Evatt and A.C. Fowler: Cauldron subsidence and subglacial floods

S. Bulat, I. Alekhina, G. Leitchenkov, A. Ekaykin, V. Lipenkov, M. De Angelis and J-R. Petit: Complementary evidences for hydrothermal activity in the subglacial Lake Vostok, East Antarctica

T. Mölg, N.J. Cullen, D.R. Hardy and G. Kaser: Volcanic and climatic components in forcing glacier recession on Kilimanjaro: clear and less clear factors

Y.D. Muravyev: Volcanism and ice interaction in the northern Pacific segment of the 'Ring of Fire'

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Extraterrestrial ice–volcano interaction

J.W. Head, III and L. Wilson: Heat transfer in volcano–H_2O interactions on Mars: synthesis and applications to processes and landforms
R. Greve: Scenarios for the formation of Chasma Borealis, Mars
A.S. Bargery, S.J. Lane, J.S. Gilbert and L. Wilson: Experimental investigation into the response of liquid water to various atmospheric pressures
C.W. Hamilton, B.C. Bruno, S.A. Fagents and Th. Thordarson: Identifying the products of explosive lava–water interaction on Earth and Mars using nearest neighbor analysis

Poster session

C.S. Benson, M. Lüthi, M. Truffer, R.J. Motyka and S. McNutt: Glacier–volcano interactions on Mt. Wrangell, Alaska
J.L. Smellie and J.S. Johnson: Zeolite compositions in hyaloclastites as a proxy for eruptive palaeoenvironment: a case study using the James Ross Island Volcanic Group, Antarctica
P. Gadányi: Volcanic bombs and their impact craters of the 2004 eruption of the Grímsvötn volcano
P. Bown, A. Rivera, J. Clavero, O. González-Ferrán and J. Carrasco: Atmospherical and glacier impacts of Quizapu eruption in 1932, Southern Chile
H. Björnsson, S. Guðmundsson and F. Pálsson: The impact of volcanic and geothermal activity on the mass balance of Vatnajökull
Th. Thorsteinsson, E.J. Gaidos, S.R. Gíslason, T. Jóhannesson, J.K. Kristjánsson, B. Lanoil, V.Þ. Marteinsson, M. Skidmore and Th. Thorsteinsson: Glaciological, hydrological, geochemical and biological investigations of the subglacial lakes beneath Skaftárkatlar, Western Vatnajökull, Iceland
B.A. Oladottir, Th. Thordarson, G. Larsen and O. Sigmarsson: Did the Mýrdalsjökull ice cap survive the Holocene thermal maximum? Evidence from sulfur contents in Katla tephra layers from the last ~8400 years
H.J.R. Keys: Lahars from Ruapehu Volcano, New Zealand, and risk mitigation
M.B. Stefánsdóttir and S.R. Gíslason: The erosion and suspended matter/seawater interaction following the 1996 catastrophic outburst flood from the Vatnajökull Glacier, Iceland
E. Sturkell, F. Sigmundsson and H. Geirsson: Inflation–deflation cycle of Grimsvötn volcano caused by magma movements prior to and during eruptions: constrains from GPS measurements 1992–2005
S.Ó. Elefsen, Á. Snorrason, G. Sigurdsson, H. Haraldsson, S.R. Gíslason and H. Kristmannsdóttir: Real-time monitoring of glacial rivers in Iceland
J. Hardardóttir, P. Jónsson, G. Sigurdsson, S.Ó. Elefsen, O. Sigurdsson, B. Sigfússon and S.R. Gíslason: Discharge and sediment transport during the 2004 jökulhlaup on the Skeiðará sandur plain, South Iceland

THURSDAY, 22 JUNE 2006

Effects of geothermal and volcanic systems on glaciers and ice caps, *continued*

M.J. Roberts and P. Alho: Volcanically-triggered floods from Öræfajökull, Iceland: routing, inundation area, and maximum intensity
E. Magnússon, H. Rott, H. Björnsson and F. Pálsson: The impact of jökulhlaups on basal sliding observed from SAR interferometry on Vatnajökull, Iceland
A.H. Jarosch and M.T. Guðmundsson: Heat output and distribution of heat sources at the Subglacial Gjálp Volcano, Iceland, inferred from numerical ice flow models
N. Andrés, J.J. Zamorano, J.J. Sanjosé, A. Atkinson and D. Palacios: Glacier evolution during the last eruptive period of Popocatépetl volcano (Mexico)
B. Csatho, C.J. van der Veen, R. von Frese, J. Kiss, H. Rae Kim, T. Leftwich and A. Braun: Subglacial controls on glacier flow in northern Greenland
M.T. Gudmundsson, Þ. Högnadóttir, A.B. Kristinsson and S. Gudbjörnsson: Geothermal activity in the subglacial Katla caldera, Iceland, 1999–2005, studied with radar altimetry
O. Sigurðsson, S. Zóphóníasson, P. Jónsson B. Einarsson, J. Harðardóttir and S.Ó. Elefsen: Hydrographs of jökulhlaups in Iceland
J. Hallett: Non-equilibrium in the phase diagram

Volcano–glacier hazards

J-C. Thouret, J.C. Ramirez, B. Gibert-Malengreau, K.J. Vandemeulebrouc, J-L. Froger and F. Valla: Nevado del Ruiz, Colombia, 21 years after: ice cap evolution and re-assessment of volcano–glacier interactions that feed lahars
O. Sigmarsson: Volume estimates of the magma chamber beneath the subglacial Grímsvötn volcano, Iceland
C. Huggel, J.L. Ceballos, B. Pulgarin, J. Ramirez and J-C. Thouret: Review and reassessment of hazards owing to volcano–glacier interactions in Colombia
K.T. Smith: Jökulhlaups from Snæfellsjökull, west Iceland
D. Schneider, H. Delgado Granados, C. Huggel and A. Kääb: Modeling and assessing lahar hazards under a rapid glacier-melting scenario at Iztaccíhuatl volcano (Central Mexico)
S.S. Jakobsdóttir and K.S. Vogfjörð: Seismicity in Vatnajökull and its relation to volcanic events
G. Larsen, M.T. Gudmundsson and J. Eliasson: The Myrdalssandur flood plain: Jökulhlaups as hazards and agents in environmental change
G.B. Gudmundsson and R. Stefansson: Seismicity beneath Mýrdalsjökull and Eyjafjallajökull ice caps, Iceland

FRIDAY, 23 JUNE 2006

Geophysical exploration of ice-covered volcanoes

J. Smellie: Glaciovolcanism as a major new proxy for paleoenvironmental change: the pros and cons
S.V. Popov, V.N. Masolov and V.V. Lukin: Antarctic subglacial lakes in sector of 90–120 °E
H.A. Danque, D.D. Blankenship, J.W. Holt and D.A. Young: Characterizing analogues for potential microbial habitats on Mars: comparison of three West Antarctic subglacial volcanoes using aerogeophysical data
B.C. Welch, K. Dwyer, M. Helgen, C.F. Waythomas and R.W. Jacobel: Geophysical survey of the intra-caldera icefield of Mt. Veniaminof, Alaska
A. Rivera, F. Bown, A. Wendt, C. Acuña, J. Clavero, J.A. Naranjo and E. Rignot: Volcán Hudson glacier responses after recent plinian eruptions, Southern Chile

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J.C. Behrendt, C.A. Finn, D. Morse, D.D. Blankenship: Subglacial volcanism revealed by aerogeophysical surveys over the West Antarctic Ice Sheet (WAIS) – comparisons with Iceland
C.A. Finn, M. Deszcz-Pan and E. Anderson: Mapping weak, altered zones and ice thickness with aerogeophysical measurements at Mount Rainier and Mount Adams, Washington: Implications for volcanic instability
S.V. Popov, A.M. Popkov, G.L. Leitchenkov, V.N. Masolov and V.V. Lukin: Russian remote sensing investigations of Lake Vostok, East Antarctica

Information from internal acid layers and tephra layers

G.K.C. Clarke, H. Björnsson, S.J. Marshall and N. Lhomme: Tephrostratigraphy of Vatnajökull ice cap, Iceland: tying together glacial and volcanic history with a numerical tracer transport model
S.L. Buchardt and D. Dahl-Jensen: Estimating the basal melt rate at NorthGRIP using a Monte Carlo technique
S.M. Davies, P.M. Abbott, C. Barbante, M. Bigler, S.J. Johnsen, I.K. Seierstad, J.P. Steffensen and S. Wastegård: Tracing tephra layers in the Greenland ice cores
M. Bigler, A. Svensson, J.P. Steffensen and P. Kaufmann: A new continuous high-resolution detection system for sulphate in ice cores
K. Scharrer, C. Mayer, T. Nagler, H. Rott, U. Münzer and Á. Gudmundsson: Effects of ash-layers of the 2004 Grímsvötn eruption on SAR backscatter in the accumulation area of Vatnajökull

Volcano–glacier hazards, *continued*

C. Neal, R. Wessels and C. Huggel: Volcano-ice interactions in Alaska: A review of processes and hazards
K. Jónsdóttir, A. Tryggvason, R. Roberts, H. Soosalu and R. Böðvarsson: Katla's earthquakes: lessons from a glacier covered volcano
J.L. Carrivick: Modelling transient hydrodynamics and rapid landscape change due to a high-magnitude outburst flood: an example from Kverkfjöll volcano, Iceland

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