

# ANTARCTIC PENINSULA CLIMATE VARIABILITY: HISTORY, CAUSES AND IMPACTS

## LIST OF PRESENTATIONS

### Invited Speakers

**Climate change and organisms: the Antarctic Peninsula as an example**  
Andrew Clarke & Peter Convey, British Antarctic Survey, Cambridge, UK.

**Palaeoclimate reconstructions from marine records:**

**Stability of the Larsen Ice Shelf and its regional perspective**

Eugene Domack<sup>1</sup>, Diana Duran<sup>1</sup>, Amy Leventer<sup>2</sup>, Scott Ishman<sup>3</sup>, Sara Doane<sup>1</sup>, Scott McCallum<sup>3</sup>, Jim Ring<sup>1</sup>, and Robert Gilbert<sup>4</sup>

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<sup>3</sup>Dept. of Geology, Southern Illinois University, Carbondale Illinois, 62901 USA,

<sup>4</sup>Dept. of Geography, Queen's University, Kingston Ontario ON K7L 3N6 CANADA

**Palaeoclimate reconstructions from terrestrial records**

Dominic Hodgson, British Antarctic Survey, Cambridge, UK

**Ocean and Sea Ice processes near the Antarctic Peninsula: present conditions and possible variations**

John M Klinck, Old Dominion University

**Ice Shelf Retreat and Collapse in the Antarctic Peninsula**

Ted A. Scambos, National Snow and Ice Data Center, CIRES, University of Colorado

**Climate history from the instrumental record (title to be confirmed)**

Phil Jones, University of East Anglia, Norwich, UK.

**Climate modelling and analysis (title to be confirmed)**

Michiel van den Broeke, IMAU, University of Utrecht, The Netherlands.

## Oral Presentations

### **Antarctic Sea Ice variability in the Weddell, the Bellinghausen and the Amundsen Seas**

Sandra Barreira , Argentine Navy Meteorological Service and Rosa Compagnucci,  
University of Buenos Aires

### **A Foraminiferal Record of Biotic Response to Changing Conditions of the Larsen Ice Shelf**

Scott Ishman<sup>1</sup>, Scott McCallum<sup>2</sup>, Phillip Szymcek<sup>1</sup>, Michael Prentice<sup>3</sup>, and Eugene Domack<sup>4</sup>

<sup>1</sup>Department of Geology, Southern Illinois University, Carbondale, IL 62901 USA,

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<sup>3</sup>Department of Earth Sciences, University of New Hampshire, Durham, NH 03824 USA,

<sup>4</sup>Dept. of Geology, Hamilton College, Clinton, New York 13323 USA

### **Increasing reflectivity of the Antarctic ocean-atmosphere system: Analysis of Total Ozone Mapping Spectrometer (TOMS) and passive microwave data for 1979–1994**

Dan Lubin, Stephen Lynch, Rory Clarke, Esther Morrow and Steven Hart

Arctic and Antarctic Research Center

Scripps Institution of Oceanography

UCSD, 9500 Gilman Drive

La Jolla, CA 92093-0221

### **The upper air record from Bellingshausen station, Antarctic Peninsula**

Gareth J. Marshall & Steven R. Colwell, British Antarctic Survey, Cambridge, UK

### **A Decade of WAP Upper Ocean Water masses**

Douglas G. Martinson, Lamont-Doherty Earth Observatory and DEES, Columbia University, Palisades, NY 10964

### **Major Impacts of Anomalous Atmospheric Circulation Around the Antarctic Peninsula in Late Austral Winter-Early Spring 2001.**

Robert A. Massom<sup>1</sup>, Sharon E. Stammerjohn<sup>2</sup>, Raymond C. Smith<sup>3</sup>, Michael J. Pook<sup>4</sup>, Rich Iannuzzi<sup>2</sup>, Neil Adams<sup>1,5</sup>, Douglas Martinson<sup>2</sup>, Maria Vernet<sup>6</sup>, Charles Fowler<sup>7</sup>, Yuko Massom<sup>8</sup> and H. Roy Krouse<sup>9</sup>

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<sup>9</sup> Department of Physics and Astronomy, University of Calgary, Calgary, Alberta, Canada T2N 1N4

**Potential Effects of Antarctic Peninsula Climate Variability on the Physical Marine Environment**

Michael P. Meredith<sup>1</sup>, Mark A. Brandon<sup>2</sup>, Andrew Clarke<sup>3</sup>, John C. King<sup>3</sup>, Ian A. Renfrew<sup>3</sup> and Chris W. Hughes<sup>1</sup>

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<sup>2</sup> Dept. of Earth Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, United Kingdom

<sup>3</sup> British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET

**Reconstructing the glacial retreat history of Marguerite Bay, Antarctic Peninsula, since the Last Glacial Maximum: A Sedimentologic Approach.**

Lisa Oakes, John Anderson

*Rice University, Houston, Texas, USA*

**Enhanced warming trend over the Antarctic Peninsula**

A. Orr<sup>1</sup>, G. Marshall<sup>2</sup>, D. Cresswell<sup>1</sup>, J.C.R. Hunt<sup>1</sup>, J. Sommeria<sup>3</sup>, C. Wang<sup>4</sup> and M. Light<sup>1</sup>

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<sup>2</sup>British Antarctic Survey, Cambridge, UK

<sup>3</sup>LEGI-Coriolis, Grenoble, France

<sup>4</sup>Dept. of Meteorology, University of Reading, UK

**The Palaeoclimate Archive In The Northwest Weddell Sea**

Carol J Pudsey, P. Morris (BAS), W. Jokat (Alfred-Wegener Institute, Bremerhaven), C. Holz (University of Bremen)

**Changes in Two Species of Zooplankton Indicative of Ice-Covered Waters in Summer within the Palmer LTER Study Region.**

Langdon Quetin and Robin Ross, University of California-Santa Barbara

**Changes in Larsen B ice shelf dynamics prior to breakup: satellite borne observations and modelling outcomes**

W. Rack, H. Sandhaeger, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany; H. Rott, Institute for Meteorology and Geophysics, Innsbruck, Austria

**Air Temperature Trends in the Region of Northern Antarctic Peninsula and South Shetland Islands in 1950-2003**

Viktorie Šťastná, Department of Geography, Faculty of Science, Masaryk University, Brno, Czech republic

Petr Štěpánek - Czech Hydrometeorological Institute, Brno, Czech Republic

**Numerical modelling and data assimilation of recent changes of the Larsen ice shelf**

Andreas Vieli\*, Zhijun Du<sup>^</sup>, Antony J. Payne\*, Andrew Shepherd<sup>^</sup>

\*Centre for Polar Observation and Modelling, University of Bristol, UK

<sup>^</sup>Centre for Polar Observation and Modelling, Scott Polar Research Institute, University of Cambridge, U

## Poster presentations

### **Analysis Of Modern Diatom Floras From The Scotia Sea And Antarctic Peninsula: Is The Holocene Fossil Record Anything But A Relict Assemblage?**

Claire Allen (British Antarctic Survey, UK); Jennifer Pike (Cardiff University, UK); Carol Pudsey (British Antarctic Survey, UK); Catherine Stickley (Cardiff University, UK); Amy Leventer (Colgate University, USA).

### **Monitoring snow parameters on the Antarctic Peninsula using satellite data - a new methodological approach -**

Jorge Arigony<sup>1,2</sup>, Helmut Saurer<sup>1</sup>, Ricardo Jana<sup>1,3</sup>, Jefferson C. Simões<sup>2</sup> and Hermann Gossmann<sup>1</sup>

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<sup>2</sup>Núcleo de Pesquisas Antárticas e Climatológicas, Departamento de Geografia, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

<sup>3</sup>Instituto Antártico Chileno, Punta Arenas, Chile

### **Rock-magnetic and geochemical tracers of terrigenous provenance in glacial-marine sediments from the western Antarctic Peninsula**

Stefanie Brachfeld<sup>1\*</sup>, Matthew Gorryng<sup>1</sup>, Catherine Kissel<sup>2</sup>, Carlo Laj<sup>2</sup>

1. Department of Earth and Environmental Studies, Montclair State University, Upper Montclair, NJ, 07043 USA

2. Laboratoire des Sciences du Climat et de l'Environnement, Unite mixte CEA-CNRS, Avenue de la Terrasse, 91198 Gif-sur-Yvette, France

### **The Role of Zonal and Meridional Atmospheric Circulation in Winter Antarctic Peninsula Warming**

Christopher Karmosky, Colgate University, Hamilton, NY 13346 USA

Adam Burnett, Department of Geography, Colgate University, Hamilton, NY 13346 USA

### **Glacier-front trends on the Antarctic Peninsula over the last 50 years**

Alison J. Cook, British Antarctic Survey, Cambridge, UK.

### **Flow dynamics of the Larsen Ice Shelf from satellite radar interferometry**

Zhijun Du<sup>\*</sup>, Andrew Shepherd

Centre for Polar Observation and Modelling, Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER

### **Palmer, Antarctica Long-Term Ecological Research Project**

#### **"Long-Term Ecological Research on the Antarctic marine ecosystem: Climate migration, ecosystem response and teleconnections in an ice-dominated environment"**

H. W. Ducklow<sup>1</sup>, PI; K. S. Baker<sup>2</sup>, A. C. Clarke<sup>3</sup>, W. R. Fraser<sup>4</sup>, D. M. Karl<sup>5</sup>, D. G. Martinson<sup>6</sup>, L. B. Quetin<sup>7</sup>, R. M. Ross<sup>7</sup>, R. C. Smith<sup>7</sup> and M. Vernet<sup>2</sup>.

<sup>1</sup>The College of William & Mary; <sup>2</sup>Scripps Inst. Of Oceanography; <sup>3</sup>British Antarctic Survey; <sup>4</sup>Polar Oceans Research Group; <sup>5</sup>Univ. of Hawaii ; <sup>6</sup>Lamont-Doherty Earth Observatory; <sup>7</sup>Univ. of California-Santa Barbara.

**P Band sounder instrument design for Antarctica**

Juan Guijarro, European Space Agency ESTEC, 2200 AG Noordwijk  
The Netherlands

**What controls the winter ice extent in the Bellingshausen Sea?**

Dr. Steve Harangozo, British Antarctic Survey, Cambridge, UK.

**Ice Sheet Extent and Subsequent Retreat of the Antarctic Peninsula during the Last Glacial Maximum (LGM)**

David Heroy and John Anderson  
Rice University, Department of Earth Science  
Houston, Texas, 77251-1892

**Glacial and glaciomarine sedimentary successions from the southern Bellingshausen Sea: archives for environmental changes in the Antarctic Peninsula region since the last glacial period**

C.-D. Hillenbrand\*<sup>1</sup>, R.D. Larter<sup>1</sup>, C.J. Pudsey<sup>1</sup>, J.A. Dowdeswell<sup>2</sup>, C. Ó Cofaigh<sup>2</sup>, J. Evans<sup>2</sup> and P. Morris<sup>1</sup>

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<sup>2</sup> Scott Polar Research Institute, University of Cambridge, Cambridge CB2 1ER, UK

**The impact of atmospheric circulation variability on Antarctic Peninsula summertime temperatures**

John C. King and Nicole P. M. van Lipzig, British Antarctic Survey, Cambridge, UK

***Thalassiosira antarctica* records of recent warming in the Antarctic Peninsula**

Amy Leventer<sup>1</sup>, Eugene Domack<sup>2</sup>, Emily Constantine<sup>1</sup>, Michelle Cooper<sup>1</sup>, and Gary McMurtry<sup>3</sup>

1. Department of Geology, Colgate University, Hamilton, NY 13346

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3. Department of Oceanography, University of Hawai'i at Manoa, Honolulu, HI 96822

**A model study on the effect of the accumulation history on chemical tracers measured in ice cores from the Antarctic Peninsula**

Nicole P.M. van Lipzig, Robert Mulvaney and John C. King  
British Antarctic Survey, Cambridge, United Kingdom

**Climatology and Variability of Mesoscale Cyclones in the Western Antarctic Peninsula and Weddell Sea Regions**

Dan Lubin, Robert A. Wittenmyer  
Arctic and Antarctic Research Center  
Scripps Institution of Oceanography  
UCSD, 9500 Gilman Drive  
La Jolla, CA 92093-0221

**Synthetic seismograms and acoustic facies of the Andvord and Schollaert Drifts:  
Antarctic Peninsula**

Patricia L. Manley

Geology Department, Middlebury College, Middlebury, VT 05753 USA

Phone: (802) 443-5430 Fax: (802) 443-2072

**Impact of Antarctic Peninsula climate change on Galindez Island ice cap  
dynamics**

J. D. Shanklin (1), S.B. Kovalenok (2), G.P. Milinevsky (2)

(1) British Antarctic Survey, Cambridge, UK

(2) Ukraine Antarctic Center, Kyiv, Ukraine

**Interannual changeability of the ocean-atmosphere state in Argentine Island  
region**

Milinevsky G.P. (1), Popov Yu.I. (2), Ukrainsky V.V. (2)

(1) Ukraine Antarctic Center, Kyiv, Ukraine

(2) Ukrainian Science Center of Sea Ecology, Odessa, Ukraine

**Variability of Drake Passage Oscillation Index (DPOI) from 1952 to 2003,  
the Antarctic Peninsula area**

Mikio Naganobu (NRIFSF, Japan) and Kunio Kutsuwada (Tokai University, Japan)

**Late Quaternary ice-sheet dynamics in the southern Bellingshausen Sea as  
reconstructed from marine geophysical evidence**

C. Ó Cofaigh<sup>1\*</sup>, J.A. Dowdeswell<sup>1</sup>, R.D. Larter<sup>2</sup>, C.J. Pudsey<sup>2</sup>, C.-D. Hillenbrand<sup>2</sup>, J.

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UK

**Seasonal and sub-seasonal diatom palaeoceanographic records from the last  
deglaciation, Palmer Deep, western Antarctic Peninsula**

Eleanor Maddison<sup>1</sup>, Jennifer Pike<sup>1</sup>, Amy Leventer<sup>2</sup> and Eugene Domack<sup>3</sup>.

<sup>1</sup> School of Earth, Ocean and Planetary Sciences, Cardiff University, UK.

<sup>2</sup> Geology Department, Colgate University, USA.

<sup>3</sup> Department of Geology, Hamilton College, USA.

**Glacial flow on the Antarctic Peninsula: a decade of change?**

Hamish Pritchard and David Vaughan, British Antarctic Survey, High Cross,  
Madingley Road, Cambridge, CB3 0ET, United Kingdom

**Influence of zonal wave 3 in the Southern Hemisphere atmospheric circulation  
on Antarctic sea-ice concentration**

M. Raphael, Dept. of Geography, University of California, Los Angeles

**Nonlinear Paleoclimatology: Reconstructions in West Antarctica**

Reusch, David B. (1), Alley, Richard B. (1), Hewitson, Bruce C. (2)

(1) The Pennsylvania State University, (2) University of Cape Town

**Analysis of Outlet Glaciers on the East Coast of the Antarctic Peninsula**

Claudia Riedl(1), Helmut Rott(1) and Wolfgang Rack(2)

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**Accelerated ice discharge from Antarctic Peninsula glaciers.**

Eric Rignot, Jet Propulsion Laboratory, 4800 Oak Grove Drive MS 200-227, Pasadena, CA 91109-8099, USA.

Robert Thomas, EGandG, Wallops Flight Facility, Laboratory for Hydrospheric Processes, Wallops Island, VA 23337, USA.

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Gino Casassa and Andres Rivera, Centro de Estudios Científicos, Av. Prat 514, Valdivia, Chile.

Prasad Gogineni, Radar Systems and Remote Sensing Laboratory, The University of Kansas, 2291 Irving Hill Road, Lawrence, KS 66045, USA.

**Landforms associated to the deglacial environment of Ecology Glacier, King George Island, Antarctica**

Rosemary Vieira, Jefferson C. Simões, Máira S. Rossato and Francisco E. Aquino  
Núcleo de Pesquisas Antárticas e Climáticas

Instituto de Geociências, Universidade Federal do Rio Grande do Sul,  
Avenida Bento Gonçalves 9500, Porto Alegre, Brazil

**Climatology and atmospheric temperature warming trend for King George Island, Antarctica**

Francisco E. Aquino<sup>1,2</sup>, Jefferson C. Simões<sup>1</sup>, Alberto W. Setzer<sup>2</sup> and Francisco A. Ferron<sup>1,3</sup>

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**Climate Variability, Bio-optical Properties and Phytoplankton Productivity in the WAP region**

R.C. Smith(1), K. Ireson(1) & M. Vernet(2)

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2. SIO, University of California at San Diego, La Jolla, CA 92093

**Updated assessment of surface lowering of the ice ramp at Rothera Point,  
Antarctic Peninsula**

Andy M. Smith and David G. Vaughan  
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Cambridge CB3 0ET, UK.

**Climate warming and related phenomena at the region of Antarctic  
Peninsula**

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