



Past Antarctic Ice Sheet Dynamics (PAIS) Conference

Trieste, Italy, 10th-15th September 2017

Sunday September 10th

Caffè degli Specchi, Piazza Unità d'Italia (Trieste)

18:30-20:00 Ice breaker

Monday September 11th

Stazione Marittima, Molo dei Bersaglieri 3, Riva del Mandracchio (Trieste)

8:00 Onsite registration

9:00-9:30 Welcome and greetings from: OGS President Maria Cristina Pedicchio, PNRA-CSNA President Antonio Meloni, the PAIS co-chief officers Laura De Santis and Tim Naish who briefly illustrate the science and logistic program, the aims and expected outcomes

Theme – 1A: Advances in Antarctic Ice Sheet reconstructions from geological and ice core archives: LGM to Recent

Chair: Tim Naish

9:30-10:00 **Invited** Louise Sime *“Advances in Antarctic ice-sheet reconstructions from ice core archives”*

10:00-10:30 **Invited** Mike Bentley *“Advances in Antarctic ice-sheet reconstructions from geological archives: Recent reconstructions (Last Interglacial to present)”*

10:30-10:45 Nancy Bertler et al. *“Wind driven ocean/ice interactions during the Ross Sea region deglaciation”*

10:45-11:00 Barbara Stenni et al. *“Regional and continental scale Antarctic climate variability over the last 2,000 years”*

11:00-11:15 Reed Scherer et al. *“Extensive Holocene grounding line retreat and uplift-driven re-advance across Ross and Ronne sectors of West Antarctica”*

11:15-11:45 COFFEE BREAK

11:45-12:00 Rob McKay et al. *"Reassessing the post-Last Glacial Maximum retreat history from the southwest Ross Sea"*

12:00-12:15 John Anderson et al. *"Uncovered anatomy of a subglacial hydrological system coupled to past ice sheet grounding lines"*

12:15-12:30 Philip Bart *"A modern-day unpinning of the Ross Ice Shelf from Ross Bank"*

12:30-12:45 Claus-Dieter Hillenbrand et al. *"Reconstruction of Late Quaternary palaeoenvironmental changes on the West Antarctic continental margin using a multi-proxy approach"*

12:45-13:00: Laura De Santis et al. *"Exploring past and modern bottom current pathways along the continental margin: the Ross Sea survey 2017"*

13:00-14:15 LUNCH

Chair: Laura De Santis

14:15-14:30 Leanne Armand et al. *"Searching for paleoclimate archives on the East Antarctic margin: Sabrina Seafloor Survey 2017"*

14:30-14:45 Kate Newton et al. *"Glacial discharge, productivity and oceanic variability from the Antarctic coastal zone: results from a 171 m Holocene sediment core from IODP Expedition 318"*

14:45-15:00 Fausto Ferraccioli et al. *"New aerogeophysical views of bedrock topography, subglacial geology and englacial layers in the South Pole sector of the East Antarctic Ice Sheet"*

15:00- 15:15 Bethan Davies et al. *"George VI Ice Shelf: Holocene stability and interactions with fluctuating valley glaciers on Alexander Island, Antarctic Peninsula"*

15:15-15:30 James Smith et al. *"Using sub-ice- shelf sediments to reconstruct glacier history – a case study from Pine Island Glacier"*

15:30-15:45 Dominic Hodgson et al. *"Deglaciation and future stability of the Coast Land ice margin, Antarctica"*

15:45-16:00 COFFEE BREAK

16:00 -17:00 POSTER SESSION

17:00-18:00 plenary discussion on theme 1A (Chair - **Nancy Bertler**; Panel - John Anderson, Rob McKay, Louise Sime, Mike Bentley).

18:00-20:00 workshops. Check the conference web site for the workshop time table and info <http://pais-conference-2017.inogs.it/node/310>

- Workshop: Seismic Data Library System (SDLS) business meeting (Chairs: Frank Nitsche and Chiara Sauli), open
- Workshop: IODP Exp. 374 pre-cruise meeting (chairs: R. McKay, L. De Santis, D. Kulhanek) closed

- *Workshop: APECS – Social Media and Science Communication (Chairs: Andrea Spolaor, Mathieu Casado François Burgay, Federico Dallo, Jilda Alicia Caccavo) open*

Tuesday September 12th

Theme – 1B: Advances in Antarctic Ice-Sheet reconstructions from geological and ice core archives: Deep time reconstructions

8:00 Onsite registration

Chair: Sandra Passchier

8:30-9:00 **Invited** Richard Levy et al. *“Antarctic Ice-Sheet sensitivity to orbital forcing, crustal subsidence, and carbon dioxide fluctuations”*

9:00-9:15 Robert Larter et al. *“Development of a large sediment drift near the mouth of Marguerite Trough, Antarctic Peninsula as a record of past ice stream dynamics”*

9:15-9:30 Karsten Gohl et al. *“MeBo seabed drilling in the Amundsen Sea Embayment: Operational experience and preliminary results”*

9:30-9:45 Gabriele Uenzelmann-Neben *“Variations in Ice Sheet Dynamics along the Amundsen Sea and Bellingshausen Sea West Antarctic Ice Sheet margin”*

9:45-10:00 Joseph Prebble et al. *“Antarctic Ice Sheet excluded from the western Ross embayment during the earliest Oligocene”*

10:00-10:15 Guy Paxman et al. *“Long term landscape and ice sheet evolution of the Wilkes Subglacial Basin, East Antarctica”*

10:15-10:30 Tina van de Flierdt *“Geological evidence for Late Pleistocene variability of the East Antarctic Ice Sheet”*

10:30-11:00 COFFEE BREAK

11:00-11:15 Francesca Sangiorgi et al. *“The role of the ocean for Antarctic cryosphere dynamics during mid-Miocene: a view from offshore Wilkes Land”*

11:15-11:30 Yusuke Suganuma et al. *“Reconstruction of the East Antarctic ice sheet variability during the last 3 Ma in the central & eastern Dronning Maud Land, East Antarctica”*

11:30-11:45 Trevor Williams et al. *“Using Sediment Provenance to Study Ice Streams in the Weddell Sea Embayment of Antarctica”*

11:45 -12:30 POSTER SESSION

12:30-13.30 LUNCH

Theme - 2: Advances in understanding the drivers, processes, and rates of past and future Antarctic Ice-Sheet change from models and data.

Chair: Phil Bart

13:30- 14:00 **Invited** Florence Colleoni *"Past unknowns for an unknown future"*

14:00-14:30 **Invited** Paolo Stocchi et al. *"Relative sea-level changes and sediment deposition: a first step toward a fully coupled system"*

14:30-14:45 Catherine Bradshaw et al. *"Decoupling of temperatures and ice volume in the Middle Miocene: A missing piece of the puzzle?"*

14:45-15:00 Edward Gasson et al. *"The Antarctic Ice Sheet during the mid-Miocene and mid-Pliocene"*

15:00-15:15 Gerrit Lohmann et al. *"Antarctic Ice Sheet during the Last Interglacial: Thresholds and Feedbacks"*

15:15-15:30 Terry Wilson et al. *"Antarctic ice mass change since the LGM: constraints from geodetic measurements of bedrock crustal motions"*

15:30-15:45 Christine Siddoway et al. *"New insights into the Ross Ice Shelf region ice, ocean, bathymetry, and lithosphere through IcePod airborne geophysical data"*

15:45-16:00 Daniel Lowry et al. *"Transient ice sheet simulation of the Ross Ice Shelf deglaciation"*

16:00-16:30 COFFEE BREAK

16:30-16:45 Enea Montoli et al. *"Impact of Ocean basal melting formulations: Pine Island and Totten glaciers case study"*

16:45-17:00 Favier Vincent et al. *"How to give accurate SMB forcing to ice dynamic model for the 21 st century projections?"*

17:00-18:00 Plenary discussion on Theme 1B and Theme 2 (Chair – Tina Van de Flierdt, Panel – Richard Levy, Florence Colleoni, Paolo Stocchi, Kasten Gohl)

DEPARTURE BY BUS AT 18.30 IN FRONT OF THE CONFERENCE VENUE FOR THE SOCIAL DINNER IN AQUILEIA

Wednesday September 13th

8:00 Onsite registration

Workshops all day: check the conference web site for the workshop time table and info

<http://pais-conference-2017.inoqs.it/node/310>

1. *Workshop*: Mid to high latitude climate impacts on EAIS stability since the LGM. Defining knowledge gaps and research priorities (Chair: Vincent Favier, Tessa Vance, Tas van Ommen), open
2. *Workshop*: Subcommittee on paleobathymetry and paleotopography (Chair: Karsten Gohl and Stewart Jamieson), open
3. *Workshop*: Can we constrain and reconstruct the extent of the past and future ice shelves? models and observations, Antarctica future tipping point (Chair: Florence Colleoni, Laura De Santis, Fabio Florindo, Paolo Stocchi), open
4. *Workshop*: PRAMSO - Palaeo-climate Records from the Antarctic Margin and Southern Ocean (Chair: Tim Naish), open
5. *Workshop*: Terrestrial-Marine Regional Glacial History, Terra Nova Bay area (Chair: Jamey Stutz), open
6. *Workshop*: IODP mission-specific platform Expedition 373, Antarctic Cenozoic Climate (Chair: Trevor Williams and Carlota Escutia), open
7. *Workshop*: Southern Ocean Climate Evolution (IODP 918-pre) mini-workshop (Minoru Ikehara, Xavier Crosta)
8. *Workshop*: Internal post-cruise meeting of the PS104/MeBo Science Team (Chair: Karsten Gohl), closed
9. *Workshop*: Internal post-cruise meeting of the OGS Explora 2017 cruise science team (L. De Santis, M. Rebesco), closed

18:00-20:00: Film *"Ice and the Sky"* 1.3 hours, it is followed by a short tales about Claude Lorius and comments on his contribution to Antarctic science, by Carlo Alberto Ricci (MNA and Univ. of Siena, Italy), Peter Barrett (ARC-UVW, NZ), Barbara Stenni (Univ. Venezia, Italy). Stazione Marittima, room: Oceania. *Language: English*

Thursday September 14th

Theme – 3: Bipolar connections and far-field responses to Antarctic Ice Sheet change.

8:00 Onsite registration opens

Chair: Angelo Camerlenghi

8:30-9:00 **Invited** Andrea Dutton *"Inferring Antarctic Ice Sheet contributions to past interglacial sea level highstands from far-field sea level reconstructions"*

9:00-9:30 **Invited** Julie Brigham-Grette et al. *"Plio-Pleistocene Teleconnections between the Two Poles: Emerging Questions to address Earth's future"*

9:30-10:00 **Invited** Rob DeConto et al. *"Using past Ice sheet dynamics to improve models and predictions of future sea level"*

10:00-10:15 Renata Giulia Lucchi et al. *"Laminated sediments as proxy of extreme meltwater events: the NW Barents Sea marine record of MWP-1"*

10:15-10:30 Michele Petrini et al. *“Grounding Line migration and ocean basal melting: competing effects in the simulated retreat of the Storfjorden (Svalbard) ice stream during the last deglaciation”*

10:30 – 11:00 COFFEE BREAK

11:00-11:15 Georgia Grant et al. *“Amplitude and frequency of Pliocene (~3.2-2.6 Ma) glacio-eustatic, sea-level fluctuations from a new shallow-marine sediment record, Whanganui Basin, New Zealand”*.

11:15-11:30 Gavin Dunbar et al. *“The relative influence of precession and obliquity on Late Pliocene (3.3- 2.4 Ma) polar ice sheet dynamics and global sea-level change”*

11:30-11:45 Bas de Boer et al. *“Orbital driven Late Pliocene climate changes and their relation to ice volume and relative sea-level change”*

11:45-12:00 Michael Weber et al. *“Reconstructing and understanding deglacial Antarctic Ice Sheet dynamics – novel insights and implications for future sea-level rise”*

12:00-12:15 Xavier Crosta et al. *“Late Holocene sea ice dynamics and potential forcing mechanisms in the Indian sector of the Southern Ocean”*

12:15-12:30 Frank Lamy et al. *“Atmosphere-ocean changes in the Pacific Southern Ocean over the past Million years and implications for global climate”*

12:30-12:45 Alastair Graham et al. *“Major advance of South Georgia glaciers during the Antarctic Cold Reversal following extensive sub-Antarctic glaciation”*

12:45 -13:30 POSTER SESSION

13:30-14.30 LUNCH

Theme 4: Co-evolution of climate and life in the Antarctic & Southern Ocean.

Chair: Steven Chown

14:30- 15:00 **Invited** : Jan Strugnell *Dating Antarctic ice sheet collapse: A molecular approach”*

15:00- 15:30 **Invited** : Pete Convey *“Today’s Antarctic terrestrial biodiversity – multiple signals of long-term presence and habitat persistence”*

15:30-16:00 **Invited** : Jane Francis *“Ice in a greenhouse world”*

16:00 -16:30 COFFEE BREAK

16:30-16:45 Bridget Lee et al. *“Bioavailable iron in the Southern Ocean”*

16:45-17:00 James Crampton et al. *“Pulsed phytoplankton turnover in the Southern Ocean forced by stepwise Antarctic cooling”*

17:00-17:15 Ulrich Salzmann et al. *“Cenozoic terrestrial climate change and the demise of forests on Wilkes Land, East Antarctica”*

17:15-17:30 Stefano Schiaparelli et al. *“Phylogeographic mismatches in guest-host relationships among Antarctic invertebrates: a key to understand (and date) past climatic events?”*

17:30-17:45 Osamu Seki et al. *“Coupling of Southern Ocean climate, dust and CO₂ over the past 10 million years”*

17:45-18:00 Elie Verleyen et al. *“The imprint of Neogene and Quaternary climate filtering on contemporary biogeographic patterns in the Antarctic lacustrine diatom biome”*

18:30-19:30

FILM (20 min) *“Past Antarctic Ice Sheet dynamics: the sound of a community effort”*

Introduction by Giulia Massolino (OGS, film editor), live music performed by Marco Battigelli (Conservatorio Tartini, Trieste)

Invited presentation: Peter Barrett *“Role of film in science communication”*

Friday September 15th

8:00 Onsite registration

8:30-10:30 POSTER SESSION

10:30 -11:00 COFFEE BREAK

11:00-12:00 Plenary discussion on Themes 3 and 4 (Chair - Steven Chown. Panel – Jane Francis, Andrea Dutton, Julie Brigham-Grette, Peter Convey, Jan Strugnell, Rob DeConto)

12:00-13:30 LUNCH

Theme 5: Emerging research priorities of societal relevance

Chair: Carlota Escutia

13:30-14:00 **Invited** : Tim Naish et al. *“Antarctica and the Southern Ocean in 2067: what future will we choose?”*

14:00-14:30 **Invited** : Anna Wåhlin *“Bounds on marine melting of the Antarctic ice sheet - lessons learned and knowledge gaps”*

14:30-15:00 **Invited** : Valerie Masson-Delmotte *“IPCC AR6 cycle, and how to contribute”*

15:00-15:30 **Invited** : Chuck Kennicutt *“Reaching for the Horizon: Advancing Ice Sheet Dynamics Science”*

15:30-16:00 **Invited** : Yeadong Kim *“The importance of building international partnerships”*

16:00-16:30 **Invited** : Steven Chown *“Antarctic Engagement to avoid an order from strength world”*

16:30 – 17:00 COFFEE BREAK

17:00 -18:00 Plenary discussion on future directions and priorities for PAIS. (Chairs - Tim Naish & Laura De Santis. Panel – Anna Wahlin, Valerie Masson-Delmotte, Chuck Kennicutt, Yeadong Kim, Steven Chown, Rob DeConto, Carlota Escutia)

Wrap up, best poster presentation student prizes

Closing ceremony

Workshop: “Investigator post-cruise 2016-17 meeting” (Chair: L. Armand) closed

Saturday September 16th

Workshops: check the conference web site for the workshop time table and info <http://pais-conference-2017.inogs.it/node/310>

Workshop: “Holocene climate variability off Wilkes Land, East Antarctica and Integrating coastal ice cores with high resolution sediment records (chairs: J. Entorneau, C. Escutia, R. McKay, N. Bertler)”, closed

Workshop: “Drilling beneath Antarctica's ice shelves: A workshop to discuss science objectives and future drill sites to recover records of past climate and environmental change. Sites that test model-driven hypotheses of ice sheet dynamics will be a focus (Chairs: Richard Levy, Gerhard Kuhn Tim Naish), open