

AUSTRALIAN ANTARCTIC RESEARCH CONFERENCE

Connecting Australia's polar research community in a rapidly changing world

SESSION 1

All posters in session 1 will be viewable on Tuesday and Wednesday. Presenters will be with their posters at the following times:

GROUP A

POSTER PROGRAM		TUESDAY 1335 - 1435	WEDNESDAY 1435 - 1535
Name	Poster Title		#
ANTARCTICA IN A CHANGING CLIMATE AND EARTH SYSTEM			
Miss Elka Blackman - SAEF, UOW	Assessing long-term changes in Antarctic moss health		1
Dr Matthias Dehling - SAEF, Monash	Global endemism of birds increases from north to south		3
Ms Chao Jiang - Monash	Modelling the internal dynamics of the Amery Ice Shelf, East Antarctica		5
A/Prof Laurie Menviel - UNSW	Impact of changes in Southern Ocean circulation on atmospheric CO2 concentration		7
Dr Tamara Schlosser - UTAS	Phytoplankton blooms in the Southern Ocean in high vs. low sea ice years		9
Dr Catherine Vreugdenhil - UOM	The Effects of Ocean Dynamics on the Melting of Ice Shelves: a Fine-scale Numerical Simulation Approach		11
Dr Alan Aitken - UWA	GraphSSeT: Harnessing the power of graphs to model subglacial sediment transport		13
Dr Johanna Beckmann - Monash/SAEF	Quantifying Antarctic Ice Sheet Mass Loss: A Modeling Framework to disentangle Climate Change from Natural Variability		15
Mr Lawrence Bird - Monash	Gravity-derived Antarctic bathymetry using the Tomofast-x open-source code: a case study of Vincennes Bay		17
Dr Maddie Brasier - AAD	Krill and Krill Ecosystem (KaKE) research in East Antarctica		19
Dr Sue Cook - AAPP	Monitoring ocean-driven melt of Antarctic ice shelves		21
Dr David Etheridge - CSIRO	The Antarctic evidence of global atmospheric change		23
Dr Lu Li - UWA	Towards Linking Subglacial Geological Conditions with Ice Sheet Model Parameterization		25
Msc Jakob Gradl - UTAS/IMAS	Physics-informed A.I. to combine basal friction and ice fabric		27

Dr Thomas Holmes – UTAS	Untangling ligand controls on iron cycling in the Southern Ocean	29
Dr Ruhi Humphries – CSIRO	Characterisation of aerosol losses of air sampling inlets from RV Investigator and RSV Nuyina	31
Dr Lenneke Jong – AAD	Integrating airborne geophysical datasets and models	33
Ms Shyla Kupis – UTAS	Seismic reconnaissance of firn structure in Denman Glacier region, East Antarctica	35
Miss Kit Leng Leong – ANU	Combined inversion of GRACE-FO and ICESat-2 data for the Antarctic Ice Sheet mass balance estimation	37
Lukas Lis - UOW	Modelling changing Antarctic bryophyte community health using ultra-high resolution RPAS imagery	39
THE HUMAN DIMENSION OF ANTARCTICA		
Assoc Prof Patti Virtue - ACEAS	Exploring variability in omega-3 levels in Antarctic Krill: Indicators of Southern Ocean health	41
Dr Isabelle Onley - UOA	Assessing the ongoing risk and managing detections of non-native invertebrates in the Antarctic region	43
Dr Valeria Senigaglia - QUT	Geopolitical coalitions and their significance in environmental management and decision-making in the Southern Ocean	45
Valeria Coscini - ANU	Specially Protected Species, the Madrid Protocol and a Changing Climate	47
Dr Daniel Wilkins – AAD	Ice Station: Site assessment of former Wilkes station waste dump using drone mounted radar, magnetometry, and in situ vapour sampling.	49
OTHER ANTARCTIC/SUB-ANTARCTIC/SOUTHERN OCEAN TOPICS		
Mr Zijin Chen – UTAS/AAPP	How sea ice affects Southern Ocean water mass transformation	51
LCDR Daniel Atwater - AAPP/RAN	Sensitivity of Antarctic landfast sea ice under varying atmospheric conditions	53
Mr Elio Campitelli - Monash	Frost Impressions of ACCESS-S2 Antarctic Sea Ice Forecast	55
Dr Julie McInnes - AAD/IMAS	The population status and trends of Macquarie Island vertebrates	57
Ms Talitha Nelson - UTAS	The response of East Antarctic phytoplankton to organically bound iron and light	59
Miss Paola Papapetros - UTAS	The influence of subglacial water laden sediments on ice shelf basal melting	61
Mrs Nurmalia Adroli - ANU	Ocean Regulation of Phytoplankton Species in the Southern Ocean (SO)	63
Mr Chris Aiken - UTAS/IMAS	Recent Change in the Indian sector of the Subantarctic Front	65
Dr Sreenath AV - Monash	Response of surface fluxes, cloud and precipitation characteristics to synoptic weather types over the Southern Ocean	67
Edelgard Baumann - AAPP	Comprehensive Dataset of Dissolved Trace Metals Along the MISO I09S Transect: From Antarctica to Southwest Australia	69
Mr Josef Bisits - UNSW	The effects of cabbeling on mixing and energetics in polar oceans	71
Miss Camila Cataldo Mendez - AAPP	Euphausiids Unveiled: Comprehensive Study of <i>E. superba</i> , <i>E. crystallorophias</i> and <i>E. triacantha</i> Diet – a DNA metabarcoding and stable isotope approach.	73
Mr Ming Cheng - ANU	Insights on Controls on Southern Ocean Deep Chlorophyll Maxima (DCMs) Formation	75
Mr Bajrang Chidhambaranathan -UOM	Dynamics of Southern Ocean Gyres and Zonal Currents through Direct Numerical Simulations	77
Mr William Connor - UTAS/IMAS	Quantifying distinctions in otolith shape of morphologically similar Sub-Antarctic Macrourus species to assist fishery observer identifications.	79
Mr Sam Eggins - ANU	Co-evolution of a CO ₂ -specific, high affinity Rubisco and a weak carbon concentrating mechanism in the polar diatom <i>Proboscia inermis</i>	81
Dr Ruth Eriksen - CSIRO Environment	Fragilariopsis yeti: A new, seasonally-recurrent, nano-planktonic diatom from the Southern Ocean Time Series	83

Ms Noémie Friscourt - UTAS/IMAS	Lasers and predators: An innovative method to study trace element variations in the Antarctic fur seal	85
Ms Maya Jakes - IMAS	Thermohaline interleaving in the Antarctic Circumpolar Current	87
EXTREMES, REGIME SHIFTS AND TIPPING POINTS IN THE ANTARCTIC SYSTEM		
Prof Julie Arblaster - Monash	Understanding MJO Teleconnections to the Southern Hemisphere Extratropics During El Niño, La Niña, and Neutral Years	89
ANTARCTICA'S PAST		
Dr Daniel Baggenstos - AAD	A new Australian gas lab for the Million Year Ice Core project	91
Dr Chris Burridge - UTAS	Responses of Antarctic seabird populations to past climate change	93
Dr Emma-louise Cooper - Monash	Combining geological (cosmogenic nuclides) and biological (Antarctic springtails) evidence to understand the longevity of ice-free sectors in Antarctica	95
Dr Yuhao Dai - ANU	Deep Southern Ocean Carbonate Chemistry during the Mid-Miocene Climate Optimum	97
Dr David Fink - ANSTO	Bedrock weathering and permafrost exhumation in McMurdo Dry Valleys : cosmogenic ¹⁰ Be/ ²⁶ Al depth profiles confirm persistence of hyper-arid cold climates since the Pliocene	99
Dr David Heslop - ANU	Antarctic Ice Sheet Albedo and Its Role in Long-Term Climate Sensitivity	101
Miss Molly Husdell - UQ	Sea ice reconstruction of the Cape Darnley region, East Antarctica, over the past 500 thousand years	103
ANTARCTICA'S FUTURE: RESEARCH DIRECTIONS IN THE GLOBAL CONTEXT		
Dr Simon Alexander - AAD	Australian Antarctic atmospheric science: Future directions	105
Dr John French - AAD	Current and future directions of the Davis Atmospheric Observatory	107
Ms Rebecca Kaiser - UTAS	From Antarctica to Outer Space: Conflict Management Insights for Extreme Environments	109

GROUP B

POSTER PROGRAM		TUESDAY 1440 - 1540 WEDNESDAY 1330 - 1430
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Miss Sienna Blanckense - UQ	Overview of Cape Darnley Bottom Water and comparison to other formation sites	2
Mr Wangpeng Gui – Uni Melb	Estimating the basal melting of ice shelves affected by submesoscale dynamics	4
Dr Hongyuan Liu - UTAS	High performance modelling of Antarctic iceberg calving with a parallelized hybrid finite-discrete element method	6
Dr Tyler Pelle - Scripps Institution of Oceanography	Subglacial freshwater accelerates retreat and the sea level contribution of vulnerable Antarctic glaciers over the 21st century	8
Dr Taimoor Sohail - UNSW	Improving Argo salinity measurements around Antarctica using machine learning	10
Mr Yinghuan Xie - UTAS/IMAS	Investigating the Differences in Predicting Marine CO2 Removal with Different Ocean Model Resolutions in the Southern Ocean and Globally	12
Mr John Bright Ayabilah - UTAS	The changing mass of the Antarctic Ice Sheet during ENSO-dominated periods in the GRACE era (2002-2023)	14
Prof. Robin Bell - Lamont Doherty Earth Observatory Of Columbia	A Framework to Advance our Understanding of Change in East Antarctica	16
Dr Fabio Boeira Dias - UNSW	Ocean heat budget of the Antarctic margins using a circumpolar ocean-ice shelf model	18
Dr Zachary Carter – Uni Adel	A structured approach to biosecurity decision-making in the Antarctic	20
Dr Edward Doddridge - AAPP	Antarctic sea ice: the unknown unknown of Southern Ocean carbon	22
Dr Annie Foppert - UTAS/AAPP	Antarctic Bottom Water variability and change over the past 50+ years	24
Mr Lachlan Gilchrist - UOW	Twenty years of moss community change in East Antarctica	26
Mr Xiang Yang – IMAS	Changes in carbon cycling in the Antarctic seasonal ice zone revealed by biogeochemical-Argo floats	28
Miss Amber Howard – Uni Canb	Unveiling Cryptic Flow Networks in East Antarctica: High-Resolution Mapping of Near-Surface Melt Patterns Using GPR and Satellite Imagery	30
Mr Sivakunalan Inparaja – Uni Melb	Dynamics of Downslope Flow over the Antarctic Continental Shelf under the Influence of Convection and Surface Wind Stress	32
Prof Matt King – UTAS / ACEAS	Realism of ISMIP sea-level projections over the first half of the 21st century	34
Dr Pauline Latour – UTAS / ACEAS	Response of Antarctic phytoplankton communities to increased iron and manganese conditions	36
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THE HUMAN DIMENSION OF ANTARCTICA		
Dr Vanessa Adams - UTAS	Building representative MPA networks: MPA planning in the Southern Ocean	40
Ms Frances Perry - UOA	Using eDNA to prevent marine invasions in the Southern Ocean	42
Vini Drozdowski - UTAS	The great indoors: challenging the narratives of Heroic Age Antarctica.	44
OTHER ANTARCTIC/SUB-ANTARCTIC/SOUTHERN OCEAN TOPICS		
Dr Katherina Petrou - UTS	Role of light in shaping community structure and physiology in the Sub-Antarctic Zone (SAZ): a study on silicon biomineralisation in Sub-Antarctic waters	46
Dr Hannah Dawson - IMAS, UTAS	The role of deep ocean warming in Antarctic sea ice loss	48
Ms Katy Baker - IMAS/UTAS	A multispecies size spectrum model for assessing carbon sequestration driven by the mesopelagic migrant pump	50
Ms Kelly-anne Lawler - ANU	Our knowledge of Southern Ocean radiolarians is SO-RAD!	52
Dr Steph McLennan - Geoscience AUS	Informing environmental management with landscape mapping	54
Dr Julia Neme - UTAS	Building an observational estimate of subpolar gyre strength	56
Dr Beatriz Peña-molino - Csiro	Observing the continental margin in East Antarctica with CPIES: insights from model	58
Mr Wilton Aguiar - ANU	Does the Antarctic Slope Current control ocean heat transport towards Antarctica?	60
Dr Matthis Auger - UTAS/IMAS	Zonal Wave-3 impact on subpolar Southern Ocean dynamics	62
Dr Johan Barthelemy - UOW	An AIoT Platform for Real-Time Remote Monitoring of extreme Antarctic Environments	64
Dr Scott Meyerink - AAPP	Assessing QA/QC Practices during the production of a GEOTRACES dataset: Dissolved Trace Metals from Antarctica to south-west Australia (GO-SHIP I09S)	66
Ms Mingxing Cha - Curtin Uni	Evaluation of three Chlorophyll-a satellite products in the Southern Ocean	68
Prof. Xuhua Cheng -College Of Oceanography, Hohai University	Ocean dynamical processes underlying sea-level change and variability in the Southern Ocean	70
Dr Emiliano Cimoli - UTAS/IMAS	Advancing under-ice hyperspectral imaging of shallow Antarctic coastal marine habitats with HICYBOT	72
Mr Joseph Cresswell - IMAS	Paleo-productivity and iron flux in the southern Indian Ocean: Insights into carbon cycling during the Last Glacial Maximum and deglaciation	74
Prof. Michael Ellwood - ANU	Exploring the physiological response of Southern Ocean phytoplankton cultured under different concentrations of iron and copper	76
Dr Jodi Fox - UTAS/IMAS	Integration of new field geoscience observations and unoccupied aerial vehicle (UAV) photogrammetry at Gaussberg volcano	78
Dr Millie Goddard-Dwyer – UTAS/IMAS	The role of Humic Substances in Southern Ocean Iron cycling.	80
Miss Eliza Hamilton – ANSTO	Impact of Ice Cover on the Chemistry of Lakes in the Windmill Islands Antarctica Conference: Australian Antarctic Research Conference, Hobart	82
Dr Jan Jansen - UTAS	Antarctic seafloor biodiversity today and in the future: Circum-continental mapping reveals hotspots of richness, cover, biomass and predicted change.	84
Dr Mardi McNeil - Geoscience Australia	Seabed glacial geomorphology features on the East Antarctic continental shelf: first results from RV Polarstern expedition PS141, EASI-3	86
EXTREMES, REGIME SHIFTS AND TIPPING POINTS IN THE ANTARCTIC SYSTEM		

Mr Michael Eabry - CCRC, UNSW	New perspectives on compounding drivers of the 2016 Antarctic sea-ice decline	88
Dr David Gwyther - UQ	Simulating the relationships between Dense Shelf Water production and basal melting at the Amery Ice Shelf, East Antarctica	90
ANTARCTICA'S PAST		
Mr Gianluca Borraccini - Ca' Foscari University Of Venice And University Of Pisa	Landscape analysis and multiple cosmogenic nuclides evidence a late Pleistocene complex glacial history on Ross Island, western Ross Sea, Antarctica	92
Dr Ailsa Chung - Université Grenoble Alpes	Determining the age-depth relationship at North Patch using radar measurements and ice flow modelling	94
Miss Janet Copland - ACF	History of an Antarctic Conservationist	96
Ms E.Elisa Davis - UTAS/IMAS	sedaDNA Bioinformatic Pipeline optimization for low abundance Southern Ocean vertebrate species	98
Miss Faith Gbenro - Uni Canb	Investigating Soil Composition and Formation in Heidemann Valley During the Plio- Pleistocene Epoch: A Geochemical and Mineralogical Perspective	100
Dr Wilma Huneke - ANU	Dynamic response to ice shelf meltwater relevant to explain observed sea ice trends	102
Dr Matthew Jeromson - Uni Canb	What lies beneath: does circumpolar deep water penetrate under the Shackleton Ice Shelf?	104
ANTARCTICA'S FUTURE: RESEARCH DIRECTIONS IN THE GLOBAL CONTEXT		
Mr Luke Brokensha - IMAS/AAPP	Unveiling the energetic and nutritional interactions between ctenophores and copepods in the Southern Ocean	106
Dr Reka-Hajnalka Fulop - ANSTO	In-situ Cosmogenic Carbon-14 Analysis at ANSTO: Advancing Antarctic Science	108
Dr Patricia Miloslavich - AAD	The Australian East Antarctic Monitoring Program	110

SESSION 2

All posters in session 2 will be viewable on Thursday and Friday. Posters will be presented at the following times:

GROUP A

POSTER PROGRAM		THURSDAY 1245 - 1345 FRIDAY 0840 - 0950
Name	Poster Title	#
EXTREMES, REGIME SHIFTS AND TIPPING POINTS IN THE ANTARCTIC SYSTEM		
Mrs Hasna Kunjumon - IMAS/UTAS	Is the Antarctic Sea ice regime shift human-induced?	111
Mr Jiliang Chen - Macquarie	Can Voluntary Conservation Actions Complement the Consensus Building for MPAs at CCAMLR?	113
Ms Johanne Jahnsen Hus - UTAS	Ocean turbulent mixing beneath Antarctic sea ice	115
Lena Nicola – Potsdam Institute For Climate Impact Research	Constraining the onset of future irreversible retreat of Thwaites Glacier, Antarctica through idealized ice-sheet simulations	117
ANTARCTICA'S PAST		
Prof Zanna Chase – UTAS	The role of Antarctic sea ice in the Earth System: Perspectives informed by 130,000 years of sea ice records	119
Mr Ryan North - UOW	Long-term stability of ice sheet thickness around central Antarctic Peninsula nunataks	121
Ms Alexandra Parrott - IMAS	Paleo-productivity changes across glacial-interglacial cycles, Prydz Bay, East Antarctica	123
Mr Corey Port - SAEF, Monash	Constraining the behaviour of the Denman-Scott Glacier system, East Antarctica, over the Holocene, using cosmogenic ¹⁰ Be and ¹⁴ C	125
Dr Christopher Plummer – AAD	Development of Continuous Flow Analysis capability for analysis of Australia's Million Year Ice Core (MYIC) project	127
Mr Vishwadeep Rout – IMAS	Probing ancient Antarctic krill populations	129
Dr Tobias Staal – ACEAS, UTAS	Exploring Atlas Antarktiki: A Distinctive Repository of Historical Antarctic and Southern Ocean Data	131
Dr Melinda Waterman – UOW	Old-growth moss forests as proxies for past Antarctic microclimates	133
Mr Matthew Armstrong – UON	Applying ice core information in water resource management: Insights from Antarctica's past	135
OTHER ANTARCTIC/SUB-ANTARCTIC/SOUTHERN OCEAN TOPICS		
Mr Zhaoyang Kong - Monash	Trends in Precipitation over the Southern Ocean as seen at Macquarie Island	137
Mrs Mingxia Lai - UTAS	Comprehensive Analysis of Paleoclimatic Proxies in Ice Cores via Dual Capillary Ion Chromatography-Mass Spectrometry: Targeted and Untargeted Approaches	139
Miss Man Liang – ANU	Reconstruction of mid-Miocene Southern Ocean temperature and nutrient structure using planktic and benthic foraminifera	141
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Mr Yuxuan Lyu - IMAS	Pattern amplification between global water cycle and mixed layer salinity	145
Miss Chantal Mears - UTAS	Spatial and temporal biological variability across small-scale features in the Polar Front	147

Mrs Annika Oetjens - UTAS	The influence of natural iron fertilization on productivity and particle export in the Southern Ocean	149
Andrea Polanowski - AAD	The development of DNA markers to resolve uncertainties of seabird bycatch identification from longline fisheries in Australian waters	151
Miss Nicola Rodewald – JCU	Star Track: dispersal of the benthic seastars <i>Labidiaster annulatus</i> Sladen, 1889 and <i>Labidiaster radiosus</i> Loven in Lütken, 1871 (Asteroidea: Heliasteridae) across the Southern Ocean	153
Ms Caitlin Selfe – SAEF, QUT	Understanding past and modern large-scale climate processes and change in the sub-Antarctic	155
Prof. Steven Siems – Monash	Precipitation in shallow convection over the Southern Ocean	157
Ms Ilaria Stollberg – IMAS	The East Antarctic Atlantis Model (EAAM): an end-to-end model framework for understanding and predicting changes in Antarctic marine ecosystems	159
Dr Michael Sumner - AAD	Modernizing a software toolkit for research data access	161
Mr James Sweetman– ANU	Melting slabs of vertical ice with internal waves and tides in laboratory conditions	163
Dr Felipe Vilela-Silva – UTAS	Spatial variability and vertical structure along an Antarctic Circumpolar Current meander	165
Ms Sophia Volzke – IMAS/UTAS	Demography in a changing climate: Modelling environmental influences on the population dynamics of southern elephant seals at Macquarie Island	167
Miss Kita Williams – QUT	Invasion by a novel invertebrate on an oceanic island: identifying potential prey and suitable habitat in the absence of data	169
Heng Xu- IMAS	Response Timescales of Standing Meanders in the Southern Ocean	171
Dr Haifeng Zhang - BOM	Investigating Air-Sea Heat Flux Variabilities Using 13 Years' Southern Ocean Flux Station (SOFS) Mooring Data	173
Dr Philippe Ziegler - AAD	Toothfish fisheries research in East Antarctica	175
ANTARCTICA IN A CHANGING CLIMATE AND EARTH SYSTEM		
Dr Maren Loesing – UWA	Enhanced Subglacial Topography Modeling of the Denman Glacier Through Stochastic Inversion and Integrated Geophysical Surveys	177
Mr Jared Magyar - UTAS	Monitoring glacier processes using seismic techniques: an example from Sørdsdal Glacier, East Antarctica	179
Dr Rebecca McGirr - ANU	Antarctic mass balance: recent trends and interannual variations	181
Dr Ariaan Purich - Monash	Southern Annular Mode dynamics, projections and impacts in a changing world	183
Mr Ole Rieka - AAPP, IMAS	Interannual Variability of basal melt rates in the eastern Amundsen Sea	185
Dr Tyler Rohr – UTAS	The Emergence of Top-down Controls on Southern Ocean Biomass in the 21st Century	187
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Dr Salvatore Sodano – UTAS	Southern Ocean aerosol and cloud formation	191
Mrs Claudia Stepin - UTAS	Towards Estimating Circumpolar Antarctic Landfast Sea-Ice Thickness Using Laser Altimetry and Radar Backscatter	193
Dr Levan Tielidze – SAEF, Monash	A complete glacier inventory of the sub-Antarctic Heard Island, Australian external territory	195
Miss Mariapina Vomero – UTAS, IMAS, AAPP	Mapping wintertime surface lid collapses of Antarctic lakes using Sentinel-1 and optical imagery	197
Dr Duanne White – Uni Canb	Inferring marginal bed topography from ice sheet surface gradients	199
ANTARCTICA'S FUTURE: RESEARCH DIRECTIONS IN THE GLOBAL CONTEXT		
Dr Poul Christoffersen - IMAS	Sea level rise and the delicate question of glacial intervention	201

Dr Sally Lau - JCU	Genetic hotspots for conserving Southern Ocean benthic biodiversity	203
Dr Felicity McCormack – Monash	How to Choose an Earth Systems Model Component: a Case Study Selecting an Ice Sheet Model for the ACCESS Framework	205
Mr Hangyu Meng – ANU	The Future of Circumpolar Deep Water	207
Dr Madura Thivanka Pathirana – Edith Cowan University Sri Lanka	Antarctica’s future: Research directions in the South Asians context	209
Mr Liam Turner – Monash, SAEF	Renewable Hydrogen Supply for Australian Antarctic Operations: Comparative Analysis of Shipping vs. On-Site Production Costs	211
THE HUMAN DIMENSION OF ANTARCTICA		
Ms Larissa Lubiana Botelho – QUT	Navigating Consensus: Insights from Opinion Dynamics and Synchronization in the Antarctic Treaty Consultative Meetings	213
Dr Bianca Sfiligoj – AAD	Assessing the ecological risk of complex contaminant mixtures to Antarctic soil communities using Direct Toxicity Assessments.	215
Dr Rupert Summerson – Independent Scholar	Would recognition of the intrinsic value of newly discovered colonies of icefish help provide protection? The case of the breeding colony in the Weddell Sea.	217
Clément Astruc Delor IMAS/ Institut Jean Nicod / French Ministry For Ecological Transition	Applying a linguistic algebra approach on administrative reports to investigate the conceptual engineering at stake when managing the Southern Ocean ecosystems	219

GROUP B

POSTER PROGRAM		THURSDAY 1350 - 1450
		FRIDAY 0840 - 0950
Name	Poster Title	#
EXTREMES, REGIME SHIFTS AND TIPPING POINTS IN THE ANTARCTIC SYSTEM		
Dr Matthew Adams - QUT	Ecological tipping points in Antarctica: how do mathematical models fit in?	112
Dr Will Hobbs - UTAS/IMAS	A regime shift in Antarctic sea ice	114
Mr Yu Wang - AAPP/IMAS	Subglacial Hydrological Discharge Accelerates Ice Loss and Amplifies Irreversibility in the Wilkes Subglacial Basin, East Antarctica	116
Ms Helen Shea - Monash	Reversed ocean-sea ice feedback in the Ross Sea reinforcing low sea ice coverage	118
ANTARCTICA'S PAST		
Dr Katharina Hochmuth - UTAS	Peeking into East Antarctica's past - Using newly acquired reflection seismic data from RV Polarstern voyage PS-141 (EASI-3-East Antarctic Ice Sheet Instability and its interaction with changes in the Southern Ocean)	120
Max Nilssen - AAPP	Evaluating the Twentieth Century Reanalysis Version 3 with synoptic typing and East Antarctic ice core accumulation	122
Mrs Jacinda O'Connor - SAEF, Monash	Holocene Antarctic ice mass change constrained by near- and far-field relative sea level reconstructions.	124
Cari Rand - SAEF, Monash	Ice-volume change in the Lambert-Amery system from the Last Glacial Maximum to the present	126
Ms Selma Richter - Uni Canb	Detecting past marine ice sheet collapse from Antarctic shear moraines using beryllium isotopes	128
Ms Prashasti Singh - IMAS, UTAS	A glimpse into past Antarctic sea-ice conditions with ancient diatom DNA	130
Mr James Trihey - UTAS	Past dynamics of the Cook Glacier	132
Dr Tom Williams - ACEAS	Tracing the origin of icebergs during the mid Pliocene Warm Period: Evidence for ice mass loss from the Aurora Subglacial Basin under 21st century climate conditions	134
OTHER ANTARCTIC/SUB-ANTARCTIC/SOUTHERN OCEAN TOPICS		
Mr Calum Knight - UTAS	Surface radiation biases in CERES over the Southern Ocean	136
Mr Abhishek Kumar - Monash	Impact of Atmospheric Rivers (ARs) over the Southern Ocean as observed at Macquarie Island	138
Dr Zhi Li - UNSW, CMSI & ACEAS	Oceanic teleconnections from the tropics to the Southern Ocean	140
Dr Lauren Linnenlucke - ANSATO	Identifying anthropogenic radionuclide tracer levels in lake sediments across the Windmill Islands, Antarctica.	142
Miss Chelsea Long - UTAS	Tracking the research impact of Australian East Antarctic ice-core science	144
Dr Liza McDonough - ANSTO	Understanding DOM sources and molecular-level transformations in Antarctic lakes using 21T FT-ICR MS	146
Dr Sonya Fiddes - AAPP	Improving Southern Ocean aerosol concentrations in ACCESS-AM2 and its impacts on the shortwave radiative bias	148
Jia Wei Tan - UTAS	Engineering and exploration of a novel live sampling collection method	150

Dr Gabriel Pontes - UNSW	Effect of ITCZ position on Southern Hemisphere westerlies	152
Dr Estrella Sanz Rodriguez – UTAS	Cutting-edge biosecurity Ion Analysis Laboratory at the University of Tasmania: advancing multidisciplinary environmental research	154
Mr Aditya Sharma – IMAS/AAPP	Variability in krill transport pathways	156
Mr Milan Sojitra – UTAS	Traversing the land-sea interface: A climate change risk assessment of terrestrially breeding marine predators	158
Mr Elliot Styles – IMAS	Bait Colour Preference of Seabirds to Better Understand Vulnerability to Anthropogenic Pressures	160
A/Prof Kerrie Swadling – UTAS	Diversity, linkages and estimates of primary and secondary production in east Antarctic sea ice	162
Miss Pimnara Riengchan - IMAS	Closer to danger: Southern Ocean pteropods build their shells deeper in the water column during winter-spring	164
Dr Yann-Treden Tranchant – AAPP	Revealing Drifters Dynamics Using SWOT SSH Slopes in a Meander of the Antarctic Circumpolar Current South of Tasmania.	166
Dr Joey Voermans – Uni Melb	ICESat-2 derived estimates of the wave attenuation rate across the Antarctic marginal ice zone	168
Mr Wen Wen – SAEF, QUT	Developing a continent-wide conservation plan for Antarctica: A focus on comprehensiveness and representativeness	170
Mr James Wyatt – AAPP	Southern Ocean watermass changes within a gravest empirical mode framework	172
Miss Claire Yung - ANU	Incorporating the effect of stratified suppression of turbulence in an ice shelf basal melt parameterisation	174
Dr Chen Zhao - UTAS	Evaluating the impacts of various heat sources on subglacial hydrology using ice sheet models	176
ANTARCTICA IN A CHANGING CLIMATE AND EARTH SYSTEM		
Mr Xinlong Liu - UTAS	Intercomparisons and Evaluations of Current Satellite Altimetry-Derived Freeboards for the Antarctic Sea-Ice	178
Prof. Andrew Mackintosh - Monash	Securing Antarctica's Environmental Future: Climate Processes and Change	180
Dr Marc Mallet - UTAS	Biological enhancement of cloud droplet concentrations observed off East Antarctica	182
Dr Damian Murphy - AAD	Small-scale Waves with Large-scale Implications	184
Dr Phillip Reid - BoM	Antarctic coastal exposure since 1979 – An update	186
Dr Stephen Rintoul – CSIRO	Circulation and ocean-ice interaction beneath the Shackleton Ice Shelf revealed by an intrepid profiling float	188
Prof. Joellen Russell – University Of Arizona	Southern Ocean winds and the uptake of carbon around Australia: findings from the Biogeochemical Southern Ocean State Estimate	190
Mr Japjeet Singh – ANU	Coupled ice sheet-glacial isostatic adjustment models in Firedrake	192
Mr Anton Stekete – ACCESS-NRI	Advancements in sea ice modelling in ACCESS-OM3	194
Dr Robert Strzepak - UTAS	Influence of marine plankton on cloud-seeding gases in the Southern Ocean: Insights from mesocosm experiments	196
Miss Katherine Turner – Monash	Modelled centennial ocean warming in the Amundsen Sea driven by thermodynamics, not winds	198
Dr Ian Watterson – CSIRO	Atmospheric moisture anomalies over the Antarctic associated with ENSO and SAM, and their future changes	200
Dr Pat Wongpan – AAPP	Toward a circumpolar Antarctic grounded iceberg distribution dataset for landfast sea ice simulation using Sentinel-1 SAR	202
ANTARCTICA'S FUTURE: RESEARCH DIRECTIONS IN THE GLOBAL CONTEXT		
Prof Philip Boyd - IMAS	Controls on Southern Ocean Deep Chlorophyll Maxima: viewpoints from multiple observational platforms	204
Ms Caitlin Harvey - UTAS	Climate impacts on Australia's Antarctic and subantarctic heritage and future management options	206
Dr Maria Constanza Manassero - UTAS, ACEAS	Unravelling the Dynamics of Denman Glacier, East Antarctica: Insights from MT and Integrated Geophysical Investigations	208

Miss Indigo McKinnon – Monash	Tracing internal ice layers, Law Dome, East Antarctica - towards a useful isochrone dataset	210
Dr Matthias Scheiter – UTAS	Probabilistic inference of subglacial properties with an ice flow emulator applied to East Antarctica	212
Miss Bowen Zhang – IMAS	Tracing Patagonian toothfish journeys: Insights into migration using X-ray fluorescence microscopy	214
THE HUMAN DIMENSION OF ANTARCTICA		
Miss Anaïs Rémont – SAEF	Capacity-building in the Antarctic Treaty System	216
Mr Joe Smith – Oxford Brookes University	Using urban design principles to improve the sustainability of polar research stations	218
Ms Shradha Agarwal - UTAS	Longitudinal study of pro-environmental behavioural changes in Antarctic tourists through a Cultural lens	220

THANK YOU TO OUR PARTNERS AND SUPPORTERS

