



POLAR OCEAN FACING CHANGES



51st International Liege Colloquium on Ocean Dynamics

Anthropogenic impact
and pollutants

Observing changes

Assessing impacts



Cryosphere-oceans
interaction

Paleo-oceanographic
changes

Future changes

📅 6–9 May, 2019

🏠 <http://labos.ulg.ac.be/gher/home/colloquium/>

📍 University of Liège - Place du 20-Août, 7 - 4000 Liège - Belgium

Monday, May 6th, 2019			
9:00-9:50	Registration		
9:50-10:15	Welcome Note		
Session 1 - Enlarge our temporal perspective: paleo-oceanographic changes & Assessing Impacts			
Chair: François Fripiat			
10:15-10:40	Gilson G., Goosse H., Evans M.N., De Vernal A., Klein F. And Saenger C.	Data assimilation of sea surface temperature reconstructions from marine sediments in the North Atlantic over the past two millennia	Université catholique de Louvain
10:40-11:10	Coffe Break/posters (Salle des Professeurs)		
11:10-11:35	Demant F., Roukaerts A., Vancoppenolle M., Tison J.-L., Delille B., Dehaers F., Fripiat F.	Estimation of Antarctic sea ice primary production inferred from biomass accumulation	Unité d'Océanographie Chimique - Université de Liège – Belgium
11:35-12:00	Le Bourg B., Blanchard A., Danis B., Jossart Q., Lepoint G., Moreau C., Michel L.	Environmental drivers of sea stars feeding ecology in the Southern Ocean	Freshwater and Oceanic Sciences Unit of reSearch (FOCUS), University of Liège, Belgium
12:00-14:00	Break		
Session 2 - Measuring anthropogenic impact and pollutants			
Chair: Jean-Louis Tison			
14:00-14:25	Schön I., Christiansen H., Danis B., De Ridder C., Dubois P., Dettai A., Dulière V., Frédéric B., Heindler M.F., Jossart Q., Kochzius M., Leliaert F., Lepoint G., Michel L., Pasotti F., Robert H., Van De Putte A., Vanreusel A. And Volckaert F.	Refugia and ecosystem tolerance in the Southern Ocean – the RECTO project	Royal Belgian Institute of Natural Sciences, OD Nature
14:25-14:50	Sarah Wauthy S., Delille B., Ackley S., Maksym T., Stammerjohn S. & Tison J.-L.	Reconstructing NCP from O ₂ and Ar concentrations in winter sea ice of the Ross Sea (Antarctica)	Université Libre de Bruxelles
14:50-15:15	Wittek B., Carnat G., Tison J.-L. And Gypens N.	What is the impact of brines conditions on the biogenic DMSP and DMSO production? A cell culture approach	ULB, Belgium
15:15-15:40	Pinzone M., Tessier E., Bérail S., Amouroux D. And Das K.	Hg dynamics in Arctic top predators: insights from a captive experiment on hooded seals <i>Cystophora cristata</i> .	University of Liège
15:40-16:10	Coffe Break (Salle des Professeurs)		
16:10-19:00	Poster session (Salle des Professeurs) & Ice breaker		

Tuesday, May 7th, 2019

Session 3 : Observing changes

Chair: Peter Sutherland

9:00-9:50	Keynote: Orr J. And Kwiatkowski L.	Polar ocean amplification and shift of seasonal extremes in ocean acidity during the 21st century	LSCE/IPSL, Laboratoire des Sciences du Climat de de l'Environnement, CEA-CNRS-UVSQ
9:50-10:15	Sangmanee C. And Clarke A.	Physics of Interannual Variability and Trend of the Bering Strait Throughflow Gleaned from Satellite Altimeters	Department of Marine and Coastal Resources, Thailand
10:15-10:40	Auger M., Prandi P., Sallee J.-B., Guillot A., Dibarboure G. And Lifermann A.	Multi-altimeter combination for the retrieval of sea surface height in the ice-covered Southern Ocean	CNES
10:40-11:10	Coffe Break/posters (Salle des Professeurs)		
11:10-11:35	Bij De Vaate I., Slobbe C., Verlaan M.	Deriving water levels in the Arctic region from SAR altimetry	Delft University of Technology, The Netherlands
11:35-12:00	Ardhuin F., Collard F., Guitton G., Hauser D., Stopa J., Chapron B., Boutin G., Sutherland P.	Wind-waves and currents across the ice edge: exploring mechanical effects and feedbacks with models and remote sensing	LOPS, France
12:00-12:25	Prandi P., Guillot A., Aublanc J., Daguze J.-A., Dekeyne G., Dibarboure G., Fleury S., Garnier F., Poisson J.-C., Picot N. And Piras F.	Satellite radar altimetry for polar regions: ocean and cryosphere observations	Collecte Localisation Satellites
12:25-14:00	Break		
Chair: Camille Lique			
14:00-14:25	Sutherland P., Dumont D. And Barast L.	Remote sensing and in situ observations of wave attenuation dynamics in diverse marginal ice zones.	LOPS – IFREMER
14:25-14:50	Tarakanov R. And Fofanov D.	On the meridional shift of the zone of maximum winds in the Southern Ocean	Shirshov Institute of Oceanology of RAS
14:50-15:15	Garnier F., Fleury S., Laforge A., Meyssignac B. And Guerreiro K.	Sea ice thickness records from altimetry over Antarctica	LEGOS, France
15:15-15:40	Doddridge E. And Marshall J.	Strong Southern Ocean summer winds induce ice loss the following winter through anomalous heat storage in the seasonal ice zone	Massachusetts Institute of Technology
15:40-16:10	Coffe Break/posters (Salle des Professeurs)		
Session 4 : Specific cryosphere-oceans interaction & Teleconnection and global perspective			
16:10-16:35	Huot P.-V., Fichet T., Jourdain N., Mathiot P., Rousset C., Kittel C. And Fettweis X.	Impacts of tides on ocean-ice interactions in East Antarctica	UCLouvain
16:35-17:00	Fettweis X. And Sievers I.	Impact of the recent oceanic anomalies around the Greenland ice sheet on its surface mass balance.	Université de Liège

Wenesday, May 8th, 2019

Session 3 : Observing changes

Chair: Annick Wilmotte

9:00-9:50	Keynote: Tedesco L., Vichi, M., Scoccimarro, E., Leu, E., Mundy, C.J., Notz, D., Søreide, J., Lannuzel D. And Post., E.	Emerging ecological patterns of Arctic sea-ice decline	Finnish Environment Institute (SYKE)
9:50-10:15	Angel-Benavides I., Klein B., Latarius K., Poffa N. And Purokoski T.	Argo floats in the European Arctic Ocean and Nordic Seas: avoiding sea ice and detecting climate change	Federal Maritime and Hydrographic Agency (BSH)
10:15-10:40	Van De Putte A., Gan Y.M. And Sweetlove M.	The Antarctic Biodiversity Portal, an online ecosystem for linking, Integrating and Disseminating Antarctic Biodiversity Information	Royal Belgian Institute of Natural Sciences
10:40-11:10	Coffe Break/posters (Salle des Professeurs)		
11:10-11:35	Sweetlove M., Gan Y.M., Murray A., Van De Putte A.	The microbial Antarctic Resource System: integrating discoverability and preservation of environmental annotated microbial -omics data.	Royal Belgian Institute of Natural Sciences
11:35-12:00	Bricher P., Van De Putte A., Newman L., Swart S., Constable A., Williams M., Hofmann E., Diggs S. And Beja J.	Observing and understanding change in the Southern Ocean – building systems for future science	Southern Ocean Observing System
12:00-14:00	Break		

Session 5 : Predicting changes

Chair: Edward Doddridge

14:00-14:25	Platov G. And Golubeva E.	Assessment of the future trends in atmospheric forcing and associated tendencies in Arctic ice and ocean	ICMMG
14:25-14:50	Pelletier C., Goosse H. And Klein F.	Investigating the unprecedented 2016 sea ice extent minimum with an eddy-permitting Southern Ocean configuration	Université catholique de Louvain
14:50-15:15	Lique C., Regan H.	Dynamics of the Beaufort Gyre from satellite observations and a high resolution model.	LOPS – Ifremer
15:15-15:40			
15:40-16:10	Coffe Break/posters (Salle des Professeurs)		
16:10-17:30	Workshops		
	Van De Putte A., André F., Wilmotte A.	How the science-based stewardship of the Southern Ocean organised and could it be applied to the Arctic Ocean ?	Room : Salle Académique
19:30-22:00	Colloquium Dinner: Place: Hotel "Les Comtes de Méan" ***** - 19:30: Reception - 20:00 Dinner		

Thursday, May 9th, 2019

Session 5 : Predicting changes

Chair: Hugues Goosse

9:00-9:50	Keynote: Fripiat F., Martinez-Garcia A., Marconi D, Fawcett, S.F., Sigman D.M., And Haug. G.H	Meridional Overturning Circulation: Insights from nitrate isotopes and perspectives for past oceanic circulation	Max Planck Institute for Chemistry
9:50-10:15	Meneghello G., Marshall J., Doddridge E., Campin J.-M., Scott J.	Baroclinic instability in an ice covered ocean	MIT
10:15-10:40	Rippeth T., Lincoln B., Vlasenko V., Green M., Stashchuk N., Scannell B., Lenn Y.-D. And Bacon S.	Mixing at intermediate depths in a changing Arctic Ocean	Bangor University
10:40-11:10	Coffe Break/posters (Salle des Professeurs)		
11:10-11:35	Hahn-Woernle L., Powell B., Lundesgaard Ø. And Van Wessem M.	Sensitivity of the Upper Ocean Heat Content in a WAP Fjord	SOEST, University of Hawaii at Manoa
11:35-12:00	Lenn Y., Barton B., Lique C., Holliday P.	Tracing upstream pathways of anomalies driving Eastern Arctic and Barents Sea atlantification	Bangor University, Wales
12:00-12:25	Ponsoni L., Massonnet F., Docquier D. And Fichet T.	Statistical predictability of Arctic sea ice volume anomalies: identifying predictors and optimal sampling locations	Université catholique de Louvain, Georges Lemaître Centre for Earth and Climate Research
12:25-14:00	Break		
Session 5 : Predicting changes			
Chair: Letizia Tedesco			
14:00-14:25	Marchi S., Fichet T., Goosse H.	Influence of the initial ocean state on the predictability of the Antarctic sea ice at the seasonal timescale: a study with NEMO3.6-LIM3	Université catholique de Louvain, Belgium
14:25-14:50	Person R., Aumont O., Vancoppenolle M., Madec G., Bopp L. And Merino N.	Sensitivity of Ocean Biogeochemistry to the Iron Supply from The Antarctic Ice Sheet explored with a Biogeochemical Model	LOCEAN/CNRS
14:50-15:15	Schultz C. , , Doney S., And Zhang W.	Biogeochemical modeling of the West Antarctic Peninsula	Woods Hole Oceanographic Institution
15:15-15:40	Terhaar J., Lauerwald R., Regnier P., Orr J. And Bopp L.	Impact of riverine carbon and nutrient fluxes on the Arctic Ocean biogeochemistry	Laboratoire des Sciences du Climat et de l'Environnement

Posters

Session 1 - Enlarge our temporal perspective: paleo-oceanographic changes & Assessing Impacts

1	Salabao L., Frédéricich B., Lepoint G., Verheye M.	Unravelling the evolutionary processes that shaped the diversity of the a	Université catholique de Louvain, Belgium
2	Bach M., Stefels J., Van Leeuwe M., Elzenga M.	Predicting DMS(P) production in a high carbon dioxide world. Does algal carbon-utilization provide an answer?	University of Groningen, GELIFES — Groningen Institute for Evolutionary Life Sciences
3	Dulière V., Christiansen H., Heindler F.M., Papetti C., Pasotti F., Schiavon L. And Schön I.	Past and future dispersal of Antarctica species: a Lagrangian modeling tool	Royal Belgian Institute of Natural Sciences (RBINS), Belgium
4	Lebedev K.	The Antarctic Circumpolar Current modeling study based on Argo data	Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russia
5	Lopez Z., Frugone M., Vargas-Chacoff L., Guillaumot C.3, Gerard K., Poulin E. And Dulière V.	Assessment of the capacity of Halicarcinus planatus larva to reach the South Shetland Islands through passive dispersal.	University of Chile
6	Van Leeuwe M., Fenton M. And Annett A., Davis E. And Stefels J.	Community structure and photoacclimation in Antarctic ice-algal assemblages	University of Groningen

Session 2 - Measuring anthropogenic impact and pollutants

7	Bratkič A., Zhou C., Tison J.-L., Fripiat F., Gao Y., Delille B.	Advancing methodology for sub-zero temperature application of DGT technique on sea ice samples for two-dimensional imaging of biogenic metals	University of Liège
8	Van Der Linden F., Carnat G., Sapart C., De Jong J., Kotovitch M., Stammerjohn S.3, Ackley S., Tison J.-L. And Delille B.	Ocean-sea ice-atmosphere gas exchanges in the early stages of ice formation: insight from the PIPERS cruise	Université de Liège

Session 3 : Observing changes

9	Ponsoni L., Oliveira F., Fichet T.	Is the Antarctic sea ice variability linked to the Antarctic Circumpolar Current (ACC) variability?	Université catholique de Louvain, Georges Lemaître Centre for Earth and Climate Research
10	Van De Putte A., All Editors, Wadley V., Stoddart M., Gan Y.M. And Sweetlove M.	The Census of Antarctic Marine Life, and its legacy 10 years on	RBINS

Session 4 : Specific cryosphere-oceans interaction & Teleconnection and global perspective			
11	Brenner S., Rainville L., Thomson J., Lee C.	Evolution of an Arctic melt-water front	University of Washington Applied Physics Lab
12	Mohammadi Aragh M., Burchard H., Lorenz M.	Plume modeling beneath the glacial tongue of the 79° North Glacier	Leibniz Institute for Baltic Sea Research Warnemuende
13	Delhaye S., Fichefet T., Massonnet F., Docquier D.	Impact of an abrupt Arctic sea ice reduction on high and mid-latitude climate	UCLouvain
Session 5 : Predicting changes			
14	Alekseenko E., Orr J.C. And Ethé C.	Sensitivity of simulated high-latitude ocean biogeochemistry to model resolution and forcing	LSCE
15	Golubeva E., Platov G., Iakshina D. And Kraineva M.	Numerical study of the Arctic Rivers water pathways and water mass transformation in the Arctic Ocean	ICMMG
16	Sievers I. And Fettweis X.	Coupling of ocean model NEMO to regional climate model MAR over the arctic Ocean	University of Liège - Laboratoire de Climatologie
17	Sterlin J., Fichefet T. And Massonnet F.	The effects of atmospheric uncertainties on two melt pond schemes in global climate models	UCLouvain
18	Van Achter G., Fichefet T., Pattyn F.	Study of landfast ice over the Totten Ice-Shelf with a NEMO-LIM local configuration	UCL – ELIC
19	BEPSII	Future changes in Arctic sea-ice biogeochemistry and associated ecosystems	
General			
20	Savaglia V., Brode-Roger D., Christiansen H., De Maeyer L.3, Durieu B., Gan Y.M., Gossart A., Heindler F.M., Hirst C., Jacques C., Jossart Q., Maes S. And Pinseel E.	What is APECS Belgium?	Université de Liège, Belgium