

MEMBER COUNTRY: BELGIUM
National Report to SCAR for year: 2017

Activity	Contact Name	Address	Telephone	Fax	Email	Website
National SCAR Committee						
Belgian National Committee on Antarctic Research (BNCAR)	Dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels				www.bncar.be
SCAR Delegates						
1) Delegate	Prof. Frank Pattyn	Université Libre de Bruxelles - Laboratoire de Glaciologie; Avenue Roosevelt 50 - CP 160/03 B-1050 Brussels	+32 2 650.28.46		fpattyn@ulb.ac.be	
2) Alternate Delegate	Dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels	/		avandeputte@naturalsciences.be	
Standing Scientific Groups						
Life Sciences						
1)	Annick Wilmotte?	Université de Liège, Dpt des Sciences de la vie, Physiologie et génétique bactériennes, Allée de la Chimie, 3 - Bât. B6, B-4000, Liège IRScNB Rue Vautier, 29 B-1000 Brussels				
2)	Claude Debroyer?					
3)						
Geosciences						
1)	Prof. Frank Pattyn	Université Libre de Bruxelles - Laboratoire de Glaciologie; Avenue Roosevelt 50 - CP 160/03 B-1050 Brussels	+32 2 650.28.46		fpattyn@ulb.ac.be	
2)	Prof. Philippe Huybrechts	Vrije Universiteit Brussel, Department of Geography, Pleinlaan, 2 - Building F, B-1050 Brussels	02 629 35 93		phuybrec@vub.ac.be	
3)						
Physical Sciences						
1)	Prof. Hugues Goosse	Université Catholique de Louvain, Centre de Recherche sur la Terre et le climat G. Lemaitre, Earth and Life Institute, Place Louis Pasteur, 3 - boîte L4.03.08, B-1348, Louvain-la-Neuve				
2)	Prof. Jean-Louis Tison	Université Libre de Bruxelles, Laboratoire de Glaciologie, av. F. Roosevelt, 50 - CP 160/03, B-1050, Bruxelles				
3)						

Activity	Contact Name	Address	Telephone	Fax	Email	Website
Scientific Research Program						
1) AAA						
1) AntEco	Dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels				
2)	Prof. Dr. Annick Wilmotte					
3)						
1) AnT-ERA	Dr Claude De Broyer	IRScNB Rue Vautier, 29 B-1000 Brussels				
2)	Prof. Dr. Annick Wilmotte	Université de Liège, Dpt des Sciences de la vie, Physiologie et génétique bactériennes, Allée de la Chimie, 3 - Bât. B6, B-4000, Liège				
1) AntClim21						
1) PAIS						
1) SERCE						

Activity	Contact Name	Address	Telephone	Fax	Email	Website
Standing Committees						
SCADM						
1) 2)	Dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels				
SCAGI						
1)						
Other Groups (optional)						
SOOS	Prof. Dr. Bruno Danis	Université Libre de Bruxelles Laboratoire de Biologie Marine av. F. Roosevelt, 50 - CP 160/15 B- 1050 Bruxelles				
	dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels				
Action and Expert Groups						
EG-ABI (Antarctic Biodiversity Inf	Prof. Dr. Bruno Danis	Université Libre de Bruxelles Laboratoire de Biologie Marine av. F. Roosevelt, 50 - CP 160/15 B- 1050 Bruxelles				
	dr. Anton Van de Putte	IRScNB Rue Vautier, 29 B-1000 Brussels				
GRAPE	Dr. Nicolas Bergeot	Royal Observatory of Belgium	0032 2 3730619		nicolas.bergeot@oma.be	http://www.grape.scar.org/index.html

A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS:

Subjects	Investigations	Locality	Duration	Principal investi	E-mail address	Website
Geosciences						
ICECON Constraining ice mass changes in Dronning Maud Land	Determining coastal uplift and ice mass change over the last 20,000 years using geodetic GPS, radar, GPS monitoring, ice coring, and ice sheet modelling	Princess Ragnhild Coast (PEA)	2012-2016	F. Pattyn J.L. Tison C. Bruyninx	fpattyn@ulb.ac.be jtison@ulb.ac.be carine.bruyninx@oma.be	Icecon2012.blogspot.com
BE-OI: Beyond EPICA: Oldest Ice (EU H2020 - lead AWI Germany)	Detecting suitable areas for deep ice core drilling in Antarctica to retrieve a 1.5 Ma long ice core record spanning the Mid-Pleistocene Transition	Dome Fuji - Dome C area	2014-2019	F. Pattyn (Belgian partner)		
Life Sciences						
CCAMBIO Climate Change and Antarctic Microbial Biodiversity	study the diversity, biogeographic zoning, evolutionary history, and genomic make-up of lacustrine microbial mat communities in the Antarctic Realm in order to assess their resilience and local and regional responses to global change Proteomic studies of Antarctic microorganisms.	Antarctic continent and surrounding (sub-) Antarctic islands	2012-2015	A. Wilmotte W. Vyverman E. Verleyen A. Willems B. Van de Vijver A. Van de Putte	awilmotte@ulg.ac.be wim.vyverman@ugent.be elie.verleyen@ugent.be anne.willems@ugent.be vandevijver@br.fgov.be antonarctica@gmail.com	www.ccambio.ulg.ac.be
COLD LIFE Cold adaptations in Antarctic microorganisms	Biophysical studies of the activity, stability and conformation of enzymes from psychrophilic microorganisms	Terre Adélie Antarctic continent	unlimited	G. Feller	gfeller@ulg.ac.be	http://www2.ulg.ac.be/bi ochlab/
COALA	Assessing psychological adaptation through linguistic and voice analysis of diary recordings	Concordia Station	2012-2015	N.Pattyn Hungary: L.Balazs Italy: A.Esposito Russia: V.Gushin Canada: P.Suedfeld		
HASTE	The effect of hypoxia on sleep during an Antarctic overwintering	Concordia Station	2012-2015	N.Pattyn Slovenia: I.Mekjavic Sweden: O.Eiken		

vERSO	Ecosystem Responses to global change: a multiscale approach in the Southern Ocean	study of the benthic Antarctic exosystems using an integrated multiscale approach in order to assess the impact of the main stressors driven by global change	Western Antarctic Peninsula and Terre Adélie	2013-2018	B. Danis A. Vanreusel F. Volckaert F. Dehairs G. Lepoint A. Van de Putte	http://www.belspo.be/belspo/fe dra/proj.asp?l=fr&COD=BR/13 2/A1/VERSO
OCeANIC	nitrous Oxide and nitrogen Cycling in ANtarctic sea Ice Covered zone	study of the nitrogen cycle using stable isotopic composition tools in order to assess the role of sea ice covered area in air-sea N2O exchanges	Prydz Bay area	2016-2020	B. Delille J.L. Tison F. Dehairs I. Schön B. Danis C. De Ridder Ph. Dubois A. Vanreusel F. Volckaert M. Kochzius G. Lepoint A. Van de Putte	https://www.belspo.be/belspo/fe dra/proj.asp?l=fr&COD=BL/12 /C63
RECTO: Refugia and Ecosystem Tolerance in the Southern Ocean			Southern Ocean	2016-2020		www.rectoversoprojects.be
AntaBIS		Development Virtual Lab for analysis of Antarctic and Southern Ocean biodiversity data	Southern Ocean & Antarctica	2014-2019	A. Van de Putte	
Microbian		<u>Microbiome</u> diversity and function in the Sør Rondane Mountains, East Antarctica	Sør Rondane Mountains, East Antarctica		Wim Vyverman Annick Wilmotte Anne Willems Anton Van de Putte and Quinten Vanhellemont Bart Van de Vijver (AUS) Aleks Terauds (CZE) Josef Elster	
MethanoBase		relations between microbial diversity and methane emissions in Arctic, Subarctic and Subantarctic ecosystems, under natural (baseline) conditions and in response to simulated temperature increments	Arctic, Subarctic and Subantarctic		(FRA) Dr Maialen Barret (URG) Dr Claudia Etchebehere (CHI) Dr Léa Cabrol Dr. Anton Van de Putte (NOR) Prof Mette Marianne Svenning (CHI) Dr Frédéric Thalasso (RUS) Dr. Nikita Tananaev (USA) Dr Gilberto Fochesatto	

The role of photoheterotrophic and chemoautotrophic prokaryotes in the microbial food web in terrestrial Antarctica: a cultivation approach combined with functional analysis	Clone libraries and Illumina sequencing of functional genes amplified from community DNA of terrestrial samples. Cultivation and characterization of oligotrophic bacteria from the same samples.	Utsteinen, Sør Rondane Mountains	2012-2015 (2017)	A. Willems B. Delille	anne.willems@ugent.be bruno.delille@ulg.ac.be	
BEPSII research community (CliC, SOLAS, SCAR)	Biogeochemical exchange processes at the Sea Ice interface	Arctic and Antarctic sea ice	2012 - ...	J.L. Tison F. Deman B. Delille	jtison@ulb.ac.be fdeman@vub.be bruno.delille@ulg.ac.be	https://sites.google.com/site/beansiiwg140/home
ECV-Ice working group (SCOR)	Measuring Essential Climate Variables in Sea ice	Arctic and Antarctic sea ice	2017-2021	J.L. Tison F. Deman	jtison@ulb.ac.be fdeman@vub.be	http://www.scor-int.org/SCOR_WGs_WG152.htm
TGP: Transgenerational Plasticity (TGP) in polar invertebrates as a mechanism of adapting to a warmer more acidic coastal Antarctic	Antarctic coastal seas will warm and acidify over the coming decades, and understanding the capacity of polar marine species to adapt to change is vital to predict the future of Antarctic marine ecosystems. Transgenerational plasticity, TGP (where offspring responses to warming reflect parental experiences and hence ability to persist under climate change) is one mechanism for adaptation, yet there is limited understanding of this key process for polar species. Here, we will quantify TGP in a sea star <i>Odontaster validus</i> , an important predator of the coastal Antarctic, to understand if polar species have the capacity to rapidly adapt in the face of climate change.					
Biogeosciences		Southern Ocean	2016-2017	B. Danis M. Lamare M. Sewell A. Agüera M. Byrne V. Metcalf A. Marsh		NA
Eddy	Linking eddy physics and biogeochemistry in the Antarctic Circumpolar Current south of Tasmania	Sub-Antarctic Front	2016	P. Strutton T. Trull P. Boyd H. Phillips S. Moreau M. Hellwood	pete.strutton@utas.edu.au Tom.Trull@csiro.au philip.boyd@utas.edu.au h.e.phillips@utas.edu.au smoreau@uclouvain.be michael.ellwood@anu.edu.au delphine.lannuzel@utas.edu.au	http://southernoceaneddie.wixsite.com/eddies
AAS 4131	Cryosphere – Ocean biogeochemical interactions in East Antarctica: from iron sources to carbon sinks	Coastal East Antarctica	2015-2018	D. Lannuzel E. Shadwick F. Dehairs A. Roukaerts S. Moreau	shadwick@vims.edu fdehairs@vub.ac.be Arnout.Roukaerts@vub.be smoreau@uclouvain.be	

Physical Sciences

iCLIPS Constraining long-term climate and sea-level projections using the Last Interglacial	Improving projections of climate and sea-level changes over the next century and millennium, and to better understand their causes and mechanisms. Future rates of climate change are constrained based on simulations of the Last Interglacial (LIG, 130-115 kyr BP). Focus on two polar areas.	Global	2010-2015	P. Huybrechts T. Fichetef D. Bertrand P. Herquet C. De Clercq	bertrand@hep.ihe.ac.be Philippe.Herquet@umh.ac.be declercq@hep.ihe.ac.be
AMANDA / IceCube Neutrino Astrophysics	Galactic and extra-galactic neutrino detection using a ice-Cherenkov telescope The goal is to evaluate biases in the Antarctic iceocean system in the current generation of climate models and then use these results to improve their representation of Antarctic sea ice.	Amundsen-Scott Base	1997 - 2015	H. Goosse T.Fichefer	hugues.goosse@uclouvain.be Thierry.fichetef@uclouvain.be
Antarctic sea ice in climate models (F.R.S.-FNRS)	The overarching mission of APPLICATE is to develop enhanced predictive capacity for weather and climate in the Arctic and beyond, and to determine the influence of Arctic climate change on Northern Hemisphere mid-latitudes, for the benefit of policy makers, businesses and society. The aim of PRIMAVERA is to develop a new generation of advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity, for the benefit of governments, business and society in general. The overall objective of Adélie-HRM is to quantify the influence of small-scale processes on the dynamics of the coupled atmosphere-cryosphere-ocean system on daily to seasonal timescales in the Antarctic region. To reach this goal, a high-resolution coupled atmosphere-cryosphere-ocean model is developed and applied to the Adélie Land area, Antarctica.	Southern ocean incl. sea ice covered areas	2014-2019	Thierry Fichetef François Massonnet Olivier Lecomte Leandro Ponsoni Jonathan Raulier	thierry.fichetef@uclouvain.be francois.massonnet@uclouvain.be olivier.lecomte@uclouvain.be leandro.ponsoni@uclouvain.be jonathan.raulier@uclouvain.be www.applycate.eu
APPLICATE - Advanced Predictions in Polar Regions and Beyond : Modelling, Observing System Design and Linkages Associated with Arctic Climate Change (EU H2020 Project)	The overarching mission of APPLICATE is to develop enhanced predictive capacity for weather and climate in the Arctic and beyond, and to determine the influence of Arctic climate change on Northern Hemisphere mid-latitudes, for the benefit of policy makers, businesses and society. The aim of PRIMAVERA is to develop a new generation of advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity, for the benefit of governments, business and society in general. The overall objective of Adélie-HRM is to quantify the influence of small-scale processes on the dynamics of the coupled atmosphere-cryosphere-ocean system on daily to seasonal timescales in the Antarctic region. To reach this goal, a high-resolution coupled atmosphere-cryosphere-ocean model is developed and applied to the Adélie Land area, Antarctica.	Whole Arctic.	2016-2020	Thierry Fichetef François Massonnet Antoine Barthélemy David Docquier Olivier Lecomte Jonathan Raulier	thierry.fichetef@uclouvain.be francois.massonnet@uclouvain.be antoine.barthelemy@uclouvain.be david.docquier@uclouvain.beo livier.lecomte@uclouvain.be jonathan.raulier@uclouvain.be www.primavera-h2020.eu
PRIMAVERA - Process-Based Climate Simulation : Advances in High Resolution Modelling and European Climate Risk Assessment (EU H2020 Project)	The overarching mission of APPLICATE is to develop enhanced predictive capacity for weather and climate in the Arctic and beyond, and to determine the influence of Arctic climate change on Northern Hemisphere mid-latitudes, for the benefit of policy makers, businesses and society. The aim of PRIMAVERA is to develop a new generation of advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity, for the benefit of governments, business and society in general. The overall objective of Adélie-HRM is to quantify the influence of small-scale processes on the dynamics of the coupled atmosphere-cryosphere-ocean system on daily to seasonal timescales in the Antarctic region. To reach this goal, a high-resolution coupled atmosphere-cryosphere-ocean model is developed and applied to the Adélie Land area, Antarctica.	Whole Earth, incl. Arctic and Antarctic.	2015-2019	Thierry Fichetef Xavier Fettweis Pierre-Vincent Huot Christoph Kittel	thierry.fichetef@uclouvain.be xavier.fettweis@uclg.ac.be pierre-vincent.huot@uclouvain.be c.kittel@ulg.ac.be http://apps3.awi.de/YPP/pdf/stre
Adélie-HRM - Influence of Small-Scale Processes on the Dynamics of the Coupled Atmosphere-Cryosphere-Ocean System on Daily to Seasonal Timescales in the Region of Adélie Land, Antarctica (FRS-FNRS PDR)	The overarching mission of APPLICATE is to develop enhanced predictive capacity for weather and climate in the Arctic and beyond, and to determine the influence of Arctic climate change on Northern Hemisphere mid-latitudes, for the benefit of policy makers, businesses and society. The aim of PRIMAVERA is to develop a new generation of advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity, for the benefit of governments, business and society in general. The overall objective of Adélie-HRM is to quantify the influence of small-scale processes on the dynamics of the coupled atmosphere-cryosphere-ocean system on daily to seasonal timescales in the Antarctic region. To reach this goal, a high-resolution coupled atmosphere-cryosphere-ocean model is developed and applied to the Adélie Land area, Antarctica.	Adélie Land, Antarctica	2016-2020	Thierry Fichetef Xavier Fettweis Pierre-Vincent Huot Christoph Kittel	thierry.fichetef@uclouvain.be xavier.fettweis@uclg.ac.be pierre-vincent.huot@uclouvain.be c.kittel@ulg.ac.be http://apps3.awi.de/YPP/pdf/stre

AEROCLOUD	study and improve the understanding and modeling of precipitation, clouds, and their effect on aerosols in East Antarctica. Only models that correctly represent these intertwined processes can give reliable future climate projections.	Dronning Maud Land, East Antarctica	2015-2019	N. van Lipzig H. De Backer H. Van Roozendael N. Souverijns A. Gossart A. Mangold Q. Laffineur F. Hendrick C. Heremans	nicole.vanlipzig@kuleuven.be hugo.debacker@meteo.be michiel.vanroozendael@aeronomie.be niels.souverijns@kuleuven.be alexandra.gossart@kuleuven.be alexander.mangold@meteo.be quentin.laffineur@meteo.be francois.hendrick@aeronomie.be christian.heremans@aeronomie.be	www.aerocloud.be
Atmospheric composition monitoring	measurement of total atmospheric ozone content; spectral UV radiation; vertical profiles of temperature, humidity, wind, pressure	Princess Elisabeth Station, Dronning Maud Land, East Antarctica	2011 - present, ongoing	A. Mangold, H. De Backer, R. Van Malderen A. Mangold, A. Delcloo, N. Mattielli, Herman Van Langenhove, Kristof Demeestere, Philippe Claeys	alexander.mangold@meteo.be ; hugo.debacker@meteo.be; roeland.vanmalderen@meteo.be	www.meteo.be
CHASE	passive and active sampling of atmospheric particles and VOCs for laboratory analysis of organic and inorganic composition	Princess Elisabeth Station, Dronning Maud Land, East Antarctica and coast nearby	2017-2021	A. Mangold, A. Delcloo, N. Mattielli, Herman Van Langenhove, Kristof Demeestere, Philippe Claeys	alexander.mangold at meteo.be; andy.delcloo at meteo.be; nmattiel at ulb.ac.be christophe.walgraeve at ugent.be phclaeys at vub.ac.be	
East Antarctic surface mass balance in the Anthropocene: observations and multiscale modelling (Mass2Ant) Belgian Research Action through Interdisciplinary Networks - BRAIN-be	The goal is to study the mass balance in the vicinity of the Princess Elisabeth Station and in East Antarctica.	East Antarctica	2017-2021	H. Goosse J.L. Tison S. Vannitsem	hugues.goosse@uclouvain.be jtison@ulb.ac.be stephane.vannitsem@meteo.be	
Decadal Predictability and vAriability of polar climate: the Role of AtMosphere- Ocean-cryosphere mUltiscale inteRactions (PARAMOUR). EOS -Excellence of Science. FNRS-FWO.	The goal is to study the predictability of the ice sheet ocean atmosphere system.	Antarctica and Southern Ocean	2018-2022	H. Goosse Th. Fichefet F. Pattyn P. Huybrechts N. van Lipzig X. Fettweis	hugues.goosse@uclouvain.be Thierry.Fichefet@uclouvain.be fpattyn@ulb.ac.be phuybrec@vub.ac.be nicole.vanlipzig@kuleuven.be xavier.fettweis@ulg.ac.be	
MIMO	Monitoring Melt where Ice Meets Ocean - satellite remote sensing (BELSPO - STEREO III)	Dronning Maud Land, East Antarctica	2016-2020	F. Pattyn, D. Derauw, O. Eisen		