

**Bruno Delille**

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41 aged  
 Two children  
 French nationality



### ***Research interests***

- Inorganic carbon dynamics in the polar oceans (open ocean, subantarctic coastal area, sea ice specific processes)
- Climate gases dynamics in sea ice (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, DMS) and in the coastal ocean
- Sea ice biogeochemistry
- Impact of ocean acidification on inorganic and organic carbon production by phytoplankton communities
- Effect of macrophytes on inorganic carbon dynamics

### ***Education***

Jul. '06	Ph. D. in Oceanology from the University of Liège, Belgium.
Jun '95	Graduate degree in Physics & Chemicals Sciences with honours Université de Perpignan, France.

### ***Appointments***

From Oct. '09	Research associate at the FRS-FNRS
Sep. '08 - May. '09	Visiting scientist at EPOC (Environnements et Paléoenvironnements Océaniques) at the Université de Bordeaux (France). Collaboration with Dr Gwenaël Abril
Jan.'06 – Sep. '09	Research assistant in the project "BELCANTO-III: Integrated Study of Southern Ocean Biogeochemistry and Climate Interactions in the Anthropocene" supported by the Belgian Scientific Research Programme on the Antarctic Executive officer of SOLAS-Belgium
Jan. '00 – Dec. '05	Research assistant in the project "BELCANTO-II: Assessing the sensitivity of the Southern Ocean's Biological Pump to Climate Change" supported by the Belgian Scientific Research Programme on the Antarctic
Mar. '04 - Jul. '04	Administrative coordination of the European project EUROTROPH (in addition to the research activities in the framework of BELCANTO-II)

Oct. '97 - Dec. '99	Assistant in the project “ BELCANTO-I :An Integrated Approach to Assess Carbon Dynamics in the Southern Ocean” supported by the Belgian Scientific Research Programme on the Antarctic
Nov.'95 - Jun. '97	Over-winterer in Kerguelen Island in the frame of MICROBIOKER Research Project (Subantarctic Marine Microbiology) supported by Institut Français pour la Recherche et Technologie Polaire/ Elf Aquitaine
Jun. '95 – Sep. '95	Laboratory technician at the Laboratoire Départemental des Pyrénées Orientales - France

### *Lectures*

- Marine cryosphere, Master in oceanography of the Université de Liège, Research focus, 2nd year, lecturer
- Biogeochemical cycles 1, Master in oceanography of the Université de Liège, Research focus, 2nd year, co-lecturer
- Biogeochemical cycles 2, Master in oceanography of the Université de Liège, Research focus, 2nd year, co-lecturer

### *Main projects*

- Assessing the sensitivity of the Southern Ocean's Biological Pump to Climate Change” supported by the Belgian Scientific Research Programme on the Antarctic (BELCANTO II, EV/12/7E, 2001-2004) funded by the Belgian Science Policy
- Integrated Study of Southern Ocean Biogeochemistry and Climate Interactions in the Anthropocene (BELCANTO III, SD/CA/03A, 2006-2009) funded by the Belgian Science Policy
- Sea Ice Biogeochemistry in Polar Oceans: Implications on Fluxes of Climatically-significant Gases and for Climate Changes of Natural or Anthropogenic Origin - a Contribution to the International Polar Year (convention 2.4649.07, 2007-2009) funded by the F.R.S.-FNRS
- Year-round follow-up of air-ice-ocean carbon dioxide exchanges for Arctic sea ice: a contribution to the International Polar Year (convention 2.4584.09, 2009-2010) funded by the F.R.S.-FNRS
- **BIo**Geochemical cycles in the **SOUTH**ern Ocean: Role within the Earth System (Bigsouth, SD/CA/05A, 2011-2014) funded by the Belgian Science Policy
- **Year-Round Ocean-Sea Ice-Atmosphere Exchanges** (YROSIAE, convention 2.4517.11, 2011-2013) funded by the F.R.S.-FNRS
- Greenhouse gases dynamics in arctic ice (2013) Research Credit from the F.R.S.-FNRS

### *Techniques and skills*

- Underway and discrete measurement of water pCO<sub>2</sub>
- Gas chromatography (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, DMS)
- CO<sub>2</sub> air-sea and air-ice exchanges field measurements (chamber method and set up of eddy-covariance systems)
- Sea ice core collection and physical parameters measurements (T° & salinity)
- Total alkalinity (electro-titration)
- Dissolved oxygen (Winkler Method)
- Phytoplankton pigments (spectrofluorimetric method)
- Bacterial cultivation and count (fluorescence microscopy, CFU, MPN)
- Nutrients (Technicon AutoAnalyser)

**Dissertation**

Inorganic carbon dynamics and air-ice-sea CO<sub>2</sub> fluxes in the open and coastal waters of the Southern Ocean PhD, 297 pp, supervisors, Michel Frankignoulle, Alberto Borges, François Ronday, Université de Liège, 2006.

Elaboration of a spectrophotometer/computer connection ( in French, 40 pp) Graduate degree. Département de Chimie Physique, France ,Supervisor. Pr P. Viallet, Université de Perpignan, 1995.

**Publications (Peer Reviewed)**

67 articles, 2379 citations by 1642 documents, h-index: 25 (scopus)/3918 citations, h-index: 29 (google scholar)

M. Frankignoulle, G. Abril, A. Borges, I. Bourges, C. Canon, **B. Delille**, E. Libert & J.-M. Théate, 1998. Carbon dioxide emission from European estuaries *Science* 282, 434-436. [1]

Delille D. & **B. Delille**, 2000. Field observations on the variability of crude oil impact on bacterial assemblages from subAntarctic intertidal sediments. *Marine Environmental Research* 49, 403-417. [2]

**Delille B**, D. Delille, M. Fiala, C. Prevost & M. Frankignoulle, 2000. Seasonal changes of pCO<sub>2</sub> over a subantartic Macrocyctis kelp bed. *Polar Biology* 23, 706-716. [3]

Delille D, **B. Delille** & E Pelletier. 2002. Effectiveness of bioremediation of crude oil contaminated subAntarctic intertidal sediment the microbial response. *Microbial Ecology* 44, 118-126. [4]

Delille D., E. Pelletier, **B. Delille** & F. Coulon, 2003. Effect of nutrient enrichments on the bacterial assemblage of diesel or crude oil contaminated Antarctic soils. *Polar Record* 39, 1–10. D[5]

Fiala M., **B. Delille**, C. Dubreuil, E. Kopczynska, K. Leblanc, J. Morvan, B. Quéguiner, S. Blain, C. Cailliau, P. Conan, R. Corvaisier, M. Denis, M. Frankignoulle, L. Oriol, S. Roy. 2003. Mesoscale surface distribution of biogeochemical characteristics associated with a frontal system in the Crozet Basin (Southern Indian Ocean) during austral summer 1999. *Marine Ecology Progress Series* 249, 1–14 [6]

Abril G., H. Etcheber, **B. Delille**, M. Frankignoulle & A.V. Borges, 2003. Calcite dissolution and atmospheric CO<sub>2</sub> fluxes in the eutrophised Loire. *Marine Ecology Progress Series* 259:129-138 [7]

Borges, A.V., S. Djenidi, G. Lacroix, J. Théate, **B. Delille** & M. Frankignoulle, 2003. CO<sub>2</sub> atmospheric flux from mangrove surrounding waters. *Geophysical Research Letters* 30(11) 1558, doi:10.1029/2003GL017143 [8]

Kostianoy A.G., A.I. Ginzburg, M. Frankignoulle & **B. Delille**, 2003. Fronts and Mesoscale Variability in the Southern Indian Ocean as Inferred from the TOPEX/POSEIDON and ERS-2 Altimetry Data. *Oceanology* 43(5):632-642 [9]

Kostianoy A.G., A.I. Ginzburg, M. Frankignoulle & **B. Delille**, 2004. Fronts in the Southern Indian Ocean as inferred from satellite sea surface temperature data *Journal of Marine Systems* 45(1-2): 55-73. doi:10.1016/j.jmarsys.2003.09.004 [10]

Pelletier E., D. Delille & **B. Delille**, 2004. Effectiveness of crude oil bioremediation in sub-Antarctic intertidal sediments: chemistry and toxicity of oiled residues. *Marine Environmental Research* 57(4):311-327, doi:10.1016/j.marenvres.2003.07.001 [11]

Engel A., **B. Delille**, S. Jacquet, U. Riebesell, E. Rochelle-Newall, A. Terbrüggen & I. Zondervan, 2004. Transparent exopolymer particles and dissolved organic carbon production by *Emiliana huxleyi* exposed to different CO<sub>2</sub> concentrations: A mesocosm experiment. *Aquatic Microbial Ecology* 34:93-104 [12]

Rochelle-Newall E, **B. Delille**, M. Frankignoulle, J-P. Gattuso, S. Jacquet, U. Riebesell, A. Terbrüggen and I. Zondervan, 2004. Chromophoric dissolved organic matter in experimental mesocosms maintained under different pCO<sub>2</sub> levels. *Marine Ecology Progress Series* 272:25-31 [13]

Borges, A.V., **B. Delille**, L.-S. Schiettecatte, F. Gazeau, G. Abril & M. Frankignoulle, 2004. Gas transfer velocities of CO<sub>2</sub> in three European estuaries (Randers Fjord, Scheldt and Thames). *Limnology and Oceanography* 49(5):1630-1641 [14]

Borges A.V., J.-P. Vanderborght, L.-S. Schiettecatte, F. Gazeau, S. Ferrón-Smith, **B. Delille** & M. Frankignoulle, 2004. Variability of the gas transfer velocity of CO<sub>2</sub> in a macrotidal estuary (The Scheldt). *Estuaries* 27(4): 595-605 [15]

Engel A., I. Zondervan, K. Aerts, L. Beaufort, A. Benthien, L. Chou, **B. Delille**, J-P. Gattuso, J. Harlay, C. Heemann, L. Hoffmann, S. Jacquet, J. Nejtgaard, M.-D. Pizay, E. Rochelle-Newall, U. Schneider, Terbrüggen A. and Riebesell U, 2005. Testing the direct effect of CO<sub>2</sub> concentration on marine phytoplankton: A mesocosm experiment with the coccolithophorid *Emiliana huxleyi*. *Limnology and Oceanography* 50(2): 493-507 [16]

Gazeau F., C. M. Duarte, J.- P. Gattuso, C. Barrón, N. Navarro, S. Ruíz, Y.T. Prairie, M. Calleja, **B. Delille**, M. Frankignoulle & A.V. Borges, 2005. Whole-system metabolism and CO<sub>2</sub> fluxes in a Mediterranean Bay dominated by seagrass beds (Palma Bay, NW Mediterranean), *Biogeosciences* 2: 43-60 [17]

Jacquet S.H.M., F. Dehairs, D.B. Cardinal, J. Navez & **B. Delille**, 2005. Barium distribution controlled by hydrological and biogeochemical processes: results from a Southern Ocean Frontal System [Crozet-Kerguelen Basin], *Marine Chemistry* 95(3-4): 149-162 [18]

**Delille B.**, J. Harlay, I. Zondervan, S. Jacquet, L. Chou, R. Wollast, R.G.J Bellerby, M. Frankignoulle, A.V. Borges, U. Riebesell & J-P. Gattuso, 2005. Response of primary production and calcification to changes of pCO<sub>2</sub> during experimental blooms of the coccolithophorid *Emiliana huxleyi*, *Global Biogeochemical Cycles*, 19, GB2023, doi:10.1029/2004GB002318 [19]

Rangama Y., J. Boutin, J. Etcheto, L. Merlivat, T. Takahashi, **B. Delille**, M. Frankignoulle, & D.C.E. Bakker, 2005. Variability of net air-sea CO<sub>2</sub> flux inferred from in situ and satellite measurements in the Southern Ocean south of Tasmania and New Zealand, *Journal of Geophysical Research*, 110(C9), C09005, doi:10.1029/2004JC002619 [20]

Borges A.V., **B. Delille** & M. Frankignoulle, 2005. Budgeting sinks and sources of CO<sub>2</sub> in the coastal ocean: Diversity of ecosystems counts, *Geophysical Research Letters*, 32, L14601, doi:10.1029/2005GL023053 [21]

Gazeau F., A.V. Borges, C. Barrón, C.M. Duarte, N. Iversen, J.J. Middelburg, **B. Delille.**, M.-D Pizay, M. Frankignoulle & J.-P. Gattuso, 2005. Net ecosystem production in an estuary estimated by different methods (The Randers Fjord, Denmark) *Marine Ecology Progress Series*, 301:23-41 [22]

Zemmelink H.J., **B. Delille**, J.L. Tison, E.J. Hints, L. Houghton & J.W.H. Dacey, 2006. CO<sub>2</sub> deposition over the multi year ice of the western Weddell Sea, *Geophysical Research Letters*, 33, L13606, doi:10.1029/2006GL026320 [23]

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**Delille B.**, B. Jourdain, A.V. Borges, J.-L. Tison & D. Delille, 2007. Biogas (CO<sub>2</sub>, O<sub>2</sub>, dimethylsulfide) dynamics in Spring Antarctic fast ice. *Limnology and Oceanography*, 52(4):1367-1379 [27]

Engel A., K. Schulz, U. Riebesell, R. Bellerby, **B. Delille**, & M. Schartau, 2008, Effects of CO<sub>2</sub> on particle size distribution and phytoplankton abundance during a mesocosm bloom experiment (PeECE II), *Biogeosciences*, 5, 509-5213 [28]

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Koné Y.J.M., G. Abril, K. N. Kouadio, **B. Delille** & A.V. Borges, 2009. Seasonal variability of carbon dioxide in the rivers and lagoons of Ivory Coast (West Africa), *Estuaries and Coast*, 32:246–260, doi: 10.1007/s12237-008-9121-0 [34]

Koné Y.J.M., G. Abril, **B. Delille** & A.V. Borges, 2010. Seasonal variability of methane in the rivers and lagoons of Ivory Coast (West Africa), *Biogeochemistry*, doi:10.1007/s10533-009-9402-0 [35]

Harlay, J., A.V. Borges, **B. Delille**, C. Van Der Zee, L.-S. Schiettecatte, N. Roevros, R.H.M. Godoi, S. Groom, L. Rebreanu, P.-E. Lapernat, K. Aerts, M.-H. Daro, R. Van Grieken & L. Chou, 2010. Biogeochemical study of a coccolithophorid bloom in the northern Bay of Biscay (NE Atlantic Ocean), in June 2004, *Progress in Oceanography*, 86:317-336, doi:10.1016/j.pocan.2010.04.029 [36]

Suykens K., **B. Delille**, L. Chou, C. De Bodt, J. Harlay & A.V. Borges, 2010. Dissolved inorganic carbon dynamics and air-sea carbon dioxide fluxes during coccolithophorid blooms in the Northeast European continental margin (northern Bay of Biscay) *Global Biogeochemical Cycles*, 24, GB3022, doi:10.1029/2009GB00373 [37]

Nisumaa A.-M., S. Pesant, R. G. J. Bellerby, B. Delille, J. J. Middelburg, J. C. Orr, U. Riebesell, T. Tyrrell, D. Wolf-Gladrow, and J.-P. Gattuso, 2010. EPOCA/EUR-OCEANS data compilation on the biological and biogeochemical responses to ocean acidification, *Earth System Science Data*, 2, 167–175, 2010, doi:10.5194/essd-2-167-2010 [38]

Suykens K., S. Schmidt, **B. Delille**, J. Harlay, L. Chou, C. De Bodt, N. Fagel & A.V. Borges, 2011. Benthic remineralization in the northwest European continental margin (northern Bay of Biscay), *Continental Shelf Research*, 31:644-658 [39]

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Rysgaard S, J. Bendtsen, **B. Delille**, G.S. Dieckmann, R.N. Glud, H. Kennedy, J. Mortensen, S. Papadimitriou, D.N. Thomas & J.-L. Tison, 2011. Sea ice contribution to the air-sea CO<sub>2</sub> exchange in the Arctic and Southern Oceans *Tellus B*, 63(5):823-830, doi: 10.1111/j.1600-0889.2011.00571.x [43]

Joassin P., **B. Delille**, K. Soetaert, J. Harlay A.V. Borges, L. Chou, U. Riebesell, K. Suykens & M. Gregoire, 2011. Carbon and nitrogen flows during a bloom of the coccolithophore *Emiliana huxleyi*: modelling a mesocosm experiment *Journal of Marine Systems* 85(3-4): 71-85 [44]

Borges, A.V., G. Abril, **B. Delille**, J.-P. Descy, & F. Darchambeau, 2011. Diffusive methane emissions to the atmosphere from Lake Kivu (Eastern Africa). *Journal of geophysical Research – Biogeosciences* in press. [45]

Geilfus N.-X., G. Carnat, T. Papakyriakou, J.-L. Tison, B. Else, H. Thomas, E. Shadwick and **B. Delille**, 2011. pCO<sub>2</sub> dynamics and related air-ice CO<sub>2</sub> fluxes in the Arctic coastal zone (Amundsen Gulf, Beaufort Sea) *Journal of geophysical Research – Ocean*, 117, C00G10, doi:10.1029/2011JC007118 [46]

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Geilfus N.-X., **B. Delille**, V. Verbeke, J.L. Tison, 2012. Towards a method for high vertical resolution measurements of the partial pressure of CO<sub>2</sub> within bulk sea ice, *Journal of Glaciology*, 58(208):287-300, doi: 10.3189/2012JG11J071 [48]

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Geilfus N.-X., G. Carnat, G.S. Dieckmann., N. Halden, G. Nehrke, T. Papakyriakou, J.-L. Tison & **B. Delille**, 2013. First estimates of the contribution of CaCO<sub>3</sub> precipitation to the release of CO<sub>2</sub> to the atmosphere during young sea ice growth, *Journal of geophysical Research – Ocean*, doi:10.1029/2012JC007980 [50]

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Heinesch B, M. Aubinet, G. Carnat, H. Eicken, N.-X. Geilfus, T. Papakyriakou, M. Yernaux, J.-L. Tison & **B. Delille**, 2010. Survey of air-sea ice CO<sub>2</sub> fluxes in Barrow, International Symposium on Sea Ice in the Physical and Biogeochemical System, 31 May – 4 June 2010, Tromsø, Norway. [212]

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Zhou J., J.-L. Tison, H. Eicken, C. Petrich, N.-X. Geilfus, F. Brabant, G. Carnat, T. Papakyriakou, B. Heinesch, R. Laing & **B. Delille**, 2011. Dynamic processes in sea ice captured by the temporal evolution of its biogeochemical properties. VLIZ Young Scientist Day, Brugge, Belgium, 25 February 2011, *oral presentation*. [214]

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Borges A.V., G. Abril, **B. Delille**, J.-P. Descy & F. Darchambeau, 2011. Variability of methane in the epilimnion of Lake Kivu. European Geosciences Union General Assembly 03– 08 April 2011, Vienna, Austria. [217]

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Champenois W., G. Lepoint, **B. Delille**, M.-V. Commarieu, M. Grégoire, J.-M. Beckers, & Alberto V. Borges, 2011. Evaluation of metabolic rates in various benthic communities in the Bay of Revellata (Corsica) using optodes. European Geosciences Union General Assembly 03– 08 April 2011, Vienna, Austria. [219]

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**Delille B.**, N.-X. Geilfus, M. Vancoppenolle, B. Tilbrook, D. Lannuzel, V. Schoemann, S. Becquevort, G. Carnat, A.V. Borges, D. Delille, C. Lancelot, L. Chou, G.S. Dieckmann, B. Heinesch, M. Aubinet, F.

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Zhou J., **B. Delille**, F. Brabant, J.-L. Tison, 2014. On the use of O<sub>2</sub>/Ar and O<sub>2</sub>/N<sub>2</sub> to estimate the biological carbon uptake in landfast sea ice. International Symposium on Sea Ice in a Changing Environment, 10-14 March, Hobart, Australia, *poster presentation* [246]

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Nomura D, B. Delille, G.S. Dieckmann, J.-L. Tison, K.M. Meiners, M.A. Granskog, T. Tamura, 2014. Sea ice CO<sub>2</sub> flux in the Southern Ocean during mid-winter and early spring. International Symposium on Sea Ice in a Changing Environment, 10-14 March, Hobart, Australia, *oral presentation* [248]

**Delille B.**, Haskell, T., Champenois, W., Heinesch B., Zhou, J., Schoemann, V., Carnat, G., Fripiat, F., Goossens, T., Moreau S., Vancoppenolle M., Vivier F., Lourenço, A. and Tison, J.-L., 2014. Year Round survey of Ocean-Sea Ice-Air Exchanges – the YROSLAE survey. International Symposium on Sea Ice in a Changing Environment, 10-14 March, Hobart, Australia, *oral presentation* [249]

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Thomas D.N, J. Zhou, H. Kaartokallio, J.-L. Tison, **B. Delille**, L. Jørgensen, A.-M. Luhtanen, G. Kattner, C.A. Stedmon, R. Autio, H. Kuosa, G.S. Dieckmann, H. Kennedy, K.-U. Evers, 2014. Using the Arctic Environment Test Basin to study the dynamics of dissolved organic matter in sea ice, Hydralab IV joint user meeting, Lisbon, Portugal, 2-4 July 2014, *oral presentation* [251]

**Delille B.** 2014. CO<sub>2</sub> fluxes across the air-ice interface. Ocean Carbon and Biogeochemistry (OCB) Summer Workshop, Woods Hole, Ma, USA, 21-24 July, 2014, *invited talk* [252]

Sørensen, L.L., **B. Delille**, B. Jensen, S. Wickström & T. Papakyriakou, 2014. [Atmosphere - surface fluxes estimated from different measurement techniques over snow covered sea ice](#), Arctic change 2014, Ottawa, Canada, 8-12 december 2014, *oral presentation* [253]

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Moreau S., M. Vancoppenolle, B. Delille, J.-L. Tison, J. Zhou, M. Kotovitch, D. Thomas, N.-X. Geilfus & H. Goosse, 2015. The role of sea ice in the carbon cycle of Polar Seas: 1D to 3D modelling, Marine Environmental Monitoring, Modelling And Prediction, 47<sup>th</sup> International Liège Colloquium on Ocean Dynamics, 4-8 May 2015, Liège, Belgium.

### *Ph D supervision*

Geilfus N.-X. [Inorganic carbon dynamics in coastal arctic sea ice and related air-ice CO<sub>2</sub> exchanges](#), 189 pp, Université de Liège, 2011. Now at Aarhus University

Zhou J. A year-round survey of the biogeochemistry of landfast sea ice in McMurdo Sound (Antarctica) : implications for air-ice-ocean fluxes of climatically significant gas compounds, 2014. Now at Duke University

### *Ph D reading committee*

Verbeke V (2005) Concentrations en gaz dans la glace de mer : développements techniques et implications Environnementales, PhD thesis, Université Libre de Bruxelles, Bruxelles, 305pp

Koné Y.J.M (2008) Dynamics of dioxide carbon and methane in some tropical ecosystems (Mangroves of Ca Mau, Rivers and lagoons from Ivory Coast), PhD thesis, University of Liège, Liège

De Bodt C. (2010) Pelagic calcification and fate of carbonate in marine systems, PhD thesis Université Libre de Bruxelles, Bruxelles

Suykens K. (2010) Dissolved inorganic carbon dynamics during coccolithophorid blooms in the northeast European continental margin (northern Bay of Biscay) PhD thesis, University of Liège

Joassin P. (2011) Mathematical modeling of biogeochemical processes associated to a coccolithophorid (*Emiliana huxleyi*) bloom / Study of the seasonal and long-term variability of biogeochemical properties in the Black Sea using a Data Interpolating Variational Analysis (DIVA) PhD thesis, Université de Liège

Coupel P. (2012) Impact de la fonte de la glace sur le phytoplancton et le CO<sub>2</sub> de l'Océan Arctique, PhD thesis, Université Pierre et Marie Curie, Paris

Boereboom T. (2012) Greenhouse gases investigations in ice from periglacial environments, PhD thesis, Université Libre de Bruxelles, Bruxelles, 120pp

Brabant F. (2012) Physical and biogeochemical controls on the DMS/P/O cycle in Antarctic sea ice, PhD thesis, Université Libre de Bruxelles, Bruxelles, 178pp

#### ***Peer Reviewing in Journals***

Journal of Geophysical Research Ocean  
 Geophysical Research Letters  
 Global Biogeochemical Cycles  
 Geochimica et Cosmochimica Acta  
 Marine Chemistry  
 Deep Sea Research  
 Biogeosciences  
 Journal of Glaciology  
 Journal of Marine Systems

#### ***Referee for International Research Funding Agencies***

National Science Foundation (NSF - USA), INSU 5France), Inbev-Latour (Belgian), Geo Mission Ltd

#### ***Outcomes towards general public***

L'Emiliana et le CO<sub>2</sub>. Interview by S. Gardaz in the daily Switzerland newspaper "Le Temps" 20 June 2001

Satellites at the service of polar research Interview in the European Commission magazine "RTD info special issue, May 2005

L'Année Polaire Internationale débutera le 1er mars. Interview by Janssens P. in the Université de Liège corporate magazine "Le 15<sup>ème</sup> jour" February 2007

Station Belge dans l'Antarctique: "émission zéro" pour un gain maximal ? Open letter by Becquevort S., Borges A., Cardinal D., Claeys P., De Batist M., De Broyer C., Dehairs F., Delille B., Feller G., Fichet



T., Goosse H., Huybrechts P., Lancelot C., Lorrain R., Pattyn F., Schoemann V., Tison J.-L., Vanreusel A., Volckaert F., Willems A., Wilmotte A. in the daily Belgian newspaper "Le soir", 4 september 2007

"Deux Liégeois dans l'Antarctique". Interview by Terlonge F. in the Université de Liège corporate magazine "Le 15<sup>ème</sup> jour" December 2007

"Le réchauffement menace les manchots". Interview by M. P.F. in the daily Belgian newspaper "La Meuse", 10 December 2007

"Les océans ont eu chaud, très chaud". Interview by Fella B. in the daily Belgian newspaper "La libre", 27 August 2009

"Le réchauffement des océans". Interview in the journal of the Belgian television station RTL-TVI, 30 September 2009

"Dialogues gazeux sur la banquise". Interview in the F.R.S.-FNRS corporate magazine "La lettre du F.N.R.S" September 2009

"Bouleversements climatiques. Optimisme ou fatalisme ?" Les chercheurs de l'ULg s'expriment. Interview by Terlonge F. in the Université de Liège corporate magazine "Le 15<sup>ème</sup> jour" December 2009

"Bilan actuel du CO<sub>2</sub> dans le monde". Talk at the "Espace Universitaire de Liège", 21 January 2010

"Le poumon de la planète". Des chercheurs qui trouvent. Interview by Lourtie S. in the Belgian national daily newspaper "La libre Belgique". 14 august 2010

Participation to the debate "Comment l'enseignement prépare les futurs chercheurs polaires ?" organized by the "Athénée Royale de Pepinster" 26 october 2010

Short video directed by Daniel Bay on the activities of the Unité d'Océanographie Chimique on the Ulg Web TV. 2011

Presentation of the Movie "Mission à Barrow" directed by Daniel Bay and debate in the frame of the "Week of water and climate of Verviers - 2011" – Verviers 23 March 2011

"La fertilisation des océans" Interview by Sophie Brems in NUWA on the RTBF Belgian radio national network.

### *Significant Field Experiences*

May. '14 to Jun. '14	<b>Young Sound 2014 (Leg 2) Sea ice survey in an Arctic Fjord near Daneborg (East Greenland)</b> collaboration with Pr S. Rysgaard & N.-X. Geilfus from the Arctic Science Partnership (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method)
Jun. '13 to Aug. '13	<b>AW ECS (Antarctic Winter Ecosystem Climate Study) cruise aboard the R.V. Polarstern in the Weddell Sea</b> collaboration with G.S. Dieckmann from the AWI (sea ice biogeochemistry)
Feb. '13	<b>YROSIAE (Leg 5) Sea ice survey in McMurdo Sound</b> (Antarctica) collaboration with Dr T. Haskell and Antarctica New Zealand. One year survey of sea ice biogeochemistry (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method & eddy covariance)
Dec. '12	<b>YROSIAE (Leg 4) Sea ice survey in McMurdo Sound</b> (Antarctica)

	collaboration with Dr T. Haskell and Antarctica New Zealand. One year survey of sea ice biogeochemistry (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method & eddy covariance)
Aug. '12 to Oct. '12	<b>YROSIAE (Leg 3) Sea ice survey in McMurdo Sound</b> (Antarctica) collaboration with Dr T. Haskell and Antarctica New Zealand. One year survey of sea ice biogeochemistry (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method & eddy covariance)
Jun. '12	<b>Interice V</b> ice tank experiment carried out at the HSVA Arctic Environmental Test Basin in Hamburg, Germany. Study of DOM and gas dynamics in artificial sea ice. (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method)
Feb. '12	<b>YROSIAE (Leg 2) Sea ice survey in McMurdo Sound</b> (Antarctica) collaboration with Dr T. Haskell and Antarctica New Zealand. One year survey of sea ice biogeochemistry (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method & eddy covariance)
Nov.' To Dec. '11	<b>YROSIAE (Leg 1) Sea ice survey in McMurdo Sound</b> (Antarctica) collaboration with Dr T. Haskell and Antarctica New Zealand. One year survey of sea ice biogeochemistry (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method & eddy covariance)
Mar. '10	<b>Sea ice survey in Kapissilit</b> (Greenland) coordinated by the Greenland Climate Research Centre (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method)
Sep. '09	<b>Interice IV</b> ice tank experiment carried out at the HSVA Arctic Environmental Test Basin in Hamburg, Germany. Study of CaCO <sub>3</sub> precipitation in artificial sea ice. (CO <sub>2</sub> dynamics & air-ice CO <sub>2</sub> fluxes measured using the chamber method)
Jan. '09 to Jun. '09	<b>Barrow, AK.</b> Survey of the inorganic carbon dynamics within sea ice and related air-ice CO <sub>2</sub> fluxes. This involved three 2-3 weeks trips in Alaska.
From Sep. '08 to Apr. '09	<b>Arcachon Bay.</b> Survey of the inorganic carbon dynamics and related air-sea CO <sub>2</sub> fluxes in an inter-tidal zone. (CO <sub>2</sub> dynamics & air-sea CO <sub>2</sub> fluxes measured by eddy-correlation method). This survey was carried during my post-doc at the Université de Bordeaux 1 and involves numerous 1 day trips in the bay.
Apr. '08	<b>CFL – IPY</b> (Circumpolar Flaw Lead System Study) leg 7b onboard <i>CCGS Amundsen</i> . Year round study of the flaw lead system in the Amundsen Gulf (Arctic) (CO <sub>2</sub> dynamics within sea ice)
Feb-Mar. '08	<b>Bonus-Goodhope - IPY</b> cruise onboard <i>RV Marion Dufresne</i> . Physical and biogeochemical (with emphasis on TEI) survey in the South Atlantic/Southern Ocean (underway pCO <sub>2</sub> , discrete DIC measurements)
Sep-Oct. '07	<b>SIMBA - IPY (Sea-Ice Mass Balance in Antarctic)</b> sea-ice drift experiment onboard <i>RV Nathaniel B. Palmer</i> in the Bellingshausen Sea (underway pCO <sub>2</sub> & pH -discrete pCO <sub>2</sub> & pH & Alkalinity measurements)
May '07	<b>PEACE II</b> cruise onboard <i>RV Belgica</i> in the Gulf of Biscay within the framework of the project “Peace: Role of PELagic cAlcification and export of CarbonatE production in climate change” (underway pCO <sub>2</sub> - discrete pH, DIC & Alkalinity – Respiration from O <sub>2</sub> incubation - Benthic fluxes of O <sub>2</sub> , DIC, TA)

Mar-Apr. '07	<b>Kivu Lake</b> , survey of the Kivu Lake (Rwanda, Democratic Republic of the Congo) that is subject to lumnic eruptions (pCO <sub>2</sub> , TA, DIC, vertical profiles)
Jun. '06 and Aug. '06	<b>Posidonia oceanica meadows</b> . Mooring deployment above seagrass meadows in the Bay of Calvi – France (O <sub>2</sub> , pCO <sub>2</sub> , fluorescence and temperature monitoring)
Nov. '04 – Jan. '05	<b>ISPOL</b> cruise onboard <i>RV Polarstern</i> Study of the <b>Antarctic Pack Ice</b> (underway pCO <sub>2</sub> & pH -discrete pCO <sub>2</sub> & pH & Alkalinity measurements)
Sep. '03 - Oct. '03	<b>SATVAL 2003/V1</b> cruise onboard <i>RSV Aurora Australis</i> <b>Study of the Antarctic Pack Ice</b> (underway pCO <sub>2</sub> & pH - discrete pCO <sub>2</sub> & pH & Alkalinity measurments)
Apr. '03 - May '03	<b>PEECE Mesocosm</b> experiment “CO <sub>2</sub> effects on a natural plankton community during the course of a diatom bloom ” at the Large Scale Facilities of the University of Bergen (Norway) (discrete pCO <sub>2</sub> & Alkalinity)
Apr. '01 - Jul. '02	3 <b>EUROTROPH</b> cruises (15 days each) : Randers Estuary (Denmark) and Palma Bay (Spain). Assessment of the tropic status of some coastal ecosystems (underway O <sub>2</sub> , pCO <sub>2</sub> & pH - discrete pH, O <sub>2</sub> & Alkalinity - CO <sub>2</sub> air-sea exchange measurments )
Apr' 02 - May '02	<b>CCCC</b> Cruise on board the <i>RV Belgica</i> in the Gulf of Biscay within the framework of the project “ Role of oceanic production and dissolution of calcium carbonate in climate change” (underway pCO <sub>2</sub> & pH - discrete pH & Alkalinity)
May '01 - Jul. '01	<b>PEECE Mesocosm experiment</b> “Biological responses to CO <sub>2</sub> -related changes in seawater carbonate chemistry during a bloom of <i>Emiliana huxleyi</i> ” at the Large Scale Facilities of the University of Bergen (Norway) (discrete pCO <sub>2</sub> & Alkalinity)
Oct. '99 - Dec.'99	<b>Summer campaign in Adélie Land</b> (Antarctica). Study of biological gases within and below the sea-ice edge. Oil spill bioremediation experiment on Antarctic soils (underway O <sub>2</sub> , pCO <sub>2</sub> & pH/ discrete pH, O <sub>2</sub> & Alkalinity - CO <sub>2</sub> air-sea exchange measurments)
Nov '97 - Jul '01	4 <b>BIOGEST</b> cruises (6 days each): Scheldt, Loire and Gironde estuaries. Biogas dynamics in <b>estuaries</b> (underway O <sub>2</sub> , pCO <sub>2</sub> & pH - discrete pH, O <sub>2</sub> & Alkalinity - CO <sub>2</sub> air-sea exchange measurements )
Jan. '99 - Feb. '99	<b>ANTARES 4</b> cruise ( <b>SO-JGOFS</b> ) onboard <i>RV Marion Dufresne</i> . Biogeochemical and physical study at mesoscale of the SAZ zone in the Crozet basin, Southern Ocean (underway O <sub>2</sub> , pCO <sub>2</sub> & pH - discrete pH, O <sub>2</sub> & Alkalinity)
Nov. 98 - Dec. 98	<b>Summer campaign</b> in the <b>Kerguelen Archipelago</b> (subAntarctica) onboard <i>RV Marion Dufresne</i> and <i>RV La Curieuse</i> . Ecology of fjords and coves of the archipelago (underway O <sub>2</sub> , pCO <sub>2</sub> & pH/ discrete pH, O <sub>2</sub> & Alkalinity - CO <sub>2</sub> air-sea exchange measurments )
Feb. '98 - Mar. '98	<b>SAZ</b> cruise onboard <i>RSV Aurora Australis</i> Study of the <b>subantarctic zone</b> South of Tasmania (underway pCO <sub>2</sub> & pH - discrete pH & Alkalinity measurments)
Dec. '95 - Mar. 97	<b>Over-wintering</b> in the Kerguelen Archipelago ( <b>subantarctica</b> ) in the framework of MICROBIOKER Research Project at Kerguelen Islands (Antarctic and Austral French Territories) Long term and short term coastal surface seawater monitoring (measurments of

heterotrophic and total bacterial communities, pCO<sub>2</sub>, phytoplankton biomass and nutrients)

**BIOREN** Project: Oil spill bioremediation experiment (monitoring of total & specific bacterial communities, & hydrocarbon concentration).

Both projects required regular and frequent cruises onboard *RV La Curieuse*

#### *Ancillary skills*

- European first aid course ( 15 h) provided by the Belgian Red Cross (Aug 2012)
- First aid worker - Fire course (4 h) (2011)
- Antarctic field training (3 d) provided by Antarctica New Zealand (Nov 2011)