

Curriculum Vitae (updated May 2012)

- **General information**

- first name: Alberto
- last name: VIEIRA BORGES
- born 14.03.1972 in Lisbon
- Portuguese nationality
- present position: Research associate at the FRS-FNRS
- office: Chemical Oceanography Unit, University of Liège, Institut de Physique (B5), B-4000
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- **Education**

- 12/02/2001: Ph. D. in Oceanology from the Université de Liège with highest honours
- 27/09/1996: Master in Oceanology from the Université de Liège with highest honours
- 20/09/1995: Bachelor in Oceanology from the Université de Liège with highest honours
- 16/09/1994: Bachelor in Biology from the Université Libre de Bruxelles with great honours

- **Dissertations**

- *Distribution of the partial pressure of carbon dioxide and air-sea exchanges over the European continental shelf*, Ph. D., 300 pp., supervisor Michel Frankignoulle, Université de Liège, 2001
- *Distribution et variations de la pression partielle en CO₂ dans les eaux de surface de la Baie Sud de la Mer du Nord*, Master Dissertation, 52 pp., supervisor Michel Frankignoulle, Université de Liège, 1996
- *Présence, structure et signification des cordons et rachi génitaux chez l'oursin *Paracentrotus lividus* (Lamarck) (Echinodermata)*, Bachelor Dissertation, 58 pp., supervisor Michel Jangoux, Université Libre de Bruxelles, 1994

- **Appointments**

- 01/10/1996-30/09/2000: Ph.D. FRIA
- 01/03/2001-30/09/2001: Post-doctoral researcher EUROTROPH
- 01/10/2001-30/09/2004: Post-doctoral researcher FNRS
- 01/10/2004-28/02/2005: Post-doctoral researcher CANOPY
- 01/03/2005-30/09/2005: Post-doctoral researcher CARBOOCEAN
- 01/10/2005 : Research associate at the FNRS

- **Research interests**

The main research interest is carbon and carbonate cycling across aquatic systems including freshwater ecosystems (lakes and rivers), coastal ecosystems (estuaries, seagrass beds, mangroves and continental margins), and open ocean with particular emphasis on the exchange with the atmosphere of CO₂ and other gases (CH₄ and N₂O), and understanding of underlying processes.

- **Analytical skills**

- the partial pressure of CO₂ by equilibration
- the air-sea flux of CO₂ with the floating chamber method
- the pH with combined electrode in seawater, brackish and fresh waters on discrete or on-line samples
- the total alkalinity by Gran electro-titration
- the dissolved oxygen with the Winkler method with a potentiometric end-point determination on discrete or on-line samples
- the phytoplanktonic pigments by spectrophotometry and fluorometry
- inorganic nutrients by spectrophotometry

- **Major Research cruises**

- 24/10/96-30/10/96 : BIOGEST cruise on board the *Côte de la Manche* (Gironde)
- 09/12/96-13/12/96 : BIOGEST cruise on board the *Belgica* (Scheldt)
- 13/06/97-16/06/97 : BIOGEST cruise on board the *Belgica* (Gironde)
- 18/06/97-07/07/97 : OMEX II cruise on board the *Belgica* (Galician coast)
- 18/09/97-27/09/97 : BIOGEST cruise on board the *Mestre Costeiro* (Sado & Douro)
- 24/11/97-28/11/97 : BIOGEST cruise on board the *Belgica* (Rhine)
- 06/01/98-19/01/98 : OMEX II cruise on board the *Charles Darwin* (Galician coast)
- 30/03/98-02/04/98 : BIOGEST cruise on board the *Luctor* (Rhine)
- 25/05/98-29/05/98 : BIOGEST cruise on board the *Belgica* (Scheldt)
- 14/06/98-14/07/98 : OMEX II cruise on board the *Belgica* (Galician coast)
- 29/07/98-24/08/98 : OMEX II cruise on board the *Charles Darwin* (Galician coast)
- 05/10/98-09/10/98 : BIOGEST cruise on board the *Belgica* (Scheldt)
- 28/12/98-14/01/99 : OMEX II cruise on board the *Meteor* (Galician coast)

- 30/08/99-21/10/99 : OMEX II cruise on board the *Belgica* (Galician coast)
- 21/04/01-02/05/01 : EUROTROPH cruise on board the *Genetica* (Randers Fjord)
- 20/08/01-31/08/01 : EUROTROPH cruise on board the *Thyrving* (Randers Fjord)
- 06/11/01-28/11/01 : CANOBA cruise on board the *Pelagia* (North Sea)
- 26/02/02-12/03/02 : EUROTROPH cruise on board the *Mytilus* (Bay of Palma)
- 17/06/02-27/06/02 : EUROTROPH cruise on board the *Téthys* (Bay of Palma)
- 04/11/02-13/11/02 : EUROTROPH cruise on board the *Belgica* (Scheldt)
- 31/03/03-10/04/03 : EUROTROPH cruise on board the *Belgica* (Scheldt)
- 18/08/05-07/09/05 : CARBOOCEAN cruise on board the *Pelagia* (North Sea)
- 24/04/06-11/05/06 : CARBOOCEAN cruise on board the *Belgica* (North Sea)
- 29/05/06-10/06/06 : PEACE cruise on board the *Belgica* (Gulf of Biscay)
- 13/03/07-03/04/07 : CAKI cruise in Lake Kivu
- 07/05/07-26/05/07 : PEACE cruise on board the *Belgica* (Gulf of Biscay)
- 25/08/07-11/09/07 : CAKI cruise in Lake Kivu
- 05/05/08-25/05/08 : PEACE cruise on board the *Belgica* (Gulf of Biscay)
- 19/06/08-05/07/08 : CAKI cruise in Lake Kivu
- 18/04/09-10/05/09 : CAKI cruise in Lake Kivu
- 17/05/10-12/06/10 : CONGO 2010 expedition

- **Main projects**

- Crédit aux Chercheurs F.N.R.S. 2002-2003 n°1.5.066.03 (2003-2005)
- Towards an integrated marine Carbon sources and sinks assessment EU IP CARBOOCEAN FP6 (2005-2010) (Contract no. 511176 (GOCE))
- Understanding the Carbon Cycle in the Coastal Zone using an interdisciplinary approach combining in-situ monitoring, mathematical models and advanced statistical analysis of data series in a global change perspective (Mandat d'impulsion scientifique F.N.R.S., M.I.S. n° F.4513.06, 2006-2007)
- Role of pelagic calcification and export of carbonate production in climate change (PEACE, BSP, SD/CS/03A, 2006-2009)
- Integrated Study of Southern Ocean Biogeochemistry and Climate Interactions in the Anthropocene (BELCANTO III, SD/CA/03A, 2006-2009)
- Carbon and Nutrient cycles in lake Kivu (CAKI) F.R.F.C F.N.R.S 2.4598.07 (2007-2010)
- Optical remote sensing of marine, coastal and inland waters (BELCOLOUR-2, 2007-2011)
- Southern European Seas: Assessing and Modelling Ecosystem changes EU IP SESAME FP6 (2006-2010) (Contract No. GOCE-2006-036949)
- EU Coordination and support actions (FP7) COordination action Carbon Observation System (COCOS) (2008-2011)
- ESF COST Action 735 ("Tools for Assessing Global Air-Sea Fluxes of Climate and Air Pollution Relevant Gases") (2006-2011)
- European Research Council (ERC) Starting Grant "African river basins: catchment-scale carbon fluxes and Transformations (AFRIVAL)" (240002)

- **Project reviews**

U.S. National Oceanic and Atmospheric Administration Global Carbon Cycle Program [1], U.S. National Science Foundation [6], Network Centres of Excellence of Canada [1], Agence Nationale de la Recherche [1], EU Marie Curie individual fellowship [1], University of Hawai'i Sea Grant [1]

- **Membership in Professional Associations**

- Estuarine Research Federation
- Estuarine and Coastal Sciences Association
- European Geosciences Union
- Advancing the Science of Limnology and Oceanography
- American Geophysical Union
- Collège des Alumni des Académies Royales de Belgique

- **Scientific Awards**

- April 2004 - EGU Outstanding Young Scientist Award

- **Peer reviewed publications**

1. Frankignoulle M., G. Abril, A. Borges, I. Bourge, C. Canon, B. Delille, E. Libert & J.-M. Théate (1998) Carbon dioxide emission from European estuaries. *Science* 282: 434-436
2. Borges A.V. & M. Frankignoulle (1999) Daily and seasonal variations of the partial pressure of CO₂ in surface seawater along the Belgian and southern Dutch coastal areas. *Journal of Marine Systems* 19: 251-266
3. Abril G., H. Etcheber, A.V. Borges & M. Frankignoulle (2000) Excess atmospheric carbon dioxide transported by rivers into the Scheldt Estuary. *Comptes Rendus de l'Académie des Sciences de Paris* 330: 761-768
4. Álvarez-Salgado X.A., M.D. Doval, A.V. Borges, I. Joint, M. Frankignoulle, E.M.S. Woodward & F.G. Figueiras (2001) Off-Shelf Fluxes of Labile Materials by an Upwelling Filament in the NW Iberian Upwelling System. *Progress in Oceanography* 50(2-4): 321-337

5. Borges A.V. & M. Frankignoulle (2001) Short-term variations of the partial pressure of CO₂ in surface waters of the Galician upwelling system. *Progress in Oceanography* 50(2-4): 283-302
6. Frankignoulle M. & A.V. Borges (2001) The European Continental Shelf as a Significant sink for Atmospheric Carbon Dioxide. *Global Biogeochemical Cycles* 15(3): 569-576
7. Frankignoulle M. & A.V. Borges (2001) Direct and indirect pCO₂ measurements in a wide range of pCO₂ and salinity values. *Aquatic Geochemistry* 7:267-273
8. Frankignoulle M., A. Borges & R. Biondo (2001) A new design of equilibrator to monitor carbon dioxide in highly dynamic and turbid environments. *Water Research* 35/5: 1344-1347
9. Borges A.V. & M. Frankignoulle (2002) Distribution and air-water exchange of carbon dioxide in the Scheldt plume off the Belgian coast. *Biogeochemistry* 59(1-2): 41-67
10. Borges A.V. & M. Frankignoulle (2002) Aspects of inorganic carbon dynamics in the upwelling system off the Galician coast. *Journal of Marine Systems* 32:181-198
11. Borges A.V. & M. Frankignoulle (2002) Distribution of surface carbon dioxide and air-sea exchange in the upwelling system off the Galician coast. *Global Biogeochemical Cycles* 16, 4/1-4/14
12. Álvarez-Salgado X.A, F.G. Figueiras, F.F. Pérez., S. Groom, E. Nogueira, A.V. Borges, L. Chou, C.G. Castro, G. Moncoiffe, A.F. Rios, A.E.J. Miller, M. Frankignoulle, G. Savidge & R. Wollast (2003) Thermohaline, Chemical and Biological Characterisation of the Poleward Flowing Portugal Coastal Counter Current off NW Spain. *Progress in Oceanography*, 56(2), 281-321
13. Borges A.V. & M. Frankignoulle (2003) Distribution of surface carbon dioxide and air-sea exchange in the English Channel and adjacent areas. *Journal of Geophysical Research*, 108 (C5), 10.1029, doi:2000JC000571
14. Abril, H. Etcheber, B. Delille, M. Frankignoulle & Borges AV. (2003) Carbonate dissolution in the turbid and eutrophic Loire estuary. *Marine Ecology Progress Series*, 259, 129-138
15. Borges, A.V., S. Djenidi, G. Lacroix, J.-M. Théate, B. Delille & M. Frankignoulle (2003) Atmospheric CO₂ flux from mangrove surrounding waters. *Geophysical Research Letters*, 30, 11, 1558, 10.1029/2003GL017143
16. Frankignoulle, M., R. Biondo, J.-M. Théate & A.V. Borges (2003). Carbon dioxide daily variations and atmospheric fluxes over the Great Bahama Bank using a novel autonomous measuring system. *Caribbean Journal of Science*, 39(3), 257-264.
17. Bouillon S., M. Frankignoulle, F. Dehairs, B. Velimirov, A. Eiler, G. Abril, H. Etcheber, & Borges A.V. (2003) Inorganic and organic carbon biogeochemistry in the Gautami Godavari estuary (Andhra Pradesh, India) during pre-monsoon : the local impact of extensive mangrove forests. *Global Biogeochemical Cycles*, 17, No. 4, 1114, doi:10.1029/2002GB002026.
18. Borges A.V., J.-P. Vandenborgh, L.-S. Schiettecatte, F. Gazeau, S. Ferrón-Smith, B. Delille & M. Frankignoulle (2004) Variability of the gas transfer velocity of CO₂ in a macrotidal estuary (The Scheldt). *Estuaries*, 27(4), 595-605
19. Borges, A.V., B. Delille, L.-S. Schiettecatte, F. Gazeau, G. Abril & M. Frankignoulle (2004). Gas transfer velocities of CO₂ in three European estuaries (Randers Fjord, Scheldt and Thames). *Limnology and Oceanography*, 49(5), 1630-1641
20. Gypens N., C. Lancelot & A.V. Borges (2004), Carbon dynamics and CO₂ air-sea exchanges in the eutrophicated coastal waters of the Southern Bight of the North Sea: a modelling study, *Biogeosciences*, 1(2), 147-157
21. Abril G. & Borges A.V. (2004) Carbon dioxide and methane emissions from estuaries. In Greenhouse gases emissions from natural environments and hydroelectric reservoirs: fluxes and processes, Chapter 7, pp. 187-207, A. Tremblay, L. Varfalvy, C. Roehm & M. Garneau (Eds), Environmental Science Series, Springer, Berlin, Heidelberg, New York, 730 pages
22. Gazeau F., Duarte C.M., 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 CO₂ fluxes in a Mediterranean Bay dominated by seagrass beds (Palma Bay, NW Mediterranean), *Biogeosciences*, 2(1), 43-60
23. Thomas H., Y. Bozec, H. J. W. de Baar, K. Elkalay, M. Frankignoulle, L.-S. Schiettecatte & A.V. Borges (2005) The Carbon budget of the North Sea, *Biogeosciences*, 2(1), 87-96
24. Borges A.V. (2005) Do we have enough pieces of the jigsaw to integrate CO₂ fluxes in the Coastal Ocean ? *Estuaries* 28(1): 3-27
25. 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 pCO₂ during experimental blooms of the coccolithophorid *Emiliania huxleyi*, *Global Biogeochemical Cycles*, 19, GB2023, doi:10.1029/2004GB002318
26. Borges A.V., B. Delille & M. Frankignoulle (2005) Sinks and sources of CO₂ in the coastal ocean: Diversity of ecosystems counts, *Geophysical Research Letters*, 32, L14601, doi:10.1029/2005GL023053
27. 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 metabolism in a micro-tidal estuary (Randers Fjord, Denmark): evaluation of methods, *Marine Ecology Progress Series*, 301, 23-41
28. Thomas H., Y. Bozec, K. Elkalay, H.J.W. de Baar, A.V. Borges & L.-S. Schiettecatte (2005) Controls of the surface water partial pressure of CO₂ in the North Sea, *Biogeosciences*, 2(4), 323-334
29. Gazeau F., J.-P. Gattuso, J.J. Middelburg, N. Brion, L.-S. Schiettecatte, M. Frankignoulle & A.V. Borges (2005) Planktonic and whole system metabolism in a nutrient-rich estuary (the Scheldt estuary), *Estuaries*, 28(6), 868-883
30. Schiettecatte L.-S., F. Gazeau, C. Van der Zee, N. Brion & A.V. Borges (2006) Time series of the partial

- pressure of carbon dioxide (2001-2004) and preliminary inorganic carbon budget in the Scheldt plume (Belgian coast waters), *Geochemistry, Geophysics, Geosystems (G3)*, VOL. 7, Q06009, doi:10.1029/2005GC001161
31. Barrón C., C.M. Duarte, M. Frankignoulle & A. V. Borges (2006) Organic carbon metabolism and carbonate dynamics in a Mediterranean seagrass (*Posidonia oceanica*) meadow, *Estuaries and Coasts*, 29(3), 417-426
 32. Bozec Y., H. Thomas, L.-S. Schiettecatte, A.V. Borges, K. Elkalay & H.J.W. de Baar (2006) Assessment of the processes controlling the seasonal variations of dissolved inorganic carbon in the North Sea, *Limnology and Oceanography*, 51(6), 2746–2762
 33. Borges A.V., L.-S. Schiettecatte, G. Abril, B. Delille & F. Gazeau (2006) Carbon dioxide in European coastal waters, *Estuarine, Coastal and Shelf Science*, 70(3), 375-387
 34. Bouillon S., F. Dehairs, L.-S. Schiettecatte & A.V. Borges (2007) Biogeochemistry of the Tana estuary and delta (northern Kenya), *Limnology and Oceanography*, 52(1), 45-59
 35. Paquay F.S., F.T. Mackenzie & A.V. Borges (2007) Carbon dioxide dynamics in rivers and coastal waters of the 'Big Island' of Hawaii, USA, during baseline and heavy rain condition, *Aquatic Geochemistry*, 13(1), 1-18
 36. Bouillon S., F. Dehairs, B. Velimirov, G. Abril & A.V. Borges (2007) Dynamics of organic and inorganic carbon across contiguous mangrove and seagrass systems (Gazi bay, Kenya), *Journal of Geophysical Research – Biogeosciences*, VOL. 112, G02018, doi:10.1029/2006JG000325
 37. Bouillon S., J.J. Middelburg, F. Dehairs, A.V. Borges, G. Abril, M.R. Flindt, S. Ulomi & E. Kristensen (2007) Importance of intertidal sediment processes and porewater exchange on the water column biogeochemistry in a pristine mangrove creek (Ras Dege, Tanzania), *Biogeosciences*, 4, 311–322
 38. Delille B., B. Jourdain, A.V. Borges, J.-L. Tison & D. Delille (2007) Biogas (CO₂, O₂, dimethylsulfide) dynamics in spring Antarctic fast ice, *Limnology and Oceanography*, 52(4), 1367-1379
 39. Rochelle-Newall E.J., C. Winter, C. Barrón, A.V. Borges, C.M. Duarte, M. Elliott, M. Frankignoulle, F. Gazeau, J.J. Middelburg, M.-D. Pizay & J.-P. Gattuso (2007) An artificial neural network analysis of factors controlling ecosystem metabolism in the coastal ocean, *Ecological Applications*, 17(5) Supplement, S185–S196
 40. Schiettecatte L.-S., H. Thomas, Y. Bozec & A.V. Borges (2007) High temporal coverage of carbon dioxide measurements in the Southern Bight of the North Sea, *Marine Chemistry*, 106(1-2), 161-173
 41. Thomas, H., F. Prowe, S. van Heuven, Y. Bozec, H.J.W. de Baar, L.-S. Schiettecatte, K. Suykens, M. Koné, A.V. Borges, I.D. Lima, S.C. Doney (2007) Rapid decline of the CO₂ buffering capacity in the North Sea and implications for the North Atlantic Ocean, *Global Biogeochemical Cycles*, 21 (GB4001), doi:10.1029/2006GB002825
 42. Borges A.V., B. Tilbrook, N. Metzl, A. Lenton & B. Delille (2008) Inter-annual variability of the carbon dioxide oceanic sink south of Tasmania, *Biogeosciences*, 5, 141–155
 43. Koné Y. J.-M. & A. V. Borges (2008) Dissolved inorganic carbon dynamics in the waters surrounding forested mangroves of the Ca Mau Province (Vietnam), *Estuarine, Coastal and Shelf Science*, 7(3): 409-421
 44. Bouillon S., A.V. Borges, E. Castañeda-Moya, K. Diele, Thorsten Dittmar, N.C. Duke, E. Kristensen, S.Y. Lee, C. Marchand, J.J. Middelburg, V.H. Rivera-Monroy, T.J. Smith III & R.R. Twilley (2008) Mangrove production and carbon sinks: a revision of global budget estimates, *Global Biogeochemical Cycles*, 22, GB2013, doi:10.1029/2007GB003052
 45. Ciais P., A.V. Borges, G. Abril, M. Meybeck, G. Folberth, D. Hauglustaine & I.A. Janssens (2008) The impact of lateral carbon fluxes on the European carbon balance, *Biogeosciences*, 5, 1259-1271
 46. Ciais P., A.V. Borges, G. Abril, M. Meybeck, G. Folberth, D. Hauglustaine & I.A. Janssens (2008) The Lateral Carbon Pump, and the European Carbon Balance IN The Continental-Scale Greenhouse Gas Balance of Europe (Eds. Dolman H., R. Valentini & A. Freibauer), pp. 341-360
 47. Borges A.V., K. Ruddick, L.-S. Schiettecatte & B. Delille (2008) Net ecosystem production and carbon dioxide fluxes in the Scheldt estuarine plume, *BMC Ecology*, 8:15, doi:10.1186/1472-6785-8-15
 48. Gypens N. & A.V. Borges (2008) Carbon dynamics in the highly eutrophicated Belgian Coastal Zone, In *Current status of eutrophication in the Belgian coastal zone*. Eds V. Rousseau, C. Lancelot and D. Cox, pp. 111-122
 49. Kristensen E., M.R. Flindt, S. Ulomi, A.V. Borges, G. Abril & S. Bouillon (2008) Emission of CO₂ and CH₄ to the atmosphere by sediments and open waters in two Tanzanian mangrove forests, *Marine Ecology Progress Series*, 370, 53–67
 50. Ralison O.H., A. V. Borges, F. Dehairs, J.J. Middelburg & S. Bouillon (2008), Carbon biogeochemistry of the Betsiboka Estuary (north-western Madagascar), *Organic Geochemistry*, 39, 1649–1658
 51. Delille B., A.V. Borges & D. Delille (2009) Influence of giant kelp beds (*Macrocystis pyrifera*) on diel cycles of pCO₂ and DIC in Sub-Antarctic coastal area, *Estuarine Coastal and Shelf Science*, 81, 114–122
 52. 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 Coasts*, 32:246-260
 53. Thomas H., L.-S. Schiettecatte, K. Suykens, Y.J.M. Koné, E. H. Shadwick, A.E.F. Prowe, Y. Bozec, H.J.W. de Baar & A. V. Borges (2009) Enhanced ocean carbon storage from anaerobic alkalinity generation in coastal sediments, *Biogeosciences*, 6, 1–8
 54. Gypens N., A.V. Borges & C. Lancelot (2009) A model study of the evolution during the past 50 years of air-sea CO₂ fluxes in the Belgian coastal zone (Southern Bight of the North Sea), *Global Change Biology*, 15(4), 1040-1056
 55. Thomas H., Y. Bozec, H. de Baar, K. Elkalay, M. Frankignoulle, W. Kühn, H. Lenhart, A. Moll, J. Pätsch, G. Radach, L.-S. Schiettecatte & A.V. Borges (2009) The North Sea, In: *Carbon and Nutrient Fluxes in Continental Margins* (Liu K.-K., L. Atkinson, R. Quinones & L. Talaue-McManus Eds), pp. 346-355, Springer

56. Álvarez-Salgado X.A., A.V. Borges, F.G. Figueiras & L. Chou (2009) Iberian Margin: The Rias, In: Carbon and Nutrient Fluxes in Continental Margins (Liu K.-K., L. Atkinson, R. Quinones & L. Talaue-McManus Eds), pp. 102-119, Springer
57. Chen C.T.A. & A.V. Borges (2009) Reconciling opposing views on carbon cycling in the coastal ocean: continental shelves as sinks and near-shore ecosystems as sources of atmospheric CO₂, *Deep-Sea Research II*, 56 (8-10), 578-590
58. Prowe F.A.E., H. Thomas, J. Pätsch, W. Kühn, Y. Bozec, L.-S. Schiettecatte, A.V. Borges & H.J.W. de Baar (2009) Mechanisms controlling the air-sea CO₂ flux in the North Sea, *Continental Shelf Research*, 29, 1801–1808
59. Bouillon S., G. Abril, A.V. Borges, F. Dehairs, G. Govers H. Hughes, R. Merckx, F.J.R. Meysman J. Nyunja, C. Osburn & J.J. Middelburg (2009) Distribution, origin and cycling of carbon in the Tana River (Kenya): a dry season basin-scale survey from headwaters to the delta, *Biogeosciences*, 6, 2475-2493
60. Borges A.V. & N. Gypens (2010) Carbonate chemistry responds more strongly to eutrophication than ocean acidification in the coastal zone, *Limnology and Oceanography*, 55, 346-353
61. Omar A.M., A. Olsen, T. Johannessen, M. Hoppema, H. Thomas & A.V. Borges (2010) Spatiotemporal variations of fCO₂ in the North Sea, *Ocean Science*, 6, 77–89
62. Laruelle G.G., H.H. Dürr, C.P. Slomp & A.V. Borges (2010) Evaluation of sinks and sources of CO₂ in the global coastal ocean using a spatially-explicit typology of estuaries and continental shelves, *Geophysical Research Letters*, 37, L15607, doi:10.1029/2010GL043691
63. Harlay J., A.V. Borges, C. Van Der Zee, B. Delille, R.H.M. Godoi, L.-S. Schiettecatte, N. Roevros, K. Aerts, P.-E. Lapernat, L. Rebreanu, S. Groom, 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
64. 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*, 100, 21-37
65. 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 Northwest European continental margin (northern Bay of Biscay), *Global Biogeochemical cycles*, 24, GB3022, doi:10.1029/2009GB003730
66. Kühn K, J. Pätsch, H. Thomas, A.V. Borges, L.-S. Schiettecatte, Y. Bozec & A. E. Friederike Prowe (in press) Nitrogen and carbon cycling in the North Sea and exchange with the North Atlantic - a model study Part II. Carbon budget and fluxes, *Continental Shelf Research*, 30(16), 1701-1716
67. Borges A.V. (2011) Present day carbon dioxide fluxes in the coastal ocean and possible feedbacks under global change, IN *Oceans and the atmospheric carbon content* P.M. da Silva Duarte & J.M. Santana Casiano), Chapter 3, pp. 47-77
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69. Gypens N., C. Lancelot, G. Lacroix & A.V. Borges (2011) Seasonal and inter-annual variability of air-sea CO₂ fluxes and seawater carbonate chemistry in the Southern North Sea, *Progress in Oceanography*, 88, 59–77.
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- **Grey Literature**

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2. Pacyna J.M., Bange H.W., Borges A., Frankignoulle M., Hov O., Mano S., Uher G. & R.C. Upstill-Goddard (2004) Paper on Coastal Ecosystem Greenhouse Gas budget, Report 5/2004, specific study 6, Carboeurope-GHG Concerted Action Synthesis of the European Greenhouse Gas budget (Eds. Sezzi E. & R. Valentini), 117 pp., Tipo-Lito Recchioni, Foligno, Italy
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5. Ruddick K., Y. Park, R. Astoreca, A. Borges, G. Lacroix, C. Lancelot, V. Rousseau (2008) Applications of the MERIS algal pigment products in Belgian waters, Proceedings of the 2nd MERIS ATSR workshop, Frascati, 22-26 September 2008, ESA Special Publication SP-666

- **Peer-reviews for the following journals :**

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- **Editorial activities**

- Associate editor of Estuaries and Coasts (2007-...)
- Associate editor of Biogeosciences (2008-2012)
- Co-editor with Helmuth Thomas of a special issue in *Biogeosciences* (2004) on "Coastal Biogeochemistry"
- Co-editor with Rik Wanninkhof of a special issue in *Journal of Marine Systems* (2007, vol. 66(1-4)) on "Gas Transfer At Water Surfaces"

- **Involvement in international meetings**

- Co-convener of session "Coastal biogeochemistry and its response to anthropogenic perturbations: inputs, gas exchange, carbon and nutrient cycling", European Geosciences Union, 1st General Assembly, Nice, France, 25 - 30 April 2004.
- Co-convener of session "Coastal biogeochemistry and its response to anthropogenic perturbations: inputs, gas exchange, carbon and nutrient cycling", European Geosciences Union, General Assembly, Vienna, Austria, 24 - 29 April 2005.
- Local organizer and member of the steering committee of the 37th International Liège Colloquium on Ocean Dynamics on "Gas transfer at water surfaces", 2-6 May 2005.
- Co-convener of session "Coastal biogeochemistry and its response to anthropogenic perturbations: inputs, gas exchange, carbon and nutrient cycling", European Geosciences Union, General Assembly, Vienna, Austria, 02 - 07 April 2006.
- Co-convener of session "Biogeochemistry of coastal seas and continental shelves", European Geosciences Union, General Assembly, Vienna, Austria, 15 - 20 April 2007.
- Co-convener of session "Biogeochemistry of coastal seas and continental shelves", European Geosciences Union, General Assembly, Vienna, Austria, 13 - 18 April 2008.
- Co-convener of session "Biogeochemistry of coastal seas and continental shelves", European Geosciences Union, General Assembly, Vienna, Austria, 19 - 24 April 2009.
- Co-convener of session "Biogeochemistry of coastal seas and continental shelves", European Geosciences Union, General Assembly, Vienna, Austria, 2 - 7 May 2010.
- Member of Scientific Advisory Committee of The 6th International Symposium on Gas Transfer at Water Surfaces, Kyoto, Japan, May 17-21 2010.
- Co-convener of session "Biogeochemistry of coastal seas and continental shelves - including Biogeochemistry during the International Polar Year 2007-2008", European Geosciences Union, General Assembly, Vienna, Austria, 3 - 8 April 2011.

- **Communications at international meetings**

1. Borges A.V. & M. Frankignoulle, Macro-scale variations of pCO₂ distribution along the Belgium coast, European Geophysical Society XXII General Assembly, Vienna, Austria, 21-25 April 1997, oral presentation
2. Frankignoulle M. et al., Biogas transfer in Estuaries, ELOISE scientific meeting, Arcachon, France, 21-23 May 1997, oral presentation

3. Frankignoulle M. et al., Biogas transfer in Estuaries, Third Marine Science and Ocean Technology Conference, Lisbon, Portugal, 23-27 May 1998, oral presentation
4. Jørgensen H.E., Larsen S.E., Keld J.F., Borges A. & M. Frankignoulle, Effects of from the chemistry on the air-sea exchange coefficient of CO₂, EGS XXV General Assembly, Nice, France, 25-29 April 2000, oral presentation
5. Frankignoulle M. et al., Biogas transfer in Estuaries, ELOISE scientific meeting, Huelva, Spain, 30 September - 3 October 1998, oral presentation
6. Borges A.V., Keir R., Larsen S.E., Jørgensen, H.E. & M. Frankignoulle, Dynamics of inorganic carbon in surface waters off the Galician coast, 32nd International Liège Colloquium on Ocean Hydrodynamics, Liège, Belgium, 8-12 May 2000, oral presentation
7. Borges A.V. & M. Frankignoulle, Surface pCO₂ off the Galician coast: an overview of data obtained during the OMEX project, 32nd International Liège Colloquium on Ocean Hydrodynamics, Liège, Belgium, 8-12 May 2000, poster
8. Alvarez Salgado X.A , F.F. Pérez, F.G. Figueiras, C.G. Castro, A. Borges, G. Moncoiffe, A.E.J. Miller, M. Frankignoulle & G. Savidge, Thermohaline, Chemical and Biological Characterisation of the poleward flowing slope current off the NW Iberian Upwelling System, 32nd International Liège Colloquium on Ocean Hydrodynamics, Liège, Belgium, 8-12 May 2000, poster
9. Alvarez Salgado X.A , M.D. Doval, A.V. Borges, I. Joint, M. Frankignoulle, M. Woodward & F.G. Figueiras, Off-shelf export of dissolved organic matter by an upwelling filament off NW Spain, 32nd International Liège Colloquium on Ocean Hydrodynamics, Liège, Belgium, 8-12 May 2000, poster
10. Jørgensen H. E., A.V. Borges, R. Keir, M. Frankignoulle & S.E. Larsen, Estimates of CO₂ flux across the air-water interface off the Iberian coast, 32nd International Liège Colloquium on Ocean Hydrodynamics, Liège, Belgium, 8-12 May 2000, poster
11. Borges A.V. & M. Frankignoulle, Surface pCO₂ off the Galician coast: an overview of data obtained during the OMEX project, EuroOcean 2000 - The European Conference on Marine Science and Ocean Technology, Hamburg, Germany, 29 August - 2 September 2000, poster
12. Álvarez-Salgado, X. A., M.D. Doval, A. Borges, I. Joint, M. Frankignoulle, E.M.S. Woodward & F.G. Figueiras, Off-shelf fluxes of dissolved organic matter by an upwelling filament off NW Spain, EuroOcean 2000 - The European Conference on Marine Science and Ocean Technology, Hamburg, Germany, 29 August - 2 September 2000, poster
13. Frankignoulle M. & A.V. Borges, Direct and indirect pCO₂ measurements in oceanic and coastal waters, Core Research for Evolution Science and Technology International Symposium on CO₂ dynamics in Coral reefs and Coastal Zones, Tokyo, Japan, 25 January 2002, oral presentation
14. Frankignoulle M. & A.V. Borges, Atmospheric CO₂ exchanges in coastal ecosystems, Core Research for Evolution Science and Technology International Symposium on CO₂ dynamics in Coral reefs and Coastal Zones, Tokyo, Japan, 25 January 2002, oral presentation
15. Borges A.V. & M. Frankignoulle, Spatio-temporal variability and air-sea exchanges of carbon dioxide in three European ecosystems, European Geophysical Society XXVII General Assembly, Nice, France, 21-26 April 2002, oral presentation
16. Jørgensen H. E., S.E. Larsen, A. Borges & M. Frankignoulle, An analytical model of the influence of water chemistry on the air-sea exchange coefficient of CO₂, 15th Conference on Boundary Layer and Turbulence, American Meteorological Society, Wageningen, The Netherlands, 15-19 July 2002, oral presentation
17. Borges A.V. & M. Frankignoulle, Atmospheric CO₂ exchanges over the European Continental Shelf, Royal Netherlands Chemical Society annual meeting, Den Haag, Netherlands, 19 September 2002, invited oral presentation
18. Borges A.V. & M. Frankignoulle, Dissolved inorganic carbon dynamics and CO₂ atmospheric exchanges in the inner and outer Scheldt estuary, European Community Studies Association Local meeting, Atwerpen, Belgium, 7-10 October 2002, invited oral presentation
19. Thomas H., Bozec Y., Borges A.V., Frankignoulle M., Lenhart H., Moll A., Nagel K., Paetsch J., Pempkowiak J. & F. Wulff, CO₂ supply from the North Sea and the Baltic Sea to the North Atlantic Ocean - evidence for the continental shelf pump, American Geophysical Union Fall meeting, San Francisco, USA, 6-10 December 2002, oral presentation
20. Borges A.V., B. Delille & M. Frankignoulle, CO₂ emission from mangroves= surrounding waters, Gas Exchange: on Land, at Sea and in the Air, Symposium in the context of SOLAS of IGBP/SCOR, Koninklijke Nederlandse Akademie van Wetenschappen, Amsterdam, The Netherlands, 13 March 2003, poster
21. Borges A.V., B. Delille & M. Frankignoulle, CO₂ emission from mangroves' surrounding waters, European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, poster
22. Schiettecatte L.S., H. Thomas, A.V. Borges & M. Frankignoulle, Normalized Total Alkalinity as a tracer of the surface coastal seawater masses of the North Sea, European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, poster
23. Delille B., J. Harlay, I. Zondervan, S. Jacquet, L. Chou, R. Wollast, A.V. Borges, M. Frankignoulle, U. Riebesell & J.-P. Gattuso, Organic and inorganic production of coccolithoporids *Emiliania huxleyi* under different atmospheric pCO₂ during a mesocosm experiment, European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, oral presentation
24. Thomas H. & the CANOBA team, Operational modes of the continental shelf pump: evidence from carbon and nutrient budgets in the North Sea and the Baltic Sea, European Geophysical Society / American

- Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, oral presentation
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 26. Bouillon S., N. Koedam, A.V. Borges, M. Frankignoulle & F. Dehairs, Carbon dynamics in mangrove ecosystems: interactions between intertidal and adjacent aquatic habitats , European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, oral presentation
 27. Thomas H., W. Kühn, H. Lenhart, A. Moll, J. Pätsch, G. Radach, A. Borges, M. Frankignoulle, L.-S. Schiettecatte, Y. Bozec, H. de Baar, K. Elkalay, J. Pempkowiak, K. Negel & F. Wulff, Operational modes of the continental shelf pump: evidence from carbon budgets in the North Sea and the Baltic sea , European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6-11 April 2003, poster
 28. Jørgensen H. E., Larsen, S. E. Sorensen L. L., Borges A. V. & M. Frankignoulle, Importance of sampling depth for estimates of the CO₂ flux across air water interface. European Geophysical Society / American Geophysical Union / European Geosciences Union, Nice, France, 6 11 April 2003, poster
 29. Shimoni M., M. Archoy, D. Sirjacobs, S. Djenidi, A.V. Borges, M. Frankignoulle, L. Chou & W. Vyvermans. Airborne hyperspectral potential for coastal biogeochemistry of the Scheldt estuary and plume, EARSel Special interest group, Workshop Remote Sensing of the Coastal Zone, Ghent, Belgium, 5-7 June 2003, oral presentation
 30. Frankignoulle M., B. Delille & A. V. Borges, Ocean as a source or sink for CO₂, Specific Study on Coastal Ecosystem GHG Budget, Gdansk, Poland, 3-4 July 2003, oral presentation
 31. Frankignoulle M., B. Delille & A. V. Borges, Trace gas budget in the coastal ocean, EU CarboEurope meeting, Specific Study on Coastal Ecosystem GHG Budget, Gdansk, Poland, 3-4 July 2003, oral presentation
 32. Frankignoulle M., B. Delille & A. V. Borges, Future research needs (measurements), EU CarboEurope meeting, Specific Study on Coastal Ecosystem GHG Budget, Gdansk, Poland, 3-4 July 2003, oral presentation
 33. Gazeau, F., A. V. Borges, L. S. Schiettecatte, J. Middelburg, M. Frankignoulle & J. P. Gattuso, Pelagic metabolism of the Scheldt estuary measured by the oxygen method on an annual cycle, VLIZ Young Scientists' Day 2004, Brugge, Belgium, 5 March 2004, poster
 34. Delille B., A.J. Trevena, D. Lannuzel, M. L. Sauvée, B. Tilbrook, M. Frankignoulle, A.V. Borges & J. L. Tison, CO₂ transfer at the ice sea and air ice interfaces : a step towards the end of a long lived dogma ?, VLIZ Young Scientists' Day 2004, Brugge, Belgium, 5 March 2004, poster
 35. Schiettecatte L.S., M. Frankignoulle, L. Chou & A.V. Borges, Dissolved inorganic carbon cycle in the maximum turbidity zone of the upper Scheldt estuary, VLIZ Young Scientists' Day 2004, Brugge, Belgium, 5 March 2004, poster
 36. N. Gypens, A.V. Borges & C. Lancelot Mechanisms controlling the air sea exchanges of CO₂ in the eutrophicated coastal waters of the Southern Bight of the North Sea: a modelling study, European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, poster
 37. Borges A.V., F. Gazeau, J.-P. Gattuso, B. Delille , C. Barron, C.M. Duarte & M. Frankignoulle, DIC dynamics in the Bay of Palma (NW Mediterranean), European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, poster
 38. Borges A.V., M. Frankignoulle, B. Delille & S. Bouillon, DIC dynamics in a tropical estuary (Kiddogoweni, Kenya), European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, poster
 39. Borges A.V., CO₂ fluxes in the coastal ocean : a short synthesis, European Geosciences Union, 1st General Assembly, Nice, France, 25 30 April 2004, invited oral presentation (EGU Outstanding Young Scientist Award)
 40. Gazeau F., A. V. Borges, L. S. Schiettecatte, J. Middelburg, M. Frankignoulle & J. P. Gattuso, Pelagic metabolism of the Scheldt estuary measured by the oxygen method on an annual scale, European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, poster
 41. Delille B., A.J. Trevena, D. Lannuzel, M. L. Sauvée, B. Tilbrook, V. Lytle, M. Frankignoulle, A.V. Borges & J. L. Tison, Carbon dioxide dynamics in the Antarctic pack ice and transfer at ice sea and air ice interfaces, European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, oral presentation
 42. Schiettecatte L.S., M. Frankignoulle, L. Chou & A.V. Borges, DIC dynamics in the upper Scheldt estuary, European Geosciences Union, 1st General Assembly, Nice, France, 25-30 April 2004, poster
 43. Schiettecatte L.S., A.V. Borges & M. Frankignoulle, Dynamic of dissolved inorganic carbon in the maximum turbidity zone of the upper Scheldt estuary, 36th International Liège Colloquium on Ocean Dynamics, Marine Environmental Monitoring and Predictions ,3-7 May 2004, Liège, Belgium, poster
 44. Delille, B., J. Harlay, I. Zondervan, L. Chou, R. Wollast, A.V. Borges, M. Frankignoulle, U. Riebesell & J. P. Gattuso, Delayed and reduced coccolithophorid calcification under elevated PCO₂, The Ocean in a High CO₂ World, An International Science Symposium, UNESCO, 10-12 May 2004, Paris, France
 45. Frankignoulle M., Borges A.V., Gazeau F., Delille B., Schiettecatte L.S., Gattuso J. P., Rochelle Newall E.J., Gonzalez N., Bonilla Findji O., Pizay M.D., Wollast R., Vandenberght J.P., Chou L., Loijens M., Fölmer I., Middelburg J.J., Van den Meersche K., Boschker B., Veuger H.T.S., Duarte C.M., Barron C., Navarro N., Iversen N., Elliot M., Hemingway K.L., Burdon D., Campuzano Guillen F.J. & J. Allen, Nutrients Cycling and the Tropic Status of Coastal Ecosystems B (EUROTROPH), EUROCEAN 2004, European Conference on Marine Science & Ocean Technology, Galway, Ireland, 10-13 May 2004, poster
 46. Delille, B., J. Harlay, I. Zondervan, L. Chou, R. Wollast, A.V. Borges, M. Frankignoulle, U. Riebesell & J. P.

- Gattuso, Delayed and reduced coccolithophorid calcification under elevated PCO₂, The Ocean in a High CO₂ World, An International Science Symposium, UNESCO, 10-12 May 2004, Paris, France
47. Pätsch, J., W. Kühn, A.V. Borges, Y. Bozec, A. Moll, T. Pohlmann, L.-S. Schiettecatte, H. Thomas. The influence of the NAO on the biogeochemistry of the Northwest European shelf B results of a modelling study, CLIVAR Workshop on North Atlantic Thermohaline Circulation Variability, 13-16 September 2004, Kiel, Germany, poster
 48. Borges A.V., B. Delille, V. Schoemann & M. Frankignoulle. Do we have enough pieces of the jigsaw to integrate CO₂ fluxes in the Coastal Ocean ?, SOLAS open science conference, 13-16 October 2004, Halifax, Canada, poster
 49. Delille, B., J. L. Tison, A.J. Trevena, V. Schoemann, D. Lannuzel, M. L. Sauvée, B. Tilbrook, V. Lytle, M. Frankignoulle, A.V. Borges & C. Lancelot, Carbon Dioxide Dynamics in Antarctic Pack Ice and Transfer at the Ice Sea and Air Ice Interface, SOLAS open science conference, 13-16 October 2004, Halifax, Canada, poster
 50. Borges, A.V., Gas transfer velocity in estuaries and the global significance of CO₂ emissions from estuaries, CARBOEUROPE: Freshwaters Workshop "Lateral versus vertical carbon flows through freshwaters", 5-8 December 2004, Paris, France, solicited oral presentation
 51. Rochelle Newall, E. J., C. Barron, A.V. Borges, C.M. Duarte, M. Frankignoulle, F. Gazeau, J.J. Middelburg, M.-D. Pizay, J. Thioulouse & J. P. Gattuso, Community metabolism in three contrasting coastal ecosystems, ASLO 2005 Aquatic Sciences Meeting, 20-25 February 2005, Salt Lake City, Utah, USA, oral presentation
 52. Delille B., A.J. Trevena, V. Schoemann, C. Lancelot, D. Lannuzel, M. L. Sauvée, J. De Jong, B. Tilbrook, V. Lytle, D. Delille, M. Frankignoulle, A.V. Borges & J. L. Tison, Carbon Dioxide Dynamics and related Air Ice fluxes in Antarctic Sea Ice, Gordon Research Conference on Polar Marine Science, 13-18 March 2005, Ventura, USA., poster
 53. Bouillon S., F. Dehairs & A.V. Borges, Biogeochemistry in the Tana estuary and delta (Northern Kenya), European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 54. Bouillon S., F. Dehairs, G. Abril & A.V. Borges, Distribution and sources of organic carbon in a mangrove seagrass ecosystem (Gazi Bay, Kenya), European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 55. Thomas H., Y. Bozec, K. Elkalay, R. Heerdink, P. Ruardij, H.J.W. deBaar, L. S. Schiettecatte & A.V. Borges, Variability of the CO₂ air sea fluxes in the North Sea, European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 56. Bozec Y., H. Thomas, L. S. Schiettecatte, A.V. Borges, K. Elkalay & H.J.W. De Baar, Processes controlling the net carbon consumption of inorganic carbon in the North Sea, European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 57. Schiettecatte L. S., F. Gazeau, M. Frankignoulle & A.V. Borges, Four years of dissolved inorganic carbon dynamics along the Belgian coast, European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 58. Borges A.V., Y.M. Kone, L. S. Schiettecatte, B. Delille, M. Frankignoulle & S. Bouillon, Preliminary results on the biogeochemistry in the Mekong estuary and delta (Vietnam), European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 59. Rochelle Newall, E. J., C. Barron, A.V. Borges, C.M. Duarte, M. Frankignoulle, F. Gazeau, J.J. Middelburg, M.-D. Pizay, J. Thioulouse & J. P. Gattuso, Community metabolism in three contrasting coastal ecosystems, European Geosciences Union General Assembly, 24-29 April 2005, Vienna, Austria
 60. Gypens N., C. Lancelot & A.V. Borges, Mechanisms controlling the air sea exchanges of CO₂ in the eutrophied coastal waters of the Southern Bight of the North sea: a modelling study, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, oral presentation
 61. Schiettecatte L. S., F. Gazeau, M. Frankignoulle & A.V. Borges, CO₂ air -sea exchange and NEP in the Scheldt plume (Belgian coast) over 4 years, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, oral presentation
 62. Elkalay K., H. Thomas, Y. Bozec, A.V. Borges, L. S. Schiettecatte, R. Heerdink, P. Ruardij & H. de Baar, Biogeochemical 1D ERSEM ecosystem model applied to recent carbon dioxide and nutrient data in the North Sea, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, poster
 63. Delille B., A.J. Trevena, V. Schoemann, C. Lancelot, D. Lannuzel, M. L. Sauvée, J. de Jong, B. Tilbrook, M. Frankignoulle, A.V. Borges & J. L. Tison, Carbon dioxide dynamics in Antarctic pack ice and related air ice CO₂ fluxes, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, oral presentation
 64. Harlay J., C. van der Zee, L. S. Schiettecatte, N. Roevros, L. Rebreaun, P. E. Lapernat, A.V. Borges & L. Chou, Dissolved Inorganic Carbon dynamics in the northern Bay of Biscay during a Coccolithophore bloom, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, poster
 65. Gazeau F., J. P. Gattuso, M. Frankignoulle, B. Delille & A.V. Borges, Gas Transfer Velocity as a critical variable in coastal ecosystem metabolism studies, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, poster
 66. Borges A.V., J. P. Vanderborcht, L. S. Schiettecatte, F. Gazeau, S. Ferrón Smith, B. Delille & M. Frankignoulle, Variability of the gas transfer velocity of CO₂ in a macrotidal estuary (The Scheldt), XXXVII

- International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, poster
67. Borges A.V., Diversity of Ecosystems and Coastal Ocean CO₂ Fluxes, XXXVII International Liège Colloquium on Ocean Dynamics, Gas Transfer At Water Surfaces, 2-6 May 2005, Liège, Belgium, oral presentation
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