

GWENAËL ABRIL – PUBLICATIONS – AOUT 2024

(*étudiant encadré ou co-encadré)

Submitted

- [127]. Araujo O.O., Salvador D.E.C.; Vidal L.O., Cotovicz J. L.C., **Abril G.**, Rezende C.E., Thompson C.C., Thompson F.L., Tschoeke D.A., Garcia G.D. Insights into the water microbiome dynamics of a large tropical estuary transition. *Science of the Total Environment*. Submitted August 2024
- [126]. Diamond J.S., Nguyen A.T., **Abril G.**, Bertuzzo E., Moatar F. Inorganic carbon dynamics and their relation to autotrophic community regime shift over three decades in a large, alkaline river. *Limnology and Oceanography*. Submitted May 2024.
- [125]. Nguyen A.T., **Abril G.**, Diamond J.S., Lamouroux R., Martinet C. and Moatar F. Multidecadal trends in CO₂ evasion and aquatic metabolism in a large temperate river. *Global Change Biology*. In revision July 2024
- [124]. Chynel M.*, **Abril G.**, Narayansamy M.*, Deirmendjian L., Guérin F., Dromard C. and Meziane T. Sargassum beaching on mangrove sediments shift microbial and crabs metabolisms and enhances blue carbon storage *Limnology and Oceanography*. Revised and resubmitted July 2024.
-

2024

- [123]. Miranda F.A.V.*, Moser G.A.O., Lima D.T., Machado W.T.V., Brandini N., Fernandes A.M. and **Abril G.** (2024) Phytoplankton functional diversity across a coastal urbanization and eutrophication gradient: the Sepetiba bay - Ilha Grande bay continuum in Rio de Janeiro. *Marine Ecology*. In press.
- [122]. Chielle R.*, Meziane T., Rezende C.E., Cotovicz Jr L.C. **Abril G.** and Marins R.V. Fatty acids and Stable Isotopes distribution in the mangrove dominated Parnaíba River Delta. *Estuarine, Coastal and Shelf Science*. In press.
- [121]. Cotovicz Jr. L.C., **Abril G.**, Sanders C., Tait D., Maher T.D., Sippo J.Z., Holloway C., Yau Y. and Santos I.R. (2024) Methane oxidation minimizes emissions and offsets to carbon burial in mangroves. *Nature Climate Change*. <https://doi.org/10.1038/s41558-024-01927-1>
- [120]. Lønborg C., Carreira C., **Abril G.**, et al. (2024) A global database of dissolved organic matter (DOM) measurements in coastal waters (CoastDOM v1). *Earth System Science Data* 16, 1107–1119. <https://doi.org/10.5194/essd-16-1107-2024>
- [119]. Nascimento S.G.*, Oliveira G.B., Matos C.R.L., Metzger E., Sanders C.J., Marotta H., Díaz R., **Abril G.** and Machado W. (2024) Phosphate buffering in mangrove sediment pore water under eutrophication and deforestation influences. *Marine Pollution Bulletin* 116130. <https://doi.org/10.1016/j.marpolbul.2024.116130>.
- [118]. Yau Y.Y.Y., Cabral A., Reithmaier G., Cotovicz Jr L.C., Barreira J., **Abril G.**, Morana C., Borges A.V., Machado W., Bonaglia S., Godoy J.M., Santos I.R. (2024) Efficient oxidation attenuates porewater-derived methane fluxes in mangroves. *Limnology and Oceanography*. <https://doi.org/10.1002/lno.12639>
-

2023

- [117]. Vidal L.O., Lambert T., Cotovicz Jr. L.C., Bernardes, M.C., Sobrinho R., Thompson F., Garcia, G.D., Knoppers, B.A., Gatts P., Régis, C. R., **Abril G.**, Rezende C.E. (2023) Seasonal and diel modulation of DOM in a mangrove dominated estuary. *Science of the Total Environment* 159045, <https://doi.org/10.1016/j.scitotenv.2022.159045>.
-

2022

- [116]. **Abril G.**, Cotovicz Jr L.C*, Nepomuceno A.M., Erbas T.*, Costa S., Ramos V.V., Moser G., Fernandes A., Negri E., Knoppers B.A., Brandini N., Machado W., Bernardes M., Vantrepotte V. (2022) Spreading eutrophication and changing CO₂ fluxes in the tropical coastal ocean: a few lessons from Rio de Janeiro. *Arquivos de Ciências do Mar*, 55: 461-476, <https://doi.org/10.32360/acmar.v55iEspecial.78518>
- [115]. Barroso G.C.*, **Abril G.**, Machado W., Abuchacra R., Peixoto R.B., Bernardes M.C., Marques G.S., Sanders C., Oliveira G.B., Oliveira Filho S.R., and Marotta H. (2022) Linking eutrophication to carbon dioxide and methane emissions from exposed mangrove soils along an urban gradient. *Science of the Total Environment* 850, <https://doi.org/10.1016/j.scitotenv.2022.157988>.
- [114]. Charbonnier C., Anschutz P., **Abril G.**, Mucci A., Deirmendjian L.*, Poirier D., Bujan S., and Lecroart P. (2022) Carbon dynamics driven by seawater recirculation and groundwater discharge along a forest-dune-beach continuum of a high-energy meso-macro-tidal sandy coast. *Geochimica et Cosmochimica Acta*. 317, 18-38. <https://doi.org/10.1016/j.gca.2021.10.021>
- [113]. Chynel M.*, Rockomanovic S., **Abril G.**, Barroso G., Marotta H., Machado W., Sanders C.J., Thiney N. and Meziane T. (2022) Contrasting organic matter composition in pristine and eutrophicated mangroves revealed by fatty acids

and stable isotopes (Rio de Janeiro, Brazil). *Estuarine Coastal and Shelf Science*. <https://doi.org/10.1016/j.ecss.2022.108061>.

[112]. Cotovicz Jr. L.C.*, Marins R.V. and **Abril G.** (2022) Coastal Ocean acidification in Brazil: a brief overview and perspectives. *Arquivos de Ciências do Mar* 55: 345 – 368 <https://doi.org/10.32360/acmar.v55iEspecial.78514>

[111]. Polsenaere P.*, Delille B., Poirier D., Charbonnier C., Deborde J.*, Mouret A. and **Abril G.** (2022) Seasonal, diurnal and tidal variations of dissolved inorganic carbon and pCO₂ in surface waters of a temperate coastal lagoon (Arcachon, SW France). *Estuaries and Coasts*, <https://doi.org/10.1007/s12237-022-01121-6>.

2021

[110]. **Abril G.**, Libardoni B.G.*, Brandini N., Cotovicz Jr. L.C.*, Medeiros P.R.P., Cavalcante G.H., and Knoppers B.A. (2021) Thermodynamic uptake of atmospheric CO₂ in the oligotrophic and semiarid São Francisco estuary (NE Brazil). *Marine Chemistry* 233, <https://doi.org/10.1016/j.marchem.2021.103983>

[109]. Bragança D., Oliveira F., Macario K., Nunes V., Muniz M., Lamego F., **Abril G.**, Nepomuceno A., Solís C., Rodríguez-Ceja M. (2021) Establishing water samples protocols for radiocarbon analysis at LAC-UFF, Brazil. *Radiocarbon*. <https://doi.org/10.1017/RDC.2021.1>

[108]. Cotovicz Jr. L.C.*, Knoppers B.A., Régis C.R., Tremmel D., Costa-Santos S. and **Abril G.** (2021) Eutrophication overcoming carbonate precipitation in a tropical hypersaline coastal lagoon acting as a CO₂ sink (Araruama Lagoon, SE Brazil). *Biogeochemistry* 156, 231–254 <https://doi.org/10.1007/s10533-021-00842-3>.

[107]. Cotovicz Jr. L.C.*, Ribeiro R.P., Régis C.R., Bernardes M.C., Sobrinho R., Vidal L.O., Tremmel D., Knoppers B.A., and **Abril G.** (2021) Greenhouse gases emissions (CO₂ and CH₄) and inorganic carbon behaviour in an urban highly-polluted tropical coastal lagoon (SE Brazil). *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-13362-2>.

[106]. Erbas T.*, Marques Jr A. N., and **Abril G.** (2021) A CO₂ sink in a tropical coastal lagoon impacted by cultural eutrophication and upwelling. *Estuarine Coastal and Shelf Science*. <https://doi.org/10.1016/j.ecss.2021.107633>.

[105]. Nascimento S. G., Brandini N., Diaz R., **Abril G.** and Machado W. (2021) Threatened Marine Protected Areas in Guanabara Bay, Brazil. In: James A. Scott (Ed.) *Protected Areas: Management, Benefits and Social Impacts*. Nova Science Publisher 329-355. ISBN: 978-1-53619-276-6.

2020

[104]. Cotovicz Jr. L.C.*, Vidal L., Rezende C.E., Bernardes M.C., Knoppers B.A., Sobrinho R., Cardoso R.P., Muniz M., Meigikos R.A., Biehler A. and **Abril G.** (2020) Carbon dioxide sources and sinks in the delta of the Paraíba do Sul River (Southeastern Brazil) modulated by carbonate thermodynamics, gas exchange and ecosystem metabolism during estuarine mixing. *Marine Chemistry*. <https://doi.org/10.1016/j.marchem.2020.103869>.

[103]. Guilhen J., Al-Bitar A., Sauvage S., Parrens M., Martinez J.-M., **Abril G.**, Moreira-Turcq P., Sanchez-Perez J.-M. (2020) Denitrification and associated nitrous oxide and carbon dioxide emissions from the Amazonian wetlands. *Biogeosciences* <https://doi.org/10.5194/bg-17-4297-2020>

2019

[102]. **Abril G.** and Borges A.V. (2019) Ideas and perspectives: Carbon leaks from flooded land: do we need to replumb the inland water active pipe? *Biogeosciences* 16: 769–784. <https://doi.org/10.5194/bg-16-769-2019>

[101]. Anschutz P., Bouchet S., **Abril G.**, Tessier E., Bridou R., Amouroux D. (2019) In vitro simulation of oscillatory redox conditions in intertidal sediments: N, Mn, Fe, and P coupling. *Continental Shelf Research* 177: 33-41. <https://doi.org/10.1016/j.csr.2019.03.007>

[100]. Cotovicz Jr. L.C.*, Knoppers B., Deirmendjian L.*, and **Abril G.** (2019) Sources and sinks of dissolved inorganic carbon in an urban tropical coastal bay revealed by δ¹³C-DIC signals. *Estuarine Coastal and Shelf Science* 220: 185–195. <https://doi.org/10.1016/j.ecss.2019.02.048>

[99]. Deirmendjian L.*, Anschutz P., Morel C., Mollier A., Augusto L., Loustau D., Cotovicz Jr L.C.*, Lajaunie-Salla K.*, Chaillou, G., Buquet D., Charbonnier C., Poirier D. and **Abril G.** (2019) Importance of the vegetation-groundwater-stream continuum to understand transformation of biogenic carbon in aquatic systems - a case study based on a pine-maize comparison in a lowland sandy watershed (Landes de Gascogne, SW France). *Science of the Total Environment* 661: 613–629. <https://doi.org/10.1016/j.scitotenv.2019.01.152>

[98]. Grasset C., **Abril G.**, Mendonça R., Roland F., and Sobek S. (2019) The transformation of macrophyte-derived organic matter to methane relates to plant water and nutrient contents. *Limnology and Oceanography*, doi:10.1002/lno.11148. <https://doi.org/10.1002/lno.11148>

[97]. Lajaunie-Salla K.*, Sottolichio A., Schmidt S., Litrico X., Binet G., and **Abril G.** (2019) Comparing the efficiency of hypoxia mitigation strategies in an urban, turbid tidal river, using a coupled hydro sedimentary biogeochemical model. *Natural Hazards and Earth Systems Sciences* 19, 2551–2564. <https://doi.org/10.5194/nhess-19-2551-2019>

2018

- [96]. Albéric P., Pérez M.A.P., Moreira-Turcq P., Benedetti M., Bouillon S. and **Abril G.** (2018) Variation of dissolved organic carbon isotopic composition during the runoff cycle in the Amazon River and floodplains. *CR Geoscience*. 350: 65-75. <https://doi.org/10.1016/j.crte.2017.11.001>
- [95]. Borges A.V., **Abril G.** and Bouillon S. (2018) Carbon dynamics and CO₂ and CH₄ outgassing in the Mekong Delta. *Biogeosciences* 15: 1093-1114. <https://doi.org/10.5194/bg-15-1093-2018>
- [94]. Cotovicz Jr. L.C.* Knoppers B., Brandini N., Costa S.S.J. and **Abril G.** (2018) Aragonite saturation state in a tropical coastal embayment dominated by phytoplankton blooms (Guanabara Bay - Brazil). *Marine Pollution Bulletin* 129: 729-739. <https://doi.org/10.1016/j.marpolbul.2017.10.064>
- [93]. Cotovicz Jr. L.C.* Knoppers B., Brandini N., Poirier D., Costa S.S.J. and **Abril G.** (2018) Predominance of phytoplankton-derived dissolved and particulate organic carbon in a highly eutrophic tropical coastal embayment (Guanabara Bay, Rio de Janeiro, Brazil). *Biogeochemistry* 137: 1–14 <https://doi.org/10.1007/s10533-017-0405-y>
- [92]. Deirmendjian L.* and **Abril G.** (2018) Carbon dioxide degassing at the groundwater-stream-atmosphere interface: isotopic equilibration and hydrological mass balance in a sandy watershed. *Journal of Hydrology* 558: 129-143. <https://doi.org/10.1016/j.jhydrol.2018.01.003>
- [91]. Deirmendjian L.* Loustau D., Augusto L., Lafont S., Chipeaux C., Poirier D., and **Abril G.** (2018) Hydro-ecological controls on dissolved carbon dynamics in groundwater and export to streams in a temperate pine forest. *Biogeosciences* 15: 669–691. <https://doi.org/10.5194/bg-15-669-2018>
- [90]. Gaillardet J., Braud I., Hankard F., Anquetin S., Bour O., Dorfliger N., de Dreuzy J.R., Galle S., Galy C., Gogo S., Gourcy L., Habets F., Laggoun F., Longuevergne L., Le Borgne T., Naaim-Bouvet F., Nord G., Simonneaux V., Six D., Tallec T., Valentin C., **Abril G.**, et al. (2018) OZCAR: the French network of Critical Zone Observatories. *Vadose Zone Journal* 17:180067. <https://doi.org/10.2136/vzj2018.04.0067>
- [89]. Lajaunie-Salla K.* Sottolichio A., Schmidt S., Litrico X., Binet G., and **Abril G.** (2018) Future intensification of summer hypoxia in the Tidal Garonne River (SW France) simulated by a coupled hydro-sedimentary-biogeochemical model. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-018-3035-6>
- [88]. Ribaudo C., Tison-Rosebery J., Buquet D., Jan G., Jamoneau A., **Abril G.**, Anschutz P., and Bertrin V. (2018) Invasive Aquatic Plants as Ecosystem Engineers in an Oligo-Mesotrophic Shallow Lake. *Frontiers in Plant Science*, 9:1781. <https://doi.org/10.3389/fpls.2018.01781>
-

2017

- [87]. Lajaunie-Salla K.* Wild-Allen K., Sottolichio A., Thouvenin B., Litrico X., and **Abril G.** (2017) Impact of urban effluents on summer hypoxia in the highly turbid Gironde estuary, applying a 3D model coupling hydrodynamics, sediment transport and biogeochemical processes. *Journal of Marine Systems*. <https://doi.org/10.1016/j.jmarsys.2017.05.009>.

2016

- [86]. Cotovicz Jr L.C.* Libardoni B.G.* Brandini N. Knoppers B.A. and **Abril G.** (2016) Comparações entre medições em tempo real da pCO₂ aquática com estimativas indiretas em dois estuários tropicais contrastantes: o estuário eutrofizado da baía de Guanabara (RJ) e o estuário oligotrófico do rio São Francisco (AL). *Química Nova*. 39: 1206-1214. <https://doi.org/10.21577/0100-4042.20160145>.
- [85]. Cotovicz Jr L.C.* Knoppers B.A., Brandini N., Poirier D., Da Costa S.S.J.* and **Abril G.** (2016) Spatio-temporal variability of methane concentrations and diffusive fluxes from a tropical coastal embayment surrounded by a large urban area (Guanabara Bay, Rio de Janeiro, Brazil). *Limnology and Oceanography* 61: S238–S252. <https://doi.org/10.1002/limo.10298>
- [84]. Grasset C., **Abril G.**, Guillard L., Delolme C., and Bornette G. (2016) Carbon emission along a eutrophication gradient in temperate riverine wetlands: effect of primary productivity and plant community composition. *Freshwater Biology*. <https://doi.org/10.1111/fwb.12780>.
- [83]. Jézéquel D., Michard G., Viollier E., Agrinier P., Albéric P., Lopes F., **Abril G.**, and Bergonzini L. (2016). Carbon Cycle in a Meromictic Crater Lake: Lake Pavin, France. Pp 185-203 in T. Sime-Ngando et al. (eds.), *Lake Pavin*, Springer https://doi.org/10.1007/978-3-319-39961-4_11.
- [82]. Mortillaro J. M.* Passarelli C., **Abril G.**, Hubas C., Albéric P. Artigas L.F., Benedetti M., Thiney N., Moreira-Turcq P., Pérez M.A.P., Vidal L., and Meziane T. (2016) The fate of C4 and C3 macrophyte carbon in Amazon floodplain waters: insights from a batch experiment. *Limnologica - Ecology and Management of Inland Waters* 59: 90–98. <https://doi.org/10.1016/j.limno.2016.03.008>
- [81]. Ribaudo C., Bertin V., Jan G., Anschutz P. and **Abril G.** (2016) Benthic production, respiration and methane oxidation within *Lobelia dortmanna* lawns. *Hydrobiologia* <https://doi.org/10.1007/s10750-016-2848-x>.

- [80]. Sobrinho R.L., Bernardes M.C., **Abril G.**, Kim J.-H., Zell C.I., Mortillaro J.-M., Meziane T., Moreira-Turcq P., and Sinninghe Damsté J.S. (2016) Spatial and seasonal contrasts of sedimentary organic carbon in floodplain lakes of the central Amazon basin. *Biogeosciences* 13: 467–482. <https://doi.org/10.5194/bg-13-467-2016>.

2015

- [79]. **Abril G.**, Bouillon S., Darchambeau F., Teodoru C., Marwick T., Tamoooh F., Ochieng Omengo F., Geeraert N., Deirmendjian L.*, Polsenaere P.* and Borges A.V. (2015) Technical Note: Large overestimation of pCO₂ calculated from pH and alkalinity in acidic, organic-rich freshwaters. *Biogeosciences* 12: 67-78. <https://doi.org/10.5194/bg-12-67-2015>
- [78]. Borges A.V., **Abril G.**, Darchambeau F., Teodoru C.R., Deborde J.*, Vidal L.O., Lambert T. and Bouillon S. (2015) Divergent biophysical controls of aquatic CO₂ and CH₄ in the World's two largest rivers. *Scientific Reports*, 5:15614, <https://doi.org/10.1038/srep15614>.
- [77]. Cotovicz Jr L.C.*, Knoppers B.A., Brandini N., Da Costa S.S.J.* and **Abril G.** (2015) A strong CO₂ sink enhanced by eutrophication in a tropical coastal embayment (Guanabara Bay, Rio de Janeiro, Brazil). *Biogeosciences* 12: 6125–6146. <https://doi.org/10.5194/bg-12-6125-2015>
- [76]. Vidal L.O., **Abril G.**, Artigas L.F., Melo M.L., Bernardes M.C., Lobão L.M., Reis M.C., Moreira-Turcq P. Benedetti M.F., Tornisielo V.L. & Roland F. (2015) Hydrological pulse regulating the bacterial heterotrophic metabolism between Amazonian mainstems and floodplain lakes. *Frontiers in Microbiology* 6: 1054, <https://doi.org/10.3389/fmicb.2015.01054>
- [75]. Viovy N. et Abril G. (2015) L'eau dans les écosystèmes continentaux. *Chapitre 15. dans : L'eau à découvert, R. Mosseri, C. Jeandel, A. Euzen (eds.). CNRS Editions.* 116-117.
- [74]. Mortillaro J. M.*, Pouilly M., Wach M., Freitas C. E. C., **Abril G.** and Meziane T. (2015) Trophic opportunism of central Amazon floodplain fish. *Freshwater Biology*, <https://doi.org/10.1111/fwb.12598>.
- [73]. Pacheco F.S., Soares M.C.S. Assireu A.T., Curtarelli M.P., Roland F., **Abril G.**, Stech J.L., Alvalá P.C., and Ometto J.P. (2015) River inflow and retention time affecting spatial heterogeneity of chlorophyll and water-air CO₂ fluxes in a tropical hydropower reservoir. *Biogeosciences* 12: 147-162.

2014

- [72]. **Abril G.**, Martinez J.-M., Artigas L.F., Moreira-Turcq P., Benedetti M.F., Vidal L., Meziane T., Kim J.-H., Bernardes M.C., Savoye N., Deborde J.*, Albéric P., Souza M.F.L., Souza E.L. and Roland F. (2014) Amazon River carbon dioxide outgassing fuelled by wetlands. *Nature* 505: 395–398. <https://doi.org/10.1038/nature12797>
- [71]. Fuentes-Cid A., Etcheber H., Schmidt S., **Abril G.**, De Oliveira E., Lepage M. and, Sottolichio A. (2014) Dynamics of coarse particulate matter in the turbidity maximum zone of the Gironde Estuary. *Comptes Rendus Géoscience*. 346: 28–36.

2013

- [70]. **Abril G.**, Deborde J.*, Savoye N., Mathieu F., Moreira-Turcq P., Artigas L.A., Meziane T., Takiyama L.R., Souza M.S. and Seyler P. (2013) Export of ¹³C-depleted dissolved inorganic carbon from a tidal forest bordering the Amazon Estuary. *Estuarine Coastal and Shelf Science* 129 : 23-27.
- [69]. **Abril G.**, Parize M., Pérez M.A.P. and Filizola N. (2013) Wood decomposition in Amazonian hydropower reservoirs: an additional source of greenhouse gases. *Journal of South American Earth Sciences* 44: 104-107.
- [68]. Garnier J., Vilain G., Silvestre M., Billen G., Jehanno S., Poirier D., Martinez A., Decucq C., Cellier P. and **Abril G.** (2013) Budget of methane emissions from soils, livestock and the river network at the regional scale of the Seine basin (France). *Biogeochemistry* <https://doi.org/10.1007/s10533-013-9845-1>.
- [67]. Lanoux A.*, Etcheber H., Schmidt S., Sottolichio A., Chabaud G., Richard M. and **Abril G.** (2013) Factors contributing to hypoxia in a highly turbid, macrotidal estuary (the Gironde, France). *Journal of Environmental Monitoring* 15, 585-595.
- [66]. Polsenaere P.*, Deborde J.* Detandt G., Vidal L.O., Pérez M.A.P. and **Abril G.** (2013) Thermal enhancement of gas transfer velocity of CO₂ in an Amazon floodplain lake revealed by Eddy Covariance. *Geophysical Research Letters* 40, 1734–1740, <https://doi.org/10.1002/grl.50291>.
- [65]. Polsenaere P.*, Savoye N., Etcheber H., Canton M., Poirier D., Bouillon S. and **Abril G.** (2013) Export and degassing of terrestrial carbon through watercourses draining a temperate podsolised catchment. *Aquatic Sciences* 75: 299–319.
- [64]. Zell C., Kim J.-H., Moreira-Turcq P., **Abril G.**, Hopmans E., Bonnet M.-P., Lima Sobrinho R. and Sinninghe Damsté J .S. (2013). Disentangling the origins of branched tetraether lipids and crenarchaeol in the lower Amazon River: Implications for GDGT-based proxies. *Limnology and Oceanography* 58: 343-353.

- [63]. Zell C., Kim J.-H., **Abril G.**, Sobrinho R., Dorhout D., Moreira-Turcq P., and Sinninghe Damsté J. S. (2013) Impact of seasonal hydrological variation on the distributions of tetraether lipids along the Amazon River in the central Amazon basin: Implications for the MBT/CBT paleothermometer and the BIT index. *Frontiers in Microbiology* 4: 228. <https://doi.org/10.3389/fmicb.2013.00228>
-

2012

- [62]. Borges A. V., Bouillon S., **Abril G.**, Delille B., Poirier D., Commarieu M.-V., Lepoint G., Morana C., Servais P., Descy J.-P. and Darchambeau F. (2012) Variability of carbon dioxide and methane in the epilimnion of Lake Kivu. In J.-P. Descy et al. (eds.), Lake Kivu: Limnology and biogeochemistry of a tropical great lake, *Aquatic Ecology Series* 5, Springer. https://doi.org/10.1007/978-94-007-4243-7_4. pp 47–66
- [61]. Mortillaro J. M.*, Rigal F., Rybarczyk H., Bernardes M., **Abril G.**, Meziane T. (2012) Particulate organic matter distribution along the Lower Amazon River: addressing aquatic ecology concepts using fatty acids. *PLoS ONE* 7(9): e46141. <https://doi.org/10.1371/journal.pone.0046141>
- [60]. Kim J.H., Zell C., Moreira-Turcq P., Pérez M.A.P., **Abril G.**, Mortillaro J.M.*, Weijers J.W.H., Meziane T., and Sinninghe Damsté J.S. (2012) Tracing soil organic carbon in the lower Amazon River and its tributaries using GDGT distributions and bulk organic matter properties. *Geochimica et Cosmochimica Acta*. 90: 163–180.
- [59]. Luyssaert S., **Abril G.**, Andres R., Bastviken D., Bellassen V., Bergamaschi P., Bousquet P., Chevallier F., Ciais P., Corazza M., Dechow R., Erb K.-H., Etiope G., Fortems-Cheiney A., Grassi G., Hartman J., Jung M., Lathière J., Lohila A., Moosdorf N., Njakou Djomo S., Otto J., Papale D., Peters W., Peylin P., Raymond P., Rödenbeck C., Saarnio S., Schulze E.-D., Szopa S., Verkerk P. J., Vuichard N., Wang R., Wattenbach M., Zaehle S. (2012) The European CO₂, CO, CH₄ and N₂O balance between 2001 and 2005. *Biogeosciences* 9: 3357–3380.
- [58]. Polsenaere P.* and **Abril G.** (2012) Modelling CO₂ degassing from small acidic rivers using water pCO₂, DIC and δ¹³C-DIC data. *Geochimica et Cosmochimica Acta* 91: 220–239.
- [57]. Polsenaere P.*, Lamaud E., Lafon V., Bonnefond J.-M., Bretel P., Delille B., Deborde J., Loustau D. and **Abril G.** (2012). Spatial and temporal CO₂ exchanges measured by Eddy Correlation over a temperate intertidal flat and relations with net ecosystem production. *Biogeosciences* 9, 249–268.
- [56]. Savoye N., David V., Morisseau F., Etcheber H., **Abril G.**, Billy I., Charlier K., Oggian G., Deriennic H. and Sautour B. (2012) Origin and composition of particulate organic matter in a macrotidal turbid estuary: the Gironde Estuary, France. *Estuarine Coastal and Shelf Science* 108: 16–28.
-

2011

- [55]. Borges A.V., and **Abril G.** (2011) Carbon dioxide and methane dynamics in estuaries. In *Treatise on Coastal and Estuarine Science. Volume 5 - Biogeochemistry*. Elsevier. 119–161. <https://doi.org/10.1016/B978-0-12-374711-2.00504-0>
- [54]. Bouchet S., Bridou R., Tessier E., Rodriguez-Gonzalez P., Monperrus M., **Abril G.** and Amouroux D. (2011). An experimental approach to investigate mercury species transformations under redox oscillations in coastal sediments. *Marine Environmental Research* 71: 1–9.
- [53]. Borges A. V., **Abril G.**, Delille B., Descy J.-P. and Darchambeau F. (2011) Diffusive methane emissions to the atmosphere from lake Kivu (Eastern Africa). *Journal of Geophysical Research* 116, G03032, <https://doi.org/10.1029/2011JG001673>.
- [52]. Lopes F., Viollier E., Thiam A., Michard G., **Abril G.**, Groleau A., Prévot F., Carrias J.-F., Albéric P. and Jézéquel D. (2011). Biogeochemical modelling of anaerobic vs. aerobic methane oxidation in a meromictic crater lake (Lake Pavin, France). *Applied Geochemistry* 26: 1919–1932.
- [51]. Mortillaro J. M.*, **Abril G.**, Moreira-Turcq P., Sobrinho R., Pérez M and Meziane T. (2011) Fatty acid and stable isotopes (δ¹³C, δ¹⁵N) signatures of particulate organic matter in the Lower Amazon River: seasonal contrasts and connectivity between floodplain lakes and the mainstem. *Organic Geochemistry* 42: 1159–1168. <https://doi.org/10.1016/j.orggeochem.2011.08.011>
-

2010

- [50]. **Abril G.**, Commarieu M.V.*, Etcheber H., Deborde J., Deflandre B., Zivadinovic M.K., Chaillou G., and Anschutz P. (2010) In vitro simulation of oxic/suboxic diagenesis in an estuarine fluid mud subjected to redox oscillations. *Estuarine Coastal and Shelf Science*. 88: 279–291.
- [49]. Deborde J.*, Anschutz P., Guérin F., Poirier D., Marty D., Boucher G., Thouzeau G., Canton M. and **Abril G.** (2010) Methane sources, sinks and fluxes in a temperate tidal lagoon. *Estuarine Coastal and Shelf Science* 89: 256–266.
- [48]. Koné Y. J. M., **Abril G.**, Delille B. and Borges A.V. (2010) Seasonal variability of methane in the rivers and lagoons of Ivory Coast (West Africa). *Biogeochemistry* 100:21–37.

- [47]. Huguet A., Vacher L., Saubusse S., Etcheber H., **Abril G.**, Relexans S., Ibalot F. and Parlanti E. (2010) New insights into the size distribution of fluorescent dissolved organic matter in estuarine waters. *Organic Geochemistry* 41: 595–610.
- [46]. Luyssaert S., Ciais P., Piao S., Schulze, E.-D., Jung M., Zaehle S., Reichstein M., Churkina G., Papale D., **Abril G.**, Beer C., Grace J., Loustau D., Matteucci G., Magnani F., Schelhaas M.-J., Nabuurs G.-J., Verbeeck H., Sulkava M., van der Werf G. and Janssens I. (2010) The European carbon balance revisited. Part 3: forests. *Global Change Biology* 16: 1429–1450
- [45]. Schulze E.D., Ciais P., Luyssaert S., Schrumpf M., Janssens I.A., Thiruchittampalam B., Theloke J., Saurat M., Bringezu S., Lelieveld J., Lohila A., Rebmann C., Jung M., Bastviken D., **Abril G.**, Grassi G., Leip A., Freibauer A., Kutsch W., Don A., Nieschulze J., Börner A., Gash J., Dolman A.J. (2010) The European carbon balance. Part 4: integration of carbon and other trace-gas fluxes. *Global Change Biology* 16: 1451–1469.

2009

- [44]. **Abril G.**, Commarieu M.V.*, Sottolichio A., Bretel P. and Guérin F. (2009) Turbidity limits gas exchange in a large macrotidal estuary. *Estuarine Coastal and Shelf Science*. 83: 342–348.
- [43]. **Abril G.** (2009) Comment on: "Underwater measurements of carbon dioxide evolution in marine plant communities: A new method" by J. Silva et al. *Estuarine Coastal and Shelf Science* 82: 357–360.
- [42]. Bouillon S., **Abril G.**, Borges A.V., Dehairs F., Govers G., Hughes H., Merckx R., Meysman F.J.R., Nyunja J., Osburn C., & Middelburg J.J. (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.
- [41]. De Junet A., **Abril G.**, Guérin F.*, Billy I. and De Wit R. (2009) A multi-tracers analysis of sources and transfers of particulate organic matter in a tropical reservoir (Petit Saut, French Guiana). *River Research and Applications* 25: 253–271.
- [40]. Koné Y. J. M., **Abril G.**, Kouadio K. N., Delille B. and Borges A.V. (2009) Seasonal variability of carbon dioxide in the rivers and lagoons of Ivory Coast (West Africa). *Estuaries and Coasts* 32: 246–260.

2008

- [39]. **Abril G.** and Guérin F.* (2008) Les barrages tropicaux: émetteurs de gaz à effet de serre. *Pour la Science*, numéro spécial sur l'eau, Janvier 2008.
- [38] Ciais P., Borges A.V., **Abril G.**, Meybeck M., Folberth G., Hauglustaine D. and Janssens I.A. (2008). The impact of lateral carbon fluxes on the European carbon balance. *Biogeosciences* 5: 1259-1271. <https://doi.org/10.5194/bg-5-1259-2008>
- [37] Ciais P., Borges A.V., **Abril G.**, Meybeck M., Folberth G., Hauglustaine D. and Janssens I.A. (2008). The lateral carbon pump, and the European carbon balance In: A.J. Dolman et al. (eds.), *The Continental-Scale Greenhouse Gas Balance of Europe*. Springer Science. pp 314–360.
- [36]. Deborde J.*, **Abril G.**, Mouret A., Jézéquel D., Thouzeau G., Clavier J., Bachelet G. and Anschutz P. (2008) Effects of seasonal dynamics of a *Zostera noltii* meadow on phosphorus and iron cycles in a tidal mudflat (Arcachon Bay, France) *Marine Ecology, Progress Series* 355: 59–71. <https://doi.org/10.3354/meps07254>
- [35]. Deborde J.*, Anschutz P., Aubry I., Glé C., Maurer D., Lecroart P., Commarieu M.V. and **Abril G.** (2008) Role of the tidal pumping on nutrient cycling in a temperate lagoon (Arcachon Bay, France) *Marine Chemistry* 109: 98–114. <https://doi.org/10.1016/j.marchem.2007.12.007>
- [34]. Guérin F.*, **Abril G.**, Tremblay A. and Delmas R. (2008) Nitrous oxide emissions from tropical hydroelectric reservoirs. *Geophysical Research Letters* 35, <https://doi.org/10.1029/2007GL033057>
- [33]. Guérin F.*, **Abril G.**, De Junet A. and Bonnet M.P. (2008) Anaerobic decomposition of tropical soils and plant material: implication for the CO₂ and CH₄ budget of the Petit Saut Reservoir. *Applied Geochemistry* 23: 2272–2283. <https://doi.org/10.1016/j.apgeochem.2008.04.001>
- [32]. Kristensen E., Flindt M.R., Ulomi S., Borges A.V., **Abril G.** and Bouillon S. (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. <https://doi.org/10.3354/meps07642>

2007

- [31]. **Abril G.**, Commarieu M.-V.* and Guérin F.* (2007) Enhanced methane oxidation in an estuarine turbidity maximum. *Limnology and Oceanography* 52: 470–475. <https://doi.org/10.4319/lo.2007.52.1.0470>
- [30]. Bouillon S., Middelburg J.J., Dehairs F., Borges A.V., **Abril G.**, Flindt M.R., Ulomi S. and Kristensen E. (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. <https://doi.org/10.5194/bg-4-311-2007>

- [29]. Bouillon S., Dehairs F., Velimirov B., **Abril G.**, and Borges A.V. (2007). Dynamics of organic and inorganic carbon across contiguous mangrove and seagrass systems (Gazi bay, Kenya) *Journal of Geophysical Research - Biogeoscience* 112, <https://doi.org/10.1029/2006JG000325>
- [28]. Deborde J.*, Anschutz P. Chaillou G., Etcheber H., Commarieu M.-V., Lecroart P. and **Abril G.** (2007) The dynamics of phosphorus in turbid estuarine systems: Example of the Gironde estuary (France). *Limnology and Oceanography* 52: 862–872. <https://doi.org/10.4319/lo.2007.52.2.0862>
- [27]. Etcheber H., Taillez A., **Abril G.**, Garnier J., Servais P., Moatar F. and Commarieu M.-V. (2007) Particulate organic carbon in the estuarine turbidity maxima of the Gironde, Loire and Seine estuaries: origin and lability. *Hydrobiologia*, 588: 245-259. <https://doi.org/10.1007/s10750-007-0667-9>
- [26]. Guérin F.* and **Abril G.** (2007) Significance of pelagic aerobic methane oxidation in the methane and carbon budgets of a tropical reservoir. *Journal of Geophysical Research - Biogeoscience* 112, <https://doi.org/10.1029/2006JG000393>
- [25]. Guérin F.*, **Abril G.**, Serça D., Delon C., Richard S., Delmas R., Tremblay A., and Varfalvy L. (2007) Gas transfer velocities of CO₂ and CH₄ in a tropical reservoir and its river downstream. *Journal of Marine Systems* 66: 161-172. <https://doi.org/10.1016/j.jmarsys.2006.03.019>

2006

- [24]. **Abril G.**, Richard S. and Guérin F.* (2006) In-Situ measurements of dissolved gases (CO₂ and CH₄) in a wide range of concentrations in a tropical reservoir using an equilibrator. *Science of the total Environment* 354: 246-251. <https://doi.org/10.1016/j.scitotenv.2004.12.051>
- [23]. Borges A.V., Schiettecatte L.-S., **Abril G.**, Delille B. and Gazeau F. (2006) Carbon dioxide in European Coastal waters. *Estuarine, Coastal and Shelf Science* 70(3): 375-387. <https://doi.org/10.1016/j.ecss.2006.05.046>
- [22]. Guérin F.*, **Abril G.**, Richard S., Burban B., Reynouard C., Seyler P. and Delmas R. (2006) Methane and carbon dioxide emissions from tropical reservoirs: significance of downstream rivers. *Geophysical Research Letters* 33, L21407, <https://doi.org/10.1029/2006GL027929>

2005

- [21]. **Abril G.**, Guérin F.*, Richard S., Delmas R., Galy-Lacaux C., Gosse P., Tremblay A., Varfalvy L., Dos Santos M.A. and Matvienko B. (2005) Carbon dioxide and methane emissions and the carbon budget of a 10-year old tropical reservoir (Petit-Saut, French Guiana). *Global Biogeochemical Cycles*, 19: GB4007, <https://doi.org/10.1029/2005GB002457>
- [20]. Coynel A., Etcheber H., **Abril G.**, Maneux E., Dumas J. & Hurtrez J.H (2005) Contribution of small mountainous rivers to particulate organic carbon input in the Bay of Biscay. *Biogeochemistry* 74: 151–171. <https://doi.org/10.1007/s10533-004-3362-1>
- [19]. Fontugne M., Maro D., Tenailleau L., **Abril G.**, Commarieu M.-V., Germain P., Hébert D., Rozet M., Voiseux C., Solier L., Noury C., Hatté C. and Paterne M. (2005) Radionuclides transfer between water and atmosphere in the Loire estuary (FLORE project). *Radioprotection* 40: 557-562.

2004

- [18]. **Abril G.**, Commarieu M-V.*, Maro D., Fontugne M., Guérin F. & Etcheber H. (2004) A massive dissolved inorganic carbon release at spring tide in a highly turbid estuary. *Geophysical Research Letters* 31, <https://doi.org/10.1029/2004GL019714>
- [17]. **Abril G.** and Borges A.V. (2004). Carbon dioxide and methane emissions from estuaries. In: *Greenhouse Gas Emissions: Fluxes and Processes. Hydroelectric Reservoirs and Natural Environments*. A. Tremblay, L. Varfalvy, C. Roehm and M. Garneau (Eds) Environmental Science Series, Springer-Verlag, Berlin, Heidelberg, New York. 187-207. https://doi.org/10.1007/978-3-540-26643-3_8
- [16]. Borges A.V., Delille B. Schiettecatte L-S, Gazeau F. **Abril G.** & Frankignoulle M. (2004). Gas transfer velocities of CO₂ in three European estuaries (Randers Fjord, Scheldt and Thames). *Limnology and Oceanography* 49(5): 1630-1641. <https://doi.org/10.4319/lo.2004.49.5.1630>
- [15]. Delmas R., Richard R., Guérin F.*, **Abril G.**, Galy-Lacaux C., Delon C. & Grégoire A. (2004) Long term greenhouse gas emissions from the hydroelectric reservoir of Petit Saut (French Guiana) and potential impacts. In: *Greenhouse Gas Emissions: Fluxes and Processes. Hydroelectric Reservoirs and Natural Environments*. A. Tremblay, L. Varfalvy, C. Roehm and M. Garneau (Eds) Environmental Science Series, Springer-Verlag, Berlin, Heidelberg, New York. 293-312. https://doi.org/10.1007/978-3-540-26643-3_13
- [14]. Robert S., Blanc G., Schaefer J., Lavaux G. & **Abril G.** (2004) Metal mobilization in the Gironde Estuary (France): the role of the soft mud layer in the maximum turbidity zone. *Marine Chemistry* 87: 1-13. [https://doi.org/10.1016/S0304-4203\(03\)00088-4](https://doi.org/10.1016/S0304-4203(03)00088-4)

2003

- [13]. Abril G., Etcheber H., Delille B., Frankignoulle M. & Borges A.V (2003) Carbonate dissolution in the turbid and eutrophic Loire estuary. *Marine Ecology, Progress Series* 259: 129-138. <https://doi.org/10.3354/meps259129>
- [12]. Bouillon S., Frankignoulle M., Dehairs F., Velimirov B., Eiler A., Abril G., Etcheber H. & 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* 17:1114. <https://doi.org/10.1029/2002GB002026>
-

2002

- [11]. Abril G., Nogueira M., Etcheber H., Cabeçadas G., Lemaire E. & Brogueira M.J. (2002) Behaviour of organic carbon in nine contrasting European estuaries. *Estuarine, Coastal and Shelf Science* 54: 241-262. <https://doi.org/10.1006/ecss.2001.0844>
- [10]. Abril G. & Iversen N. (2002) Methane dynamics in a shallow, non-tidal, estuary (Randers Fjord, Denmark). *Marine Ecology, Progress Series* 230: 171-181. <https://doi.org/10.3354/meps230171>
- [9]. Lemaire E., Abril G., De Wit R. & Etcheber H. (2002) Effect of turbidity on phytoplankton pigments degradation in the Gironde estuary. *Comptes Rendus Géosciences* 334: 251-258. [https://doi.org/10.1016/S1631-0713\(02\)01747-9](https://doi.org/10.1016/S1631-0713(02)01747-9)
- [8]. Lemaire E., Abril G., De Wit R. & Etcheber H. (2002) Phytoplankton pigments in nine European estuaries: implications for an estuarine typology. *Biogeochemistry* 59: 5-23. <https://doi.org/10.1023/A:1015572508179>
- [7]. Tessier E., Amouroux D., Abril G., Lemaire E., & Donard O.F.X. (2002) Formation and volatilisation of alkyl-Iodides and -Selenides in macrotidal estuaries. *Biogeochemistry* 59: 183-206. <https://doi.org/10.1023/A:1015550931365>
-

2001

- [6]. Abril G. and Frankignoulle M. (2001) Nitrogen-Alkalinity interactions in the highly polluted Scheldt basin (Belgium). *Water Research* 35: 844-850. [https://doi.org/10.1016/S0043-1354\(00\)00310-9](https://doi.org/10.1016/S0043-1354(00)00310-9)
- [5]. Tseng C.M., Amouroux D., Abril G., Tessier E., Etcheber H. & Donard O.F.X. (2001) Speciation of Mercury in a Fluid Mud profile from a Highly Turbid Estuary (The Gironde, France). *Environmental Science and Technology* 35: 2627-2633. <https://doi.org/10.1021/es001750b>
-

2000

- [4]. Abril G., Riou S., Etcheber H., Frankignoulle M., De Wit R. & Middelburg J.J. (2000) Transient, tidal time-scale Nitrogen transformations in an estuarine turbidity maximum-fluid mud system (The Gironde, France). *Estuarine Coastal and Shelf Science* 50: 703-715. <https://doi.org/10.1006/ecss.1999.0598>
- [3]. Abril G., Etcheber H., Borges A.V. & Frankignoulle M. (2000) Excess atmospheric carbon dioxide transported by rivers into the Scheldt Estuary. *Comptes Rendus de l'Académie des Sciences Série IIA* 330: 761-768. [https://doi.org/10.1016/S1251-8050\(00\)00231-7](https://doi.org/10.1016/S1251-8050(00)00231-7)
-

1999

- [2]. Abril G., Etcheber H., Le Hir P., Bassoulet P., Boutier B. & Frankignoulle M. (1999) Oxic/anoxic oscillations and organic carbon mineralization in an estuarine maximum turbidity zone (The Gironde, France). *Limnology and Oceanography* 44: 1304-1315. <https://doi.org/10.4319/lo.1999.44.5.1304>
-

1998

- [1]. Frankignoulle M., Abril G., Borges A., Bourge I., Canon C., Delille B., Libert E. & Théate J.M. (1998) Carbon dioxide emission from European estuaries. *Science* 282: 434-436. <https://doi.org/10.1126/science.282.5388.434>
-