

## Dr. Matti Barthel | Biogeochemist

### RESEARCH EXPERIENCE

**Research Technician – ETH Zurich**, Department of Environmental Systems Sciences, SAE lab, Zurich, Switzerland – 05/2014 - today

**Visiting Scientist– ICCN, Jardin Botanique d'Eala**, Mbandaka, DR Congo – 11/2019

**Visiting Scientist– Université Catholique de Bukavu**, Faculté de Sciences Agronomiques, Bukavu, DR Congo – 09/2016

**Postdoc – Landcare Research | Manaaki Whenua**, Ecosystems & Global Change Team, Lincoln, New Zealand – 06/2012 - 05/2014

**Visiting Scientist, Universitat de les Illes Balears**, Laboratori de Fisiologia Vegetal, Palma de Mallorca, Spain – 05/2010

### EDUCATION

**Dr. sc., ETH Zurich**, Terrestrial Ecosystem Physiology Group, Marie Curie Excellence Team, Zurich, Switzerland – 11/2007 - 02/2012

**M.Sc. thesis, Max-Planck-Institute for Biogeochemistry**, Department of Biogeochemical Processes, Jena, Germany – 10/2006 - 09/2007

Studies of Biology, Specialization: Biochemistry, Neurobiology, Ecology, **Friedrich-Schiller-University**, Jena, Germany – 10/2001 - 09/2006

### PUBLICATIONS | peer-reviewed

[52] Ho L, Pham K, **Barthel M**, Harris S, Bodé S, De Vrieze J, Vermeir P, Six J, Boeckx P, Goethals P (2024): Unravelling CH<sub>4</sub> and N<sub>2</sub>O dynamics in tidal wetlands using natural abundance isotopes and functional genes. *Soil Biology and Biochemistry* 196, 109497. <https://doi.org/10.1016/j.soilbio.2024.109497>

[51] Ho L, **Barthel M**, Pham K, Bodé S, Van Colen C, Moens T, Six J, Boeckx P, Goethals P (2024): Regulating greenhouse gas dynamics in tidal wetlands: Impacts of salinity gradients and water pollution. *Journal of Environmental Management* 364, 121427. <https://doi.org/10.1016/j.jenvman.2024.121427>

[50] Trew BT, Edwards DP, Lees AC, Klinges DH, Early R, Svátek M, Plichta R, Matula R, Okello J, Niessner A, **Barthel M**, Six J, Maeda EE, Barlow J, do Nascimento RO, Berenguer E, Ferreira J, Sallo-Bravo J, Maclean IMD (2024): Novel temperatures are already widespread beneath the world's tropical forest canopies. *Nature Climate Change*. <https://doi.org/10.1038/s41558-024-02031-0>

i. Invited to a 'Behind the Paper' blog entry [\[link\]](#)

[49] Drake TW, Baumgartner S, **Barthel M**, Bauters M, Alebadwa S, Akoko NB, Haghypour N, Eglinton T, Van Oost K, Boeckx P, Six J (2024): Agricultural land-use increases carbon yields in lowland streams of the Congo Basin. *JGR Biogeosciences*, e2023JG007751. <https://doi.org/10.1029/2023JG007751>

[48] Drake TW, **Barthel M**, Mbongo CE, Mpambi DM, Baumgartner S, Botefa CI, Bauters M, Kurek MR, Spencer RGM, McKenna AM, Haghypour N, Ekamba GL, Wabakanghanzi JN, Eglinton TI, Van Oost K, Six J (2023): Hydrology drives export and composition of carbon in a pristine tropical river. *Limnology & Oceanography* <https://doi.org/10.1002/lno.12436>

i. Featured in national and international news media (e.g. [GEO Magazine](#), [Der Spiegel](#), [Daily Mail](#), ...)

ii. Featured in the '[The Conversation](#)'

[47] Ho L, **Barthel M**, Harris S, Vermeulen K, Six J, Bodé S, Boeckx P, Goethals P (2023): Unravelling spatiotemporal N<sub>2</sub>O dynamics in an urbanized estuary system using natural abundance isotopes. *Water Research* <https://doi.org/10.1016/j.watres.2023.120771>

[46] Ho L, **Barthel M**, Panique-Casso D, Vermeulen K, Bruneel S, Liu X, Bodé S, Six J, Boeckx P, Goethals P (2023): Impact of salinity gradient, water pollution and land use types on greenhouse gas emissions from an urbanized estuary. *Environmental Pollution* <https://doi.org/10.1016/j.envpol.2023.122500>

[45] Amundson R, Mills JV, Lammers LN, **Barthel M**, Gallarotti N, Six J, Gebauer G, Maurer GE (2023): Simultaneous production and consumption of soil N<sub>2</sub>O creates complex effects on its stable isotope composition. *Global Biogeochemical Cycles* <https://doi.org/10.1029/2022GB007536>

[44] Solly EF, Jaeger ACH, **Barthel M**, Werner RA, Zürcher A, Hagedorn F, Six J, Hartmann M (2023): Water limitation intensity shifts carbon allocation dynamics in Scots pine mesocosms. *Plant and Soil* <https://doi.org/10.1007/s11104-023-06093-5>

[43] Kantnerová K, **Barthel M**, Six J, Emmenegger L, Bernasconi SM, Mohn J (2022): Stable isotope analysis of greenhouse gases requires analyte preconcentration. *Chimia* <https://doi.org/10.2533/chimia.2022.656>

[42] Harris E, Yu L, Wang YP, Mohn J, Henne S, Bai E, **Barthel M**, Bauters M, Boeckx P, Dorich C, Farrel M, Krummel PB, Loh ZM, Reichstein M, Six J, Steinbacher M, Wells NS, Bahn M, Rayner P (2022): Warming and redistribution of nitrogen inputs drive an increase in terrestrial nitrous oxide emission factor. *Nature Communications* <https://doi.org/10.1038/s41467-022-32001-z>

[41] Bauters M, Janssens IA, Wasner D, Doetterl S, Vermier P, Griepentrog M, Drake TW, Six J, **Barthel M**, Baumgartner S, Van Oost K, Makelele IA, Ewango C, Verheyen K, Boeckx P (2022): Increasing calcium scarcity along Afrotropical forest succession. *Nature Ecology & Evolution* <https://doi.org/10.1038/s41559-022-01810-2>

[40] Baumgartner S, Bauters M, Drake TW, **Barthel M**, Alebadwa S, Bahizire N, Bazirake BM, Six J, Boeckx P, Van Oost K (2022): Substantial organic and particulate nitrogen and phosphorus export from geomorphologically stable African tropical forest landscapes. *Ecosystems*: <https://doi.org/10.1007/s10021-022-00773-6>

[39] Makelele IA, Bauters M, Verheyen K, **Barthel M**, Six J, Rütting T, Bodé S, Ntaboba LC, Bazirake BM, Bosela FB, Kimbesa F, Ewango C, Boeckx P (2022): Conservative N cycling despite high atmospheric deposition in early successional African tropical lowland forests. *Plant Soil* <https://doi.org/10.1007/s11104-022-05473-7>

[38] Fang X, Wang C, Zhang T, Zheng F, Zhao J, Wu S, **Barthel M**, Six J, Zou J, Liu S (2022): Ebullitive CH<sub>4</sub> flux and its mitigation potential by aeration in freshwater aquaculture: Measurements and global data synthesis. *Agriculture, Ecosystems and Environment* 335: 108016. <https://doi.org/10.1016/j.agee.2022.108016>

[37] Nwokoro CC, Kreye C, Neepalova M, Adeyemi O, **Barthel M**, Pypers P, Hauser S, Six J (2022): Cassava-maize intercropping systems in southern Nigeria: Radiation use efficiency, soil moisture dynamics, and yields of component crops. *Field Crops Research* 283 <https://doi.org/10.1016/j.fcr.2022.108550>

[36] Longepierre M, Conz RF, **Barthel M**, Bru D, Philippot L, Six J, Hartmann M (2022): Mixed effects of soil compaction on the nitrogen cycle under pea and wheat. *Frontiers in Microbiology* 12:822487. doi: 10.3389/fmicb.2021.822487

[35] **Barthel M**, Bauters M, Baumgartner S, Drake TW, Bey MN, Bush G, Boeckx P, Botefa CI, Dériaz N, Ekamba GL, Gallarotti N, Mbayu FM, Mugula JK, Makelele IA, Mbongo CE, Mohn J, Manda JZ, Mpambi DM, Ntaboba LC, Rukeza MB, Spencer RGM, Summerauer L, Vanlauwe B, Van Oost K, Wolf B, Six J (2022): Low N<sub>2</sub>O and variable CH<sub>4</sub> fluxes from tropical forest soils of the Congo Basin. *Nature Communications*, <https://doi.org/10.1038/s41467-022-27978-6>

i. Showcased as one of the 50 best papers recently published in *Nature Communications* (Editors' highlights in Earth Science) 26 Jan 2022 [\[link\]](#)

ii. Featured as Research Highlight in *Nature Africa* [\[link\]](#)

iii. Invited to a 'Behind the Paper' blog [\[link\]](#)

iv. Featured in several national and international news ([Tagesanzeiger](#), [Blick](#))

[34] Lembrechts J, SoilTemp Consortium, ..., **Barthel M**, ..., Lenoir J (2021): Global maps of soil temperature. *Global Change Biology*, <https://doi.org/10.1111/gbc.16060>

[33] Baumgartner S, Bauters M, **Barthel M**, Alebadwa S, Bahizire N, Sumaili C, Ngoy D, Kongolo M, Bazirake MB, Ntaboba LC, Six J, Boeckx P, Van Oost K, Drake TW (2021): Fluvial sediment export from pristine forested headwater catchments in the Congo Basin. *Geomorphology*, <https://doi.org/10.1016/j.geomorph.2021.108046>

[32] Gallarotti N, **Barthel M**, Verhoeven E, Pereira EIP, Bauters M, Baumgartner S, Drake TW, Boeckx P, Mohn J, Longepierre M, Mugula JK, Makelele IA, Ntaboba LC, Six J (2021): In-depth analysis of N<sub>2</sub>O fluxes in tropical forest soils of the Congo Basin combining isotope and functional gene analysis. *ISME J*, <https://doi.org/10.1038/s41396-021-01004-x> | invited to a 'Behind the Paper' blog post of the **Nature Microbiology Community** [Link](#)

[31] Bagalwa RM, Chartin C, Baumgartner S, Mercier S, Syaushwa M, Samba VC, Zabona MT, Karume K, Cizungu NL, **Barthel M**, Doetterl S, Six J, Boeckx P, Van Oost K (2021): Spatial and seasonal patterns of rainfall erosivity in the Lake Kivu region: Insights from a meteorological observatory network, *Progress in Physical Geography: Earth and Environment*, <https://doi.org/10.1177/03091333211001793>

[30] Ho L, Jerves-Cobo R, Morales O, Larriva J, Arevalo-Durazno M, **Barthel M**, Six J, Bodé S, Boeckx P, Goethals P (2021): Spatial and temporal variations of greenhouse gas emissions from a waste stabilization pond: Effects of sludge distribution and accumulation, *Water Research*, 193, <https://doi.org/10.1016/j.watres.2021.116858>

[29b] Ho L, Jerves-Cobo R, **Barthel M**, Six J, Bodé S, Boeckx P, Goethals P (2022): Greenhouse gas dynamics in an urbanized river system: influence of water quality and land use, *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-021-18081-2>

[29a] Ho L, Jerves-Cobo R, **Barthel M**, Six J, Bodé S, Boeckx P, Goethals P (2020): Effects of land use and water quality on greenhouse gas emissions from an urban river system, *Biogeosciences Discussions*, <https://doi.org/10.5194/bg-2020-311> | featured in **BBC Future Planet** article 'The rivers that 'breathe' greenhouse gases' by Matthew Keegan 24<sup>th</sup> March 2021: [Link](#)

[28] Tamale J, Hüppi R, Griepentrog M, Turyagyenda LF, **Barthel M**, Doetterl S, Fiener P, van Straaten O (2021): Nutrient limitations regulate soil greenhouse gas fluxes from tropical forests: evidence from an ecosystem-scale nutrient manipulation experiment in Uganda. *SOIL* 7, 433-451, <https://doi.org/10.5194/soil-7-433-2021>.

[27] Summerauer LS, Baumann P, Ramirez-Lopez L, **Barthel M**, Bauters M, Bukombe B, Reichenbach M, Boeckx P, Kearsley E, Van Oost K, Vanlauwe B, Chiragaga D, Bisimwa Heri-Kazi A, Moonen P, Sila A, Shepherd K, Bazirake Mujinya B, Van Ranst E, Baert G, Doetterl S, Six J (2021): The central African soil spectral library: a new soil infrared repository and a geographical prediction analysis. *SOIL* 7, 693-715, <https://doi.org/10.5194/soil-7-693-2021>

[26] Baumgartner S, Bauters M, **Barthel M**, Drake TW, Ntaboba LC, Bazirake BM, Six J, Boeckx P, Van Oost K (2021): Stable isotope signatures of soil nitrogen on an environmental-geomorphic gradient within the Congo Basin. *SOIL* 7, 83-94, <https://doi.org/10.5194/soil-7-83-2021>

[25] Pineda Lamprea PA, Bauters M, Verbeeck H, Baez S, **Barthel M**, Bodé S, Boeckx P (2021): Ideas and perspectives: patterns of soil CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O fluxes along an altitudinal gradient – a pilot study from an Ecuadorian neotropical montane forest. *Biogeosciences*, 18, 413-421, <https://doi.org/10.5194/bg-18-413-2021>

[24] Butterbach-Bahl K, Gettel G, Kiese R, Fuchs K, Werner C, Rahimi J, **Barthel M**, Merbold L (2020): Livestock enclosures in drylands of Sub-Saharan Africa are overlooked hotspots of N<sub>2</sub>O emissions. *Nature Communications* 11, 4644, <https://doi.org/10.1038/s41467-020-18359-y>

[23] Baumgartner S, **Barthel M**, Drake TW, Bauters M, Makelele IA, Mugula JK, Summerauer L, Gallarotti N, Ntaboba LC, Van Oost K, Boeckx P, Doetterl S, Werner RA, Six J (2020): Seasonality, drivers, and isotopic composition of soil CO<sub>2</sub> fluxes from tropical forests of the Congo Basin. *Biogeosciences*, 17, 6207–6218, <https://doi.org/10.5194/bg-17-6207-2020>.

- [22] Yu L, Harris E, Lewicka-Szczebak D, **Barthel M**, Blomberg MRA, Harris SJ, Johnson MS, Lehman MF, Lüsberg J, Müller C, Ostrom NE, Six J, Toyoda S, Yoshida N, Mohn J (2020): What can we learn from N<sub>2</sub>O isotope data? – Analytics, processes and modelling. *Rapid Communications in Mass Spectrometry* 34:e8858. <https://doi.org/10.1002/rcm.8858>
- [21] Bauters M, Meeus S, **Barthel M**, Stoffelen P, De Deurwaerder H, Meunier F, Drake TW, Ponette Q, Ebuy J, Vermeir P, Beeckman H, Wyffels F, Bodé S, Verbeeck H, Vandeloek F, Boeckx P (2020): Century-long apparent decrease in intrinsic water-use efficiency with no evidence of progressive nutrient limitation in African tropical forest. *Global Change Biology*
- [20] Ibraim E, Denk T, Wolf B, **Barthel M**, Gasche R, Wanek W, Zhang S, Kiese R, Butterbach-Bahl K, Eggleston S, Emmenegger L, Six J, Mohn J (2020): Denitrification is the main nitrous oxide source process in grassland soils according to quasi-continuous isotopocules analysis and biogeochemical modeling. *Global Biogeochemical Cycles*, 33, e2019GB006505. <https://doi.org/10.1029/2019GB006505>.
- [19] Harris SJ, Lüsberg J, Xia L, Wei J, Zeyer K, Yu L, **Barthel M**, Wolf B, Kelly BFJ, Cendón DI, Blunier T, Six J, Mohn J (2020): N<sub>2</sub>O isotopocule measurements using laser spectroscopy: analyzer characterization and intercomparison. *Atmospheric Measurement Techniques* 13, 2797-2831, <https://doi.org/10.5194/amt-13-2797-2020>
- [18] Li X, He H, Zhang X, Yan X, Six J, Cai Z, **Barthel M**, Zhang J, Necpalova M, Ma Q, Li Z (2019): Distinct responses of soil fungal and bacterial nitrate immobilization to land conversion from forest to agriculture. *Soil Biology and Biochemistry* 134, 81-89
- [17] Drake TW, Van Oost K, **Barthel M**, Bauters M, Hoyt AM, Podgorski DC, Six J, Boeckx P, Trumbore SE, Ntaboba LC, Spencer RGM (2019): Mobilization of aged and biolabile soil carbon by tropical deforestation. *Nature Geosciences* 16, 383-408, doi: <https://doi.org/10.1038/s41561-019-0384-9>
- [16] Bauters M, Verbeeck H, Rütting T, **Barthel M**, Mujinya BB, Bamba F, Bodé S, Boyemba F, Bulonza E, Carlsson E, Eriksson L, Makelele I, Six J, Ntaboba LC, Boeckx P (2019): Contrasting nitrogen fluxes in African tropical forests of the Congo Basin. *Ecological Monographs*, 89(1)
- [15] Verhoeven E, **Barthel M**, Yu L, Celi L, Said-Pullicino D, Sleutel S, Lewicka-Szczebak D, Six J, Decock C (2019): Early season N<sub>2</sub>O emissions under variable water management in rice systems: source partitioning emissions using isotope ratios along a depth profile. *Biogeosciences* 16, 383-408
- [14] Verhoeven E, Decock C, **Barthel M**, Bertora C, Sacco D, Romani M, Sleutel S, Six J (2018): Nitrification and coupled nitrification-denitrification at shallow depths are responsible for early season N<sub>2</sub>O emissions under alternate wetting and drying management in an Italian rice paddy system. *Soil Biology and Biochemistry* 120, 58-69
- [13] Hörtnagl L, **Barthel M**, Buchmann N, Eugster W, Butterbach-Bahl K, Díaz-Pinés, Zeeman M, Klumpp K, Kiese R, Bahn M, Hammerle A, Lu H, Ladreiter-Knauss T, Burri S, Merbold L (2018): Greenhouse gas fluxes over managed grasslands in Central Europe. *Global Change Biology* 1:30, doi: 10.1111/gcb.14079 | **most cited article in Global Change Biology 2018**
- [12] Blessing CH, **Barthel M**, Gentsch L, Buchmann N (2016): Strong coupling of shoot assimilation and soil respiration during drought and recovery periods in beech as indicated by natural abundance  $\delta^{13}\text{C}$  measurements. *Frontiers in Plant Sciences* 7:1710, doi: 10.3389/fpls.2016.01710
- [11] Hunt JE, Laubach J, **Barthel M**, Fraser A, Phillips RL (2016): Carbon budgets for an irrigated intensively-grazed dairy pasture and an unirrigated winter-grazed pasture. *Biogeosciences* 13: 2927-2944, doi:10.5194/bg-13-2927-2016
- [10] Lehmann MM, Wegener F, **Barthel M**, Werner C, Buchmann N, Siegwolf RW, Werner RA (2016): Metabolic fate of the carboxyl groups of malate and pyruvate and their influence on  $\delta^{13}\text{C}$  of leaf respired CO<sub>2</sub> during light enhanced dark respiration. *Frontiers in Plant Sciences* 7: 739. doi:10.3389/fpls.2016.00739
- [9] Laubach J, **Barthel M**, Fraser A, Hunt JE, Griffith DWT (2016): Combining two complementary micrometeorological methods to measure CH<sub>4</sub> and N<sub>2</sub>O fluxes over pasture. *Biogeosciences* 13: 1309-1327, doi:10.5194/bg-13-1309-2016
- [8] Blessing C, **Barthel M**, Buchmann N (2015): Bias in estimated online leaf carbon isotope discrimination due to woody tissues. *Isotopes in Environmental and Health Studies* 51(1): 109-123, doi:10.1080/10256016.2015.1007050
- [7] **Barthel M**, Sturm P, Hammerle A, Gentsch L, Siegwolf R, Buchmann N, Knohl A (2014): Soil H<sub>2</sub><sup>18</sup>O labeling reveals the effect of drought on C<sup>18</sup>OO fluxes to the atmosphere. *Journal of Experimental Botany* 65(20): 5783-5793, doi: 10.1093/jxb/eru312
- [6] **Barthel M**, Cieraad E, Zakharova A, Hunt JE (2014): Sudden cold temperature delays plant carbon transport and shifts allocation from growth to respiratory demand. *Biogeosciences* 11: 1425-1433, doi:10.5194/bg-11-1425-2014
- [5] Gentsch L, Sturm P, Hammerle A, Siegwolf R, Wingate L, Ogee J, Baur T, Pluess P, **Barthel M**, Buchmann N, Knohl A (2014): Carbon isotope discrimination during branch photosynthesis of *Fagus sylvatica*: Field measurements using laser spectroscopy. *Journal of Experimental Botany* 65(6): 1481-1496, doi: 10.1093/jxb/eru024
- [4] Burri S, Sturm P, Baur T, **Barthel M**, Knohl A, Buchmann N (2014): The effect of physical back-diffusion of <sup>13</sup>CO<sub>2</sub> tracer on the coupling between photosynthesis and soil CO<sub>2</sub> efflux in grassland. *Isotopes in Environment and Health Studies* 50(4): 497-513, doi:10.1080/10256016.2014.893237
- [3] **Barthel M**, Hammerle A, Sturm P, Gentsch L, Baur T, Knohl A (2011): The diel imprint of leaf metabolism on the  $\delta^{13}\text{C}$  signal of soil respiration under control and drought conditions. *New Phytologist* 192(4): 925-938, doi:10.1111/j.1469-8137.2011.03848.x
- [2] Brüggemann N, Gessler A, Kayler Z, Keel SG, Badeck F, **Barthel M**, Boeckx P, Buchmann N, Brugnoli E, Esperschütz J, Gavrichkova O, Ghashghaie J, Gomez-Casanovas N, Keitel C, Knohl A, Kuptz D, Palacio S, Salmon Y, Uchida Y, Bahn M (2011): Carbon allocation and carbon isotope fluxes in the plant–soil–atmosphere continuum: a review. *Biogeosciences* 8: 3457-3489, doi:10.5194/bg-8-3457-2011
- [1] **Barthel M**, Sturm P, Knohl A (2011) Soil matrix tracer contamination and canopy re-cycling did not impair <sup>13</sup>CO<sub>2</sub> plant-soil pulse labeling experiments. *Isotopes in Environmental and Health Studies* 47(3): 359-371, doi:10.1080/10256016.2011.587610

## miscellaneous

- [9] Giller KE, Pullemann M, Sassen M, Pronk A, Pratihast A, Velthof G, Rahn E, Barthel M, Lourenço KS, Diaz A (2023): Ground Zero? Let's get real on regeneration: Report 1: state of the art and indicator selection. Wageningen University & Research
- [8] **Barthel M**, Bauters M (2022) Climate Change in the Congo Basin. *Gorilla Journal* no. 65
- [7] Summerauer L, **Barthel M** (2022) Ecological Research in the Kivu Region. *Gorilla Journal* no. 64
- [6] Dötterl S, Drake T, Bauters M, Van Oost K, **Barthel M**, Hoyt A (2020) Environmental research in the heart of Africa: The Congo Biogeochemistry Observatory: The role of the changing Tropics for future global carbon dynamics. *Open Access Government*, vol. Jan20: no. 25, pp. 328-329, Crewe: Adjacent Digital Politics Ltd., 2020.
- [5] Six J (2016) Biogeochemistry in the Congo. Pan European Networks, *Science and Technology* 21.
- [4] Hunt J, Laubach J, **Barthel M**, Fraser A, Phillips RL (2014) Role of grazers in the carbon budget for irrigated dairy farm. *Proceedings of the 5<sup>th</sup> Australasian Dairy Science Symposium* 2014: 185-187.
- [3] **Barthel M** (2012) The effect of drought on the carbon and water cycling within the atmosphere-plant-soil system using carbon and oxygen stable isotopes. *Dissertation ETH. No 20103, ETH Zurich* 147p.
- [2] **Barthel M**, Sturm P, Gentsch L, Knohl A (2010) Technical Note: A combined soil/canopy chamber system for tracing  $\delta^{13}\text{C}$  in soil respiration after a  $^{13}\text{CO}_2$  canopy pulse labelling. *Biogeosciences Discussions* 7: 1603-1631, doi:10.5194/bgd-7-1603-2010.
- [1] **Barthel M** (2007) Seasonal variations in N turnover in an intensively managed cropland - key factors affecting  $\text{N}_2\text{O}$  emissions. *Master Thesis, University of Jena* 59p.

## CONFERENCE CONTRIBUTIONS | \*talk, °poster, ~meeting, #convener, ^virtual

- \***Barthel, M.** Ruki, der schwarze Dschungel Fluss. Treffpunkt Science City (24 March 2024), *Zurich, Switzerland* [[link](#)]
- ^\***Barthel, M.** CongoPeat Project Meeting (2023):  $\text{CH}_4$  fluxes from a non-peat forming swamp forest of the Cuvette Centrale. *Leicester, UK*, 29.-30. March 2023
- ^NASA CMS-iLEAPS Remote Sensing of Wetland Methane Emissions workshop (17.-18. May 2022)
- ^Baumgartner S, Drake T, **Barthel M** (2021): Cuvette Centrale Expedition – Challenges associated with fieldwork in the DR Congo. TECLIM seminar, *UC Louvain, Belgium*
- #°**Barthel, M**, Bauters M, Ntaboba LC, Baumgartner S, Gallarotti N, Dériaz N, Summerauer L, Boeckx P, Rukeza M, Vanlauwe B, Van Oost K, Makelele I, Six J (2019): Low  $\text{N}_2\text{O}$  emissions from tropical forests of the Congo Basin as a result of complete denitrification. Isotope Workshop: What can we learn from  $\text{N}_2\text{O}$  isotope data?, 23.-24. October 2019 in *Zurich, Switzerland*
- \***Barthel, M**, Bauters M, Ntaboba LC, Baumgartner S, Gallarotti N, Dériaz N, Summerauer L, Boeckx P, Rukeza M, Vanlauwe B, Van Oost K, Makelele I, Six J (2019): Tropical forests of the Congo Basin are a weak source of  $\text{N}_2\text{O}$  and a strong sink for  $\text{CH}_4$ . NCGG8 8<sup>th</sup> International Symposium on Non- $\text{CO}_2$  Greenhouse Gases, 12.-14. June 2019 in *Amsterdam, The Netherlands*
- °**Barthel, M**, Bauters M, Ntaboba LC, Baumgartner S, Gallarotti N, Dériaz N, Summerauer L, Boeckx P, Rukeza M, Vanlauwe B, Van Oost K, Makelele I, Six J (2018): Magnitude and isotopic signature of soil-derived  $\text{N}_2\text{O}$  and  $\text{CO}_2$  measured across several tropical forest sites in the DR Congo. TropSOC kick-off meeting, 5.-9. March 2018 in *Bukavu, DR Congo*
- \***Barthel, M**, Bauters M, Ntaboba L, Baumgartner S, Gallarotti N, Dériaz N, Summerauer L, Boeckx P, Rukeza M, Vanlauwe B, Van Oost K, Makelele I, Six J (2017): Magnitude and isotopic signature of soil-derived  $\text{N}_2\text{O}$  measured across several tropical forest sites in the DR Congo. IsoCycles 2017, 15.-20. Oct 2017 in *Ascona, Monte Verità, Switzerland*
- ~**Barthel, M** (2017): Agriculture's Global Warming Potential: multilateral approaches for predictions, CNRS Ecotron facility 9. March 2017 in *Montpellier, France*
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- \***Barthel M**, Decock C, Wilde B, Mikita C, Verhoeven E, Mohn J, Six J (2015): On-line assessment of  $\delta^{15}\text{N}^\alpha$ ,  $\delta^{15}\text{N}^\beta$ ,  $\delta^{18}\text{O}$  of soil-derived  $\text{N}_2\text{O}$  using quantum cascade laser spectroscopy. NORA-ICOS-SITES workshop on "Gas flux measurements in terrestrial ecosystems - state of the art and emerging technologies", 10.-13. May 2015 in *Gothenburg, Sweden*

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