

CURRICULUM VITAE – Sebastian Doetterl

ASSISTANT PROFESSOR IN SOIL RESOURCES, ETH ZURICH (CH)

1. Personal Data

Name: Sebastian Doetterl
Date of birth: 29.06.1982
Nationality: German
Email: sdoetterl@usys.ethz.ch
Academic profile: [ORCID ID](#); [Google Scholar](#); H-Index=21; i10-Index = 36
Group website: <http://www.soilres.ethz.ch/>
Network website: <https://www.congo-biogeochem.com/>

2. Education

University degrees

2013 Doctorate (graduation 8.03.2013)
 TECLIM/ **Université catholique de Louvain**/ Belgium
 Name of Supervisor: Prof. Dr. Kristof van Oost
2008 Diploma in Geography
 Institute of Geography/ **Regensburg University**/ Germany

3. Institutional appointments & Professional Experience

2019 – current **Assistant Professor Soil Resources** (Tenure Track)
 Department of Environmental Systems Science / ETH Zurich / Switzerland
2017 – 2021 **DFG Emmy Noether research group leader**
 Institute of Geography / Augsburg University / Germany
2014 – 2018 **Post-doc associate**
 ISOFYS / Ghent University / Belgium
2014 – 2017 **Research assistant**
 Institute of Geography / Augsburg University / Germany
2014 **Visiting researcher** (4 months)
 University of California / Merced (CA) / USA
2013 – 2014 **Post-doc researcher**
 ISOFYS / Ghent University / Belgium
2010 **Visiting researcher** (5 months)
 University of California / Davis (CA) / USA
2006 – 2007 **Internship** (5 months)
 German Development Service / Tena / Ecuador

4. Memberships

Research Networks: *Open Innovation in Life Sciences; Waldlabor Zurich; World Food System Center; Zurich-Basel Plant Science Center; Congo Biogeochemistry Observatory* (Co-founder)

Societies: *American Geophysical Union; European Geoscience Union; Soil Science Society of Germany; Soil Science Society of Switzerland; Union of German Geographers*

5. Honours and awards

2022 GS-EAG Outreach lecturer of the European Association of Geochemistry in underrepresented regions of the world (2022-2023)

- 2020 ERC Starting Grant (final phase of selection process – not funded, rated A “Excellent”)
- 2019 EGU Outstanding Early Career Scientist Award 2020 (Soil System Sciences Division)
- 2019 Outstanding peer-reviewer recognition for *Nature* research journals 2018
- 2016 Editors’ Citation for Excellence in Refereeing 2015 for *Global Biogeochemical Cycles*
- 2013 Wiley Award 2013 by the British Society for Geomorphology for the best paper published in *Earth Surface Processes and Landforms* [selected from the 2012 volume of the journal]
-

6. Teaching and supervision commitments

At both ETH Zurich and Augsburg University I have been teaching several courses at both Bachelor and Master’s levels in Soil Science, Physical Geography as well as Earth and Environmental Sciences in general. Courses entail multiple lectures, field and lab courses. Currently, I am involved in the teaching of four courses at ETH Zürich in a prominent role, and participate in a minor role to a seminar series and several excursions. Details concerning my teachings can be found in the separate teaching statement of this application.

To this moment, I have functioned as the main supervisor for 11 bachelor and 14 master students, 10 PhD students (3 finalized, 7 ongoing from which additional 3 will finish in the upcoming 6 months) and 6 post-doctoral researchers (4 finalized, 2 ongoing). I functioned as co-supervisor of 8 additional PhD students (3 finalized, 5 ongoing). I was host of 6 visiting researchers at the post-doctoral and doctoral candidate level.

7. Academic engagement

Committees

Committee member and external examiner for 13 doctoral theses. Chair of 11 doctoral defenses. Supervisor of 6 internships. Panel member for call preparation “Human-Environment interaction” by VW foundation; Panel member of 2 professorial search and hiring committees at ETHZ and EPFL with the additional function as Gender Advocate (at ETHZ search).

Peer-review for scientific journals

I review manuscripts mostly for interdisciplinary environmental science and for disciplinary soil journals, including: Biogeochemistry; Biogeosciences; Catena; Earth Surface Processes and Landforms; European Journal of Soil Science; Geoderma; Global Biogeochemical Cycles; Global Change Biology; Nature; Nature Climate Change; Nature Communications; Nature Ecology and Evolution, Nature Geoscience; Scientific Reports; SOIL, Soil Biology and Biogeochemistry; Soil Science Society of America Journal.

Peer-review for funding agencies

US National Science Foundation (NSF, 1 review); German Research Foundation (DFG, 4 reviews); French National Research Agency (ANR, 1 Review); Swiss National Science Foundation (SNF, 1 review); Alexander von Humboldt Foundation (2 reviews).

Organisation of scientific meetings and workshops

Eurosoil 2021 organization committee member; organization panel of the department retreat and D-USYS-ETH conference in 2019; Convener and co-convener of seven sessions (symposia, workshops, short courses) at the European Geosciences Annual Reunion since 2014.

Institutional responsibilities (Selection)

Ongoing: Editor Geoderma Regional; Associate Editor European Journal of Soil Science Member of ETH D-USYS leadership panel in the Institute of Terrestrial Ecosystems (ITES); Co-organizer of the ETH D-USYS Soil Systems Seminar Series; Preparation of concept for new GIS Unit at ETH D-USYS; Co-chair of the ETH D-USYS Room Commission; Co-founder of the Congo Biogeochemistry Observatory ([CBO](#)).

Past: EGU Committee member “Early career scientist award” Division Soil System Science; EGU Committee chair & member subdivision “Soil Organic Matter”; SOIL (Special Issue Leading Guest editor “Tropical biogeochemistry of soils in the Congo Basin and the African Great Lakes region”); Co-organizer of the ETH institute excursion 2020 & ITES Research day 2019.

8. Talks and outreach

Keynote speaker at 7 occasions. Invited speaker at 26 occasions. I am also a frequent convener and presenter at main conferences in my field of research (AGU & EGU). Since 2019, me and my group combined have presented our research through talks and posters through >50 separate conferences contributions and co-organized a total of 10 conference sessions.

Selected key talks

- 2023 **Keynote talk**, “Accelerated soil development – A key process to understand future biogeochemical cycles in arctic and alpine environments”, European Healthy Soils Conference, *Muttenz, Switzerland*.
- 2023 **Keynote talk**, “Improving tropical soil carbon storage as a nature-based solution for climate mitigation?”, DBG 2023, *Halle, Germany*.
- 2021 **Award lecture**, “Soils in a changing world”, *Outstanding Early Career Scientist Award EGU 2020, Vienna, Austria (postponed from 2020 due to Covid-19)*.
- 2019 **Invited talk**, “Global soil respiration will be less resilient to warming than anticipated”, *ETH USYS-Conference, Davos, Switzerland*.
- 2016 **Keynote talk**, “Erosion, deposition and organic matter: Biogeochemical cycles in dynamic landscapes”, *Goldschmidt 2016, Yokohama, Japan*.
- 2013 **Award lecture**, “Eroding the C cycle: Towards constraining the magnitude of global agricultural sediment and soil organic carbon fluxes”, *Wiley Award British Society of Geomorphology Annual Meeting 2013, London, UK*.

Outreach

I frequently engaged with the press and public to raise awareness for pressing issues with respect to soil functioning and soil diversity across landscapes and regions. Additionally, since October 2021, me and my group govern two twitter channels for the promotion and communication of projects and topics related to our research. Currently ~1000 followers.

Selected activities (within last three years)

- 2023 [Outreach lecturer](#) of the European Association of Geochemistry in the EAG outreach program for Africa
- 2023 Soil booth at ETH's 2023 [Scientifica Science Festival](#) on the role of soils for healthy ecosystems and soil diversity
- 2023 [Media conference](#) and statement concerning project “Paddock trails” and the role of interdisciplinary animal health, farming and soil research. St Aubin, Switzerland.
- 2023 PM Magazine – Interview and TV documentary on project [Arctic Greening](#).
- 2022 Interview and podcast episode for the n-tv.de “[Klima-Labor Podcast](#)” to the topic of human influence on soils.
- 2021 Documentary for ETH' Globe magazine on the ETH+ [Arctic Greening project](#)
- 2021 “[ETH Klimarunde](#)” Public round table discussion as an expert on negative emission potential of soils.

9. Granted research projects and acquired funding

Active and finalized grants as PI or co-PI

To date, I have acquired a total of 3.8 Mio € in research funds from third-party sources, distributed over 11 individual projects. As a host for PhD and Post-doc projects and fellowships, me and my group have accumulated an additional 1.6 Mio € distributed over 6 individual fellowships.

10. Publications and Impact

I have authored and published 66 publications, with 62 articles in ISI Journals, (excluding conference papers and published conference abstracts), 1 book chapter and 2 monographies. 7 additional manuscripts for ISI journals are currently under review. From all these contributions, I first authored 20 manuscripts and last authored 20 manuscripts. Since 2019, me and my group combined have presented our research through talks and posters through >50 separate conferences contributions. Additionally, since 2019, I have presented our work at additional 34 occasions as a keynote or invited speaker. **The full publication list of my group can be found at:** <https://soilres.ethz.ch/publications.html>.

Appendix A – List of publications (group members underlined)

Overview: [ORCID ID](#); [GOOGLE SCHOLAR](#)

Links to full publication list including full-text links and publications from group since arrival at ETH

<https://soilres.ethz.ch/publications.html>

Note that pre-prints of discussion papers were removed if final paper is published under its separate DOI.

in prep / in review / submitted

Doetterl S., Berhe A.A., Heckman K., Lawrence C., Schnecker J., Vargas R., Vogel C., Wagai R., Soil organic matter through the landscape lens. *Nature Reviews Earth and Environment* (invited, in prep)

Maier, Annina, Moser M., Doetterl S., Griepentrog M. Parent material geochemistry as a driver for contrasting patterns of plant matter input and soil organic carbon stocks in alpine ecosystems. *Biogeosciences* (in prep).

Segura D., Jordaan K., Diez B., Tamayo-Leivaa J., **Doetterl S.**, Wasner D., Cifuentes-Anticevic J., Casanova-Katny A. Diversity and Functionality of Soil Prokaryotic Communities in Antarctic Volcanic Soils: Insights from Penguin-Influenced Environments. *Polar Biology* (in review).

Tamale J., Hutson J., Nasta P., van Straaten O., Turyagyenda LF., **Doetterl S.**, Fiener P. Impact of urea fertilization rates on nitrogen dynamics, productivity, and profitability from Ugandan sugarcane plantations. *Soil Use and Management* (revision, in review).

Von Fromm S., Hoyt AM, Sierra CA., **Doetterl S.**, Trumbore SE. Large variation in global patterns of organic carbon abundance and persistence in soils across pedo-climatic regions. *Global Biogeochemical Cycles* (in review).

Wasner D., Griepentrog M., Abramoff R., Zagal Venegas E., Boeckx P., **Doetterl S.** Diverging trends of soil carbon stabilization and accumulation across soil types and climate. *Global Biogeochemical Cycles* (in review). [10.21203/rs.3.rs-2856937/v1](https://doi.org/10.21203/rs.3.rs-2856937/v1) (DOI corresponds to a pre-print in a public repository).

Zhang L., Yang L., Crowther T.W., Zohner C.M., **Doetterl S.**, Heuvelink G.B.M., Wadoux A.M.J.C., Zhu, A., Pu Y., Shen F., Ma H., Zou Y., Zhou C. Global patterns of top- and subsoil organic carbon turnover times. *Global Change Biology* (in review).

2023

Garland G., Koestel J., Johannes A., Heller O., **Doetterl S.**, Or D., Keller T. Perspectives on the misconception of levitating soil aggregates. *SOIL* (accepted, pre-print). <https://doi.org/10.5194/egusphere-2023-1144>

Jungkunst H., Heitkamp F., **Doetterl S.**, Sylvester S., Sylvester M., Vetter V., Maqsood S., Zeppenfeld T., Lehndorff E., Kessler M., Fielder S. Land-use induced soil carbon stabilization at the expense of weathering as evidenced in pristine Andean soils. *Scientific reports* 13: 4584. <https://www.nature.com/articles/s41598-023-30801-x.pdf>

Kidinda LK., Babin D., **Doetterl S.**, Kalbitz K., Mujinya BB., Vogel C. Extracellular polymeric substances are closely related to land cover, microbial communities, and enzyme activity in tropical soils. *Soil Biology and Biochemistry* 187: 109221. <https://doi.org/10.1016/j.soilbio.2023.109221>

Kidinda LK., **Doetterl S.**, Kalbitz K., Bukombe B., Babin D., Mujinya BB., Vogel C. Relationships between geochemical soil properties and microbial nutrient acquisition in tropical forest and cropland soils. *Applied Soil Ecology* 181: 104653. <https://doi.org/10.1016/j.apsoil.2022.104653>

Reichenbach M., Fiener P., Hoyt A., Trumbore S., Six J., **Doetterl S.** Carbon stocks and patterns in deeply weathered tropical mineral soils are independent from land use but vary with soil geochemistry. *Global Change Biology* <http://doi.org/10.1111/gcb.16622> .

Safanelli J.L., et al. An interlaboratory comparison of mid-infrared spectra acquisition: Instruments and procedures matter. *Geoderma* (accepted, pre-print). <https://dx.doi.org/10.2139/ssrn.4548803>

Sáez Sandino, T., Gallardo, A., Eldridge, D., **Doetterl S.**, Berhe AA., Delgado-Baquerizo M. Plant footprint decreases the diversity of topsoil organic matter after millions of years of ecosystem development. *Global Ecology and Biogeography* 00: 1-11. <https://doi.org/10.1111/geb.13770>

Six J., **Doetterl S.**, Laub M., Mueller C.R., Van den Broek M. The six R's of how and when to test for soil C saturation. *SOIL* (pre-print, in review). <https://doi.org/10.5194/egusphere-2023-2221>

Stoner S., Schrumpf M., Hoyt A., Sierra C.A., **Doetterl S.**, Galy V., Trumbore S. How well does ramped thermal oxidation quantify the age distribution of soil carbon? Assessing thermal stability of physically and chemically fractionated soil organic matter. *Biogeosciences* 20: 3151-3163. <https://doi.org/10.5194/bg-20-3151-2023>

Stoner S., S Trumbore, González-Pérez J., Schrumpf M., Sierra C.A., Chadwick O., Hoyt A., **Doetterl S.** Relating mineral-organic matter stabilization mechanisms to radiocarbon and carbon quality distributions across soil types using ramped thermal oxidation. *Philosophical Transactions of the Royal Society A Society A* 381: 20230139. <https://doi.org/10.1098/rsta.2023.0139>

Von Fromm S., Doetterl S., Butler BM., Aynekulu E., Berhe AA., Haeefele SM., McGratch SP., Sheperd KD., Six J., Winowiecki LA., Trumbore SE., Hoyt AM. Controls on timescales of soil carbon stabilization in sub-Saharan Africa. *Global Change Biology* (accepted).

Wüst C., Heller S., Ammann C., Paul S., **Doetterl S.**, Leifeld J. Methane and nitrous oxide emissions from rice grown on organic soils in the temperate zone. *Agriculture, Ecosystems and Environment* 356: 108641. <https://doi.org/10.1016/j.agee.2023.108641>

2022

Bauters M., Janssens IA., Wasner D., Doetterl S., Vermeir P., Griepentrog M., Drake T., Six J., Barthel M., Baumgartner S., Van Oost K., Makelele I., Ewango C., Verheyen K., Boeckx P. Increasing calcium scarcity along Afrotropical forest succession. *Nature Ecology and Evolution* 6, 1122-1131. <https://doi.org/10.1038/s41559-022-01810-2>

Bauters M, Grau, O., **Doetterl S.**, Heineman KD., Dalling JD., Prada CM., Griepentrog M., Malhi Y., Terhi Riutta Scalon M., Majalap N., Inagawa T., Beeckman H., van den Bulcke J., Dourdain A., Herault B., Vermeir P., Makelele I., Fernández PR., Sardans J., Peñuelas J., Janssens IA. Tropical wood stores substantial amounts of nutrients, but we have limited understanding. *Biotropica* 00, 1-11. <https://doi.org/10.1111/btp.13069>

Bukombe B., Bauters M., Boeckx P., Cizungu LN., Cooper M., Fiener P., Kidinda Kidinda L., Makelele I., Iragi Muhindo D., Rewald B., Verheyen K., **Doetterl S.** Soil geochemistry - and not topography - as a major driver of carbon allocation, stocks and dynamics in forests and soils of African tropical montane ecosystems. *New Phytologist* 236, 1676-1690. <https://doi.org/10.1111/nph.18469>.

Doetterl S., Abramoff R., Cornelis J.T., Fiener G., Frossard A., Garland G., Kaiser M., Laub M., Opfergelt S., van de Broek M., van den Broek S., von Fromm S. Understanding soil organic carbon dynamics at larger scales. In: Rumpel C. (editor). Understanding and fostering soil carbon sequestration. *Burleigh Dodds Science Publishing*, Cambridge, UK. <http://dx.doi.org/10.19103/AS.2022.0106.05>

Hidalgo M., de los Ángeles Sepúlveda M., Muñoz C., Casanova M., Wasner D., Bodé S., **Doetterl S.,** Boeckx P., Zagal E. Predicting soil organic carbon stabilization and turnover using $\delta^{13}\text{C}$ in depth profiles, assessed by near infrared spectroscopy, under permanent grassland along a latitudinal transect in Chile. *Journal of Soil Science and Plant Nutrition* 22, 2105-2117. <https://doi.org/10.1007/s42729-022-00797-w>.

Kidinda LK., Olagoke FK, Vogel C, Kalbitz K, Bukombe B., Doetterl S. Microbial processes in tropical montane forest soils developed from different parent materials – an incubation experiment. *Journal of Plant Nutrition and Soil Science* 00, 1-14. <https://doi.org/10.1002/jpln.202100274>

Mainka M., Summerauer L., Wasner D., Garland G., Griepentrog M., Berhe A., and Doetterl S. Soil geochemistry as a driver of soil organic matter composition: insights from a soil chronosequence, *Biogeosciences* 19, 1675-1689. <https://doi.org/10.5194/bg-19-1675-2022>.

Spohn M., Diáková K., Aburto F., **Doetterl S.,** Borovec J. Sorption and desorption of organic matter in soils as affected by phosphate. *Geoderma* 405, 115377. <https://doi.org/10.1016/j.geoderma.2021.115377>.

Tamale J., Peter, F. Turyagyenda Laban Hüppi Roman, van Straaten, O., Doetterl, S. Soil greenhouse gas fluxes following conversion of tropical forests to fertilizer-based sugarcane systems in northwestern Uganda. *Agriculture, Ecosystems and Environment* 333, 107953. <https://doi.org/10.1016/j.agee.2022.107953>

Zhao P., **Doetterl S.,** Wang Z., Hoyt AM., Wang E., Fallu, D., Brown, A. Yu H., Quijano L., Six J., Van Oost K. Factors controlling SOC stabilization in colluvial soils along a climate and soil weathering gradient. *European Journal of Soil Science* 73(5), e13311. <http://dx.doi.org/10.1111/ejss.13311>

2021

Bagalwa RM., Chartin C., Baumgartner S., Mercier S., Syauswa M., Samba VC., Zabona MT., Karume, Cizungu NL., Barthel, M., **Doetterl S.,** Six, J., Boeckx, P., Van Oost, K. Spatial and temporal patterns of rainfall erosivity in the Lake Kivu region: insights from a meteorological observatory network. *Progress in Physical Geography* 45, 866-884. <https://doi.org/10.1177/03091333211001793>

Bukombe B., Fiener P., Hoyt A., Kidinda KL., **Doetterl S.** Heterotrophic soil respiration and carbon cycling in geochemically distinct African tropical forest soils. *SOIL* 7, 639-659. <https://doi.org/10.5194/soil-7-639-2021>

Bauters M., Moonen P., Summerauer L., Doetterl S., Griepentrog M., Mumbanza F., Kearsley E., Ewango C., Boyemba BF., Six J., Muys B., Verbist B., Boeckx P., Verheyen K. Soil nutrient depletion and functional composition shift with repeated clearing in secondary forests of the Congo Basin. *Ecosystems* 24, 1422-1435. <https://doi.org/10.1007/s10021-020-00593-6>

de los Angeles Sepulveda M., Hidalgo M., Araya J., Casanova M., Cristina Muñoz C., **Doetterl S.,** Bodé S., Boeckx P., Zagal E. Near-infrared spectroscopy: An alternative tool for the assessment of stable carbon isotopes in a wide variety of soil profiles from Chile. *Geoderma Regional* 25, e00397. <https://doi.org/10.1016/j.geodrs.2021.e00397>

Doetterl S., Bauters M., Berhe A.A., Chivenge P., Finke P., Hauser S. Preface: Tropical Biogeochemistry of Soils in the Congo Basin and the African Great Lakes Region – Preface of the Editors for the Special Issue. *SOIL*. https://soil.copernicus.org/articles/soil-special_issue1134-preface.pdf

- Doetterl S.**, Alexander J., Fior S., Frossard A., Magnabosco C., Van de Broek M., Westergaard KB. Game changers: Will accelerated soil development be a driver of Arctic Greening in the late 21st century? *Journal of Plant Nutrition and Soil Science* 185, 19-23. <https://doi.org/10.1002/jpln.202100334>
- Doetterl S.**, Asifiwe, RK., Baert, G., Bamba F., Bauters M., Bukombe B., Cadisch G, Cizungu L., Cooper M., Hoyt A., Kabaske C., Kalbitz K., Kidinda KL., Maier A., Mainka M., Mayrock J., Muhindo D., Mujinya B., Mukotanyi SM., Nabahungu L., Reichenbach M., Rewald B., Six J., Stegmann A., Summerauer L., Unselde R., Van Oost K., Verheyen K., Vogel C., Wilken E., Fiener P. Organic matter cycling along geochemical, geomorphic and disturbance gradients in forests and cropland of the African Tropics - Project TropSOC DATABASE_v1.0. *Earth System Science Data* 13, 4133–4153, <https://doi.org/10.5194/essd-13-4133-2021>
- Doetterl S.**, Bukombe B., Cooper M., Kidinda L., Muhindo D., Reichenbach M., Stegmann A., Summerauer L., Wilken F., Fiener P. TropSOC Database. Version 1.0. GFZ Data Services. <https://doi.org/10.5880/figeo.2021.009>
- Haaf D., Six J., **Doetterl S.** Global patterns of geo-ecological controls for the response of soil respiration to warming. *Nature Climate Change* 11, 623-627. <https://doi.org/10.1038/s41558-021-01068-9>
- Reichenbach M., Fiener P., Garland G., Griepentrog M., Six J., **Doetterl S.** The role of geochemistry in organic carbon stabilization in tropical rainforest soils. *Soil* 7, 453-475. <https://doi.org/10.5194/soil-7-453-2021>
- Stan KD., Sanchez-Azofeifa A., Duran SM., Guzman-Quesada A., Hesketh M., Laakso K., Portillo-Quintero C., Rankine C., **Doetterl S.** Tropical Dry Forest Resilience and Water Use Efficiency: An analysis of productivity under climate change. *Environmental Research Letters* 16 (5), 054027. <https://doi.org/10.1088/1748-9326/abf6f3>
- Stoner S., Hoyt MH., Trumbore S., Sierra C., Schrumpf, M., **Doetterl S.**, Baisden TW., Schipper, L. Soil organic matter turnover rates increase to match increased inputs in grazed grasslands. *Biogeochemistry* 156, 145-160. <https://doi.org/10.1007/s10533-021-00838-z>
- Summerauer L., Baumann P., Ramirez-Lopez L., Barthel M., Bauters M., Bukombe B., Reichenbach M., Boeckx P., Kearsley E., Van Oost K., Vanlauwe B., Chiragaqa D., Heri-Kazi A.B., Moonen P., Sila A., Shepherd K., Bazirake Mujinya B., Van Ranst E., Baert G., **Doetterl S.**, Six J. Filling a key gap: a soil infrared library for central Africa. *SOIL* 7, 693-715. <https://doi.org/10.5194/soil-7-693-2021>
- Tamale J., Hüppi R., Griepentrog M., Turyagyenda L.F., Barthel M., **Doetterl S.**, Fiener P., van Straaten O. 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>
- von Fromm, S.F., Hoyt, A.M., Acquah, G.E., Aynekulu, E., Berhe, A.A., Haefele, S., Lange, M., McGrath, S.P., Shepherd, K.D., Sila, A.M., Six, J., Towett, E.K., Trumbore, S.E., Vågen, T., Weullow, E., Winowiecki, L.A., **Doetterl, S.** Continental-scale controls on soil organic carbon across sub-Saharan Africa. *Soil* 7, 305-332. <https://doi.org/10.5194/soil-7-305-202>
- Wilken E., Fiener P., Ketterer M., Meusburger K., Muhindo D., Van Oost K., **Doetterl S.** Assessing soil erosion of forest and cropland sites in wet tropical Africa using ²³⁹⁺²⁴⁰Pu fallout radionuclides. *Soil* 7, 399-414. <https://doi.org/10.5194/soil-7-399-2021>
- Zhao P., Fallu DJ., Cucchiario S., Tarolli P., Waddington C., Cockcroft D., Snape L., Lang A., **Doetterl S.**, Brown AG., Van Oost, K. Soil organic carbon stabilization mechanisms and temperature sensitivity in old terraced soils. *Biogeosciences* 18, 6301–6312. <https://doi.org/10.5194/bg-18-6301-2021>

2020

- Baumgartner S., Barthel M., Drake T.W., Bauters M., Makele I.A., Mugula J.K., Summerauer L., Gallarotti N., Ntaboba L.C., Van Oost K., Boeckx P., **Doetterl S.**, Werner R.A. Six J. Seasonality, drivers and isotopic composition of soil CO₂ fluxes from tropical forests of the Congo Basin. *Biogeosciences* 17, 6207-6218. <https://doi.org/10.5194/bg-17-6207-2020>.
- Doetterl S.**, Drake T., Bauters M., Van Oost K., Barthel M., Hoyt A. Environmental research in the heart of Africa: The Congo Biogeochemistry Observatory: The role of the changing Tropics for future global carbon dynamics. **Editorial**, *Open Access Government* 25, 328-329. <https://doi.org/10.3929/ethz-b-000390585>.
- Kidinda LK, Olagoke FK, Vogel C, Kalbitz K, **Doetterl S.** Patterns of microbial processes shaped by parent material and soil depth in tropical rainforest soils. *Soil Discussions (pre-print)*. <https://doi.org/10.5194/soil-2020-80>.
- Lawrence C., **Doetterl S.**, et al. An open-source database for the synthesis of soil radiocarbon data: International Soil Radiocarbon Database (ISRaD) version 1.0. *Earth System Science Data*, 12(1), 61-76. <https://doi.org/10.5194/essd-12-61-2020>.
- Pfeiffer M., Padarian J., Osorio R., Bustamante N., Olmendo G.F., Guevara M., Aburto F., Albornoz F., Antilén M., Araya E., Arellano E., Barret M., Barrera J., Boeckx P., Briceno M., Bunning S., Cabrol L., Casanova M., Cornejo P., Corradini F., Curaqueo G., **Doetterl S.**, Buran P., Escudéy M., Espinoza A., Francke S., Fuentes J.P., Fuentes M., Gajardo G., García R., Gallaud A., Galleguillos M., Gomez A., Hidalgo M., Ivelic-Sáez J., Mashalaba L., Matus F., Meza F., de la Luz Mora M., Mora J., Munoz C., Norambuena P., Olivera C., Ovalle C., Panichini M., Pauchard A., Pérez-Quezada J., Radic S., Ramirez J., Riveras N., Ruiz G., Salazar O., Salgado I., Seguel O., Sepúlveda M., Sierra C., Tapia Y., Tapia F., Toledo B., Torrico J.M., Valle S., Vargas R., Wolff M., Zagal E. (2020). CHLSOC: The Chilean Soil Organic Carbon database, a multi-institutional collaborative effort. *Earth System Science Data* 12(1), 457-468. <https://doi.org/10.5194/essd-12-457-2020>.

2019

Finke P., Opolot E., Balesdent J., Berhe A.A., Boeckx P., Cornu S., Harden J., Hatté C., Williams E., **Doetterl S.** Can SOC modelling be improved by accounting for pedogenesis? *Geoderma* 338, 513-524. <https://doi.org/10.1016/j.geoderma.2018.10.018>.

2018

Doetterl S., Berhe A.A., Harden J.W., Vogel C., Nadeu E., Trumbore S., Fuchslueger L., Arnold C., Schneckner J., Finke P., Bodé S., Griepentrog, M., Boeckx P. Links among warming, carbon and microbial dynamics mediated by soil mineral weathering. *Nature Geoscience* 11, 598-593. <https://doi.org/10.1038/s41561-018-0168-7>.

Vermeire M.-L. Cornelis J.-T., van Ranst E., Bonneville S., **Doetterl S.**, Delvaux B. Soil microbial populations shift as processes protecting organic matter change during podsolization. *Frontiers of Environmental Science* 6 (70), 1-16. doi.org/10.3389/fenvs.2018.00070.

2017

Bauters M., Verbeek H., **Doetterl S.**, Ampoorter E., Baert G., Vermeir P., Verheyen K., Boeckx P. Functional composition of tree communities changed topsoil properties in an old experimental tropical plantation. *Ecosystems* 7, 861-871. <https://doi.org/10.1007/s10021-016-0081-0>

Bouchoms S., Wang Z., Vanacker V., **Doetterl S.**, Van Oost K. Modelling long-term soil organic carbon dynamics under the impact of land cover change and soil redistribution. *Catena* 151, 63-73. <https://doi.org/10.1016/j.catena.2016.12.008>

Kearsley E., Moonen P., Hufkens K., **Doetterl S.**, Lisingo J., Toirambe B., Baert G., Steppe K., Muys B., Boeckx P., Beeckman H., Verbeek H. Model performance of tree-height diameter relationships in central Congo Basin. *Annals of Forest Science* 74 (7), 1-13. <https://DOI:10.1007/s13595-016-0611-0>

Kearsley E., Verbeek H., Hufkens K., Van de Perre F., **Doetterl S.**, Baert G., Beeckman H., Boeckx P., Huygens D. Functional community structure of monodominant *Gilbertiodendron dewereii* forest influenced by local environmental filtering. *Ecology & Evolution* 7, 295-304. <https://doi.org/10.1002/ece3.2589>

Wang, Z. Hoffmann, T., Govers, G., Kaplan, J., Six, J., **Doetterl, S.**, Van Oost, K. Human-induced erosion and burial offsets anthropogenic carbon emissions by land cover change. *Nature Climate Change* 7, 345-349. <https://doi.org/10.1038/NCLIMATE3263>

2016

Doetterl S., Nadeu E., Berhe A., Wang Z., Sommer M., Fiener P. Erosion, deposition and soil carbon: A review of process-level controls, experimental tools and models to address C cycling in dynamic landscapes. *Earth Science Reviews* 154, 102-122. <https://doi.org/10.1016/j.earscirev.2015.12.005>

Muñoz C., Cruz B. Rojo F., Campos J., Casanova M., **Doetterl S.**, Boeckx P., Zagal E. Temperature sensitivity of carbon decomposition in soil aggregates along a climatic gradient. *Journal of Soil Science and Plant Nutrition* 16, 461-476. <http://dx.doi.org/10.4067/S0718-95162016005000039>

2015

Doetterl S., Kearsley E., Bauters M., Hufkens K., Baert G., Lisingo G., Verbeek H., Boeckx, P. Above- vs. belowground carbon stock in similar tropical rainforest systems of the Congo basin driven by nutrient availability. *PLOS One* 10(11), e0143209. <https://doi.org/10.1371/journal.pone.0143209>

Doetterl S., Stevens A., Six J., Merckx R., Van Oost K., Casanova-Pinto M., Casanova-Katny A., Muñoz C., Boudin M., Zagal Venegas E., Boeckx P. Soil carbon storage controlled by interactions between geochemistry and climate. *Nature Geoscience* 8, 780-783. <https://doi.org/10.1038/ngeo2516>

Doetterl S., Cornelis, J.-T. Six J., Bodé S., Opfergelt, S., Boeckx, P., Van Oost K. Soil redistribution and weathering controlling the fate of geochemical and physical carbon stabilization mechanisms in soils of an eroding landscape. *Biogeosciences* 12(5), 1357-1371. <https://doi.org/10.5194/bg-12-1357-2015>

Wang Z., **Doetterl S.**, Vanclooster M., Van Wesemael B., Van Oost K. Constraining a coupled erosion and soil organic carbon model using hillslope-scale patterns of carbon stocks and pool composition. *JGR- Biogeosciences* 120, 452-465. <https://doi.org/10.1002/2014JG002768>

2014

Stevens F., Bogaert P., Van Oost K., **Doetterl S.**, Van Wesemael B. Regional scale characterization of the topographic control on the spatial distribution of soil organic carbon in cropland. *European Journal of Soil Science* 65, 539-552. <https://doi.org/10.1111/ejss.12153>

2013

Doetterl S., Stevens A., Van Wesemael B., Van Oost K. Soil-profile organic carbon assessment at high vertical resolution using closed-tube sampling and Vis-NIR spectroscopy. *Soil Science Society of America Journal* 77(4), 1430-1435. <https://doi.org/10.2136/sssaj2012.0410n>

Doetterl S., Stevens A., Quine T.A., Van Wesemael B., Van Oost K. Spatial-explicit regional-scale prediction of soil organic carbon stocks in cropland employing environmental variables and mixed-model approaches. *Geoderma* 204-205, 31-42. <https://doi.org/10.1016/j.geoderma.2013.04.007>

Doetterl S. Multi-scale analysis on soil erosion and its impact on soil organic carbon storage in agricultural landscapes. 186p. [Doctoral Thesis, University of Louvain]. <http://hdl.handle.net/2078.1/127188>

2012

Doetterl S., Six J., Van Wesemael B., Van Oost K. Carbon cycling in eroding landscapes: geomorphic controls on soil organic C pool composition and C stabilization. *Global Change Biology* 18(7), 2218-2232. <https://doi.org/10.1111/j.1365-2486.2012.02680.x>

Doetterl S., Six J., Van Oost K. Towards constraining the magnitude of global agricultural sediment and soil organic carbon fluxes. *Earth Surface Processes and Landforms* 37(6), 642-655. <https://doi.org/10.1002/esp.3198>

Van Oost K., Verstraeten G., **Doetterl S.**, Notebaert B., Wiaux F., Broothaerts N., Six J. Eroding the C cycle, the legacy of human-induced C erosion and burial on soil-atmosphere C exchange. *PNAS* 109, 19492-19497. <https://doi:10.1073/pnas.1211162109>

2011

Voelkel J., Leopold M., **Doetterl S.**, Schneider A., Huerkamp K., Hilgers A. (2011): Origin and age of the Lower Bavarian sand-dunes landscape around Abensberg and Siegenburg. *Annals of Geomorphology* 55(4), 515-536. <https://doi.org/10.1127/0372-8854/2011/0060>

2008

Doetterl S. The inland dune fields at Abensberg and Siegenburg. A GIS-based reconstruction of landscape development. 181p. [Diploma thesis, University of Regensburg, unpublished monography].