

CURRICULUM VITA – Klaus Lorenz

April 2024

Klaus Lorenz, PhD

Senior Research Associate

CFAES Rattan Lal Center for Carbon Management & Sequestration (Lal Carbon Center)

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EDUCATION

- | | | |
|---------|------|---|
| Ph. D. | 2001 | Agricultural Sciences University of Hohenheim, Germany
Major: Biogeochemistry, Minors: Soil Microbiology, Forest Soils |
| Diploma | 1997 | Biology University of Freiburg, Germany
Major: Plant Physiology, Minors: Biochemistry, Genetics, Soil Science |

PROFESSIONAL APPOINTMENTS

Senior Research Associate/Post Doctoral Scholar/Research Scientist, C-MASC, Columbus, 2014 - present

Research: Short- and long-term effects of biochar application on soil properties and greenhouse gas fluxes; OSU campus soil ecosystem services and greenhouse gas fluxes; Soil properties and greenhouse gas fluxes at dairy farms in the U.S.; Improving urban agriculture; Soil carbon stocks at long-term field experiments in the U.S., Canada, the UK and Italy comparing conventional with organic farming practices; Soil carbon stocks at long-term surface residue management plots at Waterman Farm, OSU

Chief Soil Scientist/Research Fellow, Institute for Advanced Sustainability Studies e.V. (now: Research Institute for Sustainability - Helmholtz Centre Potsdam), Potsdam, Germany, 2011 – 2014

Research: Recarbonization of the Biosphere; Terrestrial Carbon Sequestration and Ecosystem Services; Towards a Global Instrument on Soil Protection and Management

Research Scientist, C-MASC, Columbus, 2005 - 2011

Research: Soil Organic Carbon Sequestration in Soils of the Ohio River Watershed and Costa Rica

Postdoctoral Research Fellow, C-MASC, Columbus, 2004-2005

Research: Soil Organic Carbon Sequestration in Forest, Meadow, and No-till Soils in Ohio

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Postdoctoral Research Fellow, University of Hohenheim, Stuttgart, Germany, 2001-2003

Research: Biological and Ecotoxicological Evaluation of Urban Soils

RESEARCH

Assessment of soil biological, chemical and physical properties

Biogeochemistry and management of soil carbon

Agricultural, forest and urban soils

Transdisciplinary research on sustainable soil and land use management practices

TEACHING EXPERIENCE

ENR 5261 *Environmental Soil Physics*, School of Environment & Natural Resources, OSU

ENR 5268 *Soils and Climate Change*, School of Environment & Natural Resources, OSU

Course 3102-452 *Molecular Soil Ecology*, Department of Soil Science and Land Evaluation, University of Hohenheim

Course 3103-460 *Environmental Science*, Envirofood, Department of Soil Science and Land Evaluation, University of Hohenheim

PROFESSIONAL ACTIVITIES

Associate Editor Journal of Plant Nutrition and Soil Science

Member Editorial Board Geoderma

Member Advisory Council Conference 'Sequestering Carbon in Soil – Addressing the Climate Threat', May 3-5, 2017, Paris, France

Reviewer The Ohio State University's Fulbright review panel

Mentor DAAD Research Internships in Science and Engineering (RISE)

Reviewer for peer-reviewed journals, e.g.,

Science Advances, Nature, Nature Geoscience, Biogeochemistry, Carbon Management, European Journal of Soil Science, Forest Science, Geoderma, Global Change Biology, Organic Geochemistry, Plant and Soil, Soil Biology & Biochemistry, Soil Science Society of America Journal

Proposal Reviewer

National Science Foundation (NSF) Geobiology and Low-Temperature Geochemistry Program

NSF Small Business Innovation Research (SBIR) Coal and Carbon panel
Rannís – Icelandic Research Fund

Hungarian Scientific Research Fund (OTKA)

Natural Sciences and Engineering Research Council (NSERC) of Canada

Research Council, Universiteit Gent, Belgium

Technology Foundation STW, The Netherlands

GRANTS AND FELLOWSHIPS

Foundation for Food & Agriculture Research (FFAR) with matching contributions from OSU, commodity groups, industry and other donors (Co-PI Carbon Farming Alliance for Research and Management [C-FARM]; \$15 mill)

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OSU Office of Energy and Environment, \$66,131

V. Kann Rasmussen Foundation, \$285,000

Discovery Theme Sustainability and Resilient Economy Seed Grant, \$25,000

Travel Grant (Universitätsbund Hohenheim, 2001), \$1,500

Travel Grant (Federal Ministry for Education and Research - Bundesministerium für Bildung und Forschung, 1996-2001), \$30,000

PROFESSIONAL MEMBERSHIPS

- Soil Science Society of America
- American Geophysical Union
- German Soil Science Society

PUBLICATIONS

Journal Articles

published

Shrestha, R. K., Jacinthe, P. A., Lal, R., **Lorenz, K.**, Singh, M. P., Demyan, S. M., Ren, W., Lindsey, L. E. 2023. Biochar as a negative emission technology: A synthesis of field research on greenhouse gas emissions. *Journal of Environmental Quality* 52 :769-798. <https://doi.org/10.1002/jeq2.20475>

Huang, Y., Tao, B., Lal, R., **Lorenz, K.**, Jacinthe, P. A., Shrestha, R.K., Bai, X., Singh, M. P., Lindsey, L. E., Ren, W. 2022. A global synthesis of biochar's sustainability in climate-smart agriculture - Evidence from field and laboratory experiments *Renewable and Sustainable Energy Reviews* 172 :113042. <https://doi.org/10.1016/j.rser.2022.113042>

Lorenz, K. E., Billings, S. A., Jungkunst, H. F. 2022. Soil organic carbon stabilization in forest subsoils: Directions for the research community. *Journal of Plant Nutrition and Soil Science*, 185, 347–350. <https://doi.org/10.1002/jpln.202200090>

Ivezić, V., **Lorenz, K.**, Lal, R. 2022. Soil Organic Carbon in Alley Cropping Systems: A Meta-Analysis. *Sustainability* 14 :1296. <https://doi.org/10.3390/su14031296>

Qian, F, Chi, Y., Lal, R., **Lorenz, K.** 2020. Spatio-temporal characteristics of cultivated land fragmentation in different landform areas with a case study in Northeast China. *Ecosystem Health and Sustainability*. DOI: 10.1080/20964129.2020.1800415

Kelsey, S.A., Grottoli, A.G., Bauer, J.E., **Lorenz, K.**, Lal, R., Matsui Y., Huey-Sanders, T.M. 2020. Effects of Agricultural and Tillage Practices on Isotopic Signatures and Fluxes of Organic and Inorganic Carbon in Headwater Streams. *Aquatic Sciences* 82:23.

Lorenz, K., Lal, R., Ehlers, K. 2019. Soil organic carbon stock as indicator for monitoring land and soil degradation in relation to United Nations' Sustainable Development Goals. *Land Degradation & Development* 30 :824-838.

Sá, J. C. M., Lal, R., Cerri, C. C., Carvalho, P. C. F., Hungria, M., **Lorenz, K.** 2017. Low-carbon agriculture in South America to mitigate global climate change and advance food security. *Environment International* 98 : 102-112.

Lorenz, K. 2015. Organic urban agriculture. *Soil Science* 180 : 146-153

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- Lal, R., Negassa, W., **Lorenz, K.** 2015. Carbon sequestration in soil. *Current Opinion in Environmental Sustainability* 15 : 79-86.
- Lorenz, K.**, Lal, R. 2015. Managing soil carbon stocks to enhance the resilience of urban ecosystems. *Carbon Management* 6: 35-50.
- Morel, J. L., Chenu, C. **Lorenz, K.** 2015. Ecosystem services provided by soils of urban, industrial, traffic, mining, and military areas (SUITMAs). *Journal of Soils and Sediments* 15 :1659-1666.
- Chacón, P., **Lorenz, K.**, Lal, R., Calhoun, F. G., Fausey, N. 2015. Association of soil organic carbon with physically separated soil fractions in different land uses of Costa Rica. *Acta Agriculturae Scandinavica, Section B – Soil & Plant Science* 65 :448-459.
- Chacón, P., **Lorenz, K.**, Lal, R., Calhoun, F. G., Fausey, N. 2015. Soil organic carbon in some land uses of Costa Rica. *Acta Agriculturae Scandinavica, Section B – Soil & Plant Science* 65 :310-320.
- Lorenz, K.**, Lal, R. 2014. Biochar application to soil for climate change mitigation by soil organic carbon sequestration. *Journal of Plant Nutrition and Soil Science* 177 :651-670.
- Lorenz, K.**, Lal, R. 2014. Soil organic carbon sequestration in agroforestry systems. A review. *Agronomy for Sustainable Development* 34 : 443-454.
- Jandl, R., Rodeghiero, M., Martinez, C., Cotrufo, M. F., Bampa, F., van Wesemael, B., Harrison, R. B., Guerrini, I. A., deB Richter Jr., D., Rustad, L., **Lorenz, K.**, Chabbi, A., Miglietta, F. 2014. Current status, uncertainty and future needs in soil organic carbon monitoring. *Science of the Total Environment* 468-469 : 376-383.
- Koch, A., McBratney, A., Adams, M., Field, D., Hill, R., Lal, R., Abbott, L., Angers, D., Baldock, J., Barbier, E., Binkley, D., Bird, M., Bouma, J., Chenu, C., Crawford, J., Butler Flora, C., Goulding, K., Grunwald, S., Hempel, J., Jastrow, J., Lehmann, J., **Lorenz, K.**, Minasny, B., Morgan, C., O'Donnell, A., Parton, W., Rice, C., Wall, D., Whitehead, D., Young, I., Zimmermann, M. 2013. Soil Security: Solving the Global Soil Crisis. *Global Policy* 4 : 434-441.
- Lorenz, K.**, Lal, R., Shipitalo, M. J. 2011. Stabilized soil organic carbon pools in subsoils under forest are potential sinks for atmospheric CO₂. *Forest Science* 57: 19-25.
- Jiménez, J. J., **Lorenz, K.**, Lal, R. 2011. Organic carbon and nitrogen in soil particle-size aggregates under dry tropical forests from Guanacaste, Costa Rica — Implications for within-site soil organic carbon stabilization. *Catena* 86 : 178-191.
- Lorenz, K.**, Lal, R., Jiménez, J. J. 2010. Characterization of soil organic matter and black carbon in dry tropical forests of Costa Rica. *Geoderma* 158: 315-321.
- Lorenz, K.**, Lal, R., Jiménez, J. J. 2009. Soil organic carbon stabilization in dry tropical forests of Costa Rica. *Geoderma* 152: 95-103.
- Lorenz, K.**, Lal, R. 2009. Biogeochemical C and N cycles in urban soils. *Environment International* 35: 1-8.
- Lorenz, K.**, Lal, R., Shipitalo, M. J. 2008. Chemical stabilization of organic carbon pools in particle size fractions in no-till and meadow soils. *Biology & Fertility of Soils* 44: 1043-1051.
- Lorenz, K.**, Lal, R., Preston, C. M., Nierop, K. G. J. 2007. Strengthening the soil organic carbon pool by increasing contributions from recalcitrant aliphatic bio(macro)molecules. *Geoderma* 142: 1-10.

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- Lorenz, K.**, Lal, R. 2007. Stabilization of organic carbon in chemically separated pools in reclaimed coal mine soils in Ohio. *Geoderma* 141: 294-301.
- Lorenz, K.**, Lal, R., Shipitalo, M. J. 2006. Stabilization of organic carbon in chemically separated pools in no-till and meadow soils in Northern Appalachia. *Geoderma* 137: 205-211.
- Lorenz, K.**, Preston, C. M., Kandeler, E. 2006. Soil organic matter in urban soils: estimation of elemental carbon by thermal oxidation and characterization of organic matter by solid-state ^{13}C -NMR spectroscopy. *Geoderma* 130: 312-323.
- Lorenz, K.**, Kandeler, E. 2006. Microbial biomass and activities in urban soils in two consecutive years. *Journal of Plant Nutrition and Soil Science* 169: 799-808.
- Usman, A. R. A., Kuzyakov, Y., **Lorenz, K.**, Stahr, K. 2006. Remediation of a soil contaminated with heavy metals by immobilizing compounds. *Journal of Plant Nutrition Soil Science* 169: 205-212.
- Lorenz, K.**, Kandeler, E. 2005. Biochemical characterization of urban soil profiles from Stuttgart, Germany. *Soil Biology & Biochemistry* 37: 1373-1385.
- Lorenz, K.**, Preston, C. M., Krumrei, S., Feger, K. H. 2004. Decomposition of needle/leaf litter from Scots pine, black cherry, common oak, and European beech at a conurbation forest site. *European Journal of Forest Research* 123: 177-188.
- Bol, R., Kandeler, E., Amelung, W., Glaser, B., Marx, M. C., Preedy, N., **Lorenz, K.** 2003. Short term effects of dairy slurry amendment on carbon sequestration and enzyme activities in a temperate grassland. *Soil Biology & Biochemistry* 35: 1411-1526.
- Lorenz, K.**, Preston, C. M. 2002. Characterization of high-tannin fractions from humus by carbon-13 cross polarization and magic-angle spinning nuclear magnetic resonance. *Journal of Environmental Quality* 31: 431-436.
- Lorenz, K.**, Preston, C. M., Feger, K. H. 2001. Long-term effects of liming on microbial biomass and activity and soil organic matter quality (^{13}C CPMAS NMR) in organic horizons of Norway spruce forests in Southern Germany. *Journal of Plant Nutrition and Soil Science* 164: 555-560.
- Lorenz, K.**, Feger, K. H., Kandeler, E. 2001. The response of soil microbial biomass and activity of a Norway spruce forest to liming and drought. *Journal of Plant Nutrition and Soil Science* 164: 9-19.
- Lorenz, K.**, Preston, C. M., Morrison, I. K., Raspe, S., Feger, K. H. 2000. Litter decomposition and humus characteristics in Canadian and German spruce ecosystems: information from tannin analysis and ^{13}C CPMAS NMR. *Soil Biology & Biochemistry* 32: 779-792.

In preparation

- Lorenz, K.**, Lal, R., Strock, J. 2023. Soil carbon and total nitrogen concentrations and stocks after 26 years of conventional and organic management practices at University of Minnesota Variable Input Crop Management Systems Trials.
- Lorenz, K.**, Lal, R., Brault, A., Hammermeister, A.M, Entz, M.H. 2023. Deep Soil Carbon and Nitrogen Stocks after 23 Years under Conventional and Organic Management at the Glenlea Crop Rotation Study.

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Lorenz, K., Omondi, E., Lal, R. 2023. Deep soil organic carbon and total nitrogen after 34 years under conventional and organic management practices at the Rodale Institute Farming Systems Trial. *Soil Science Society of America Journal*

Books

Lorenz, K., Lal, R. 2023. *Organic Agriculture and Climate Change*. Springer Nature Switzerland, Cham, Switzerland.

Lorenz, K., Lal, R. 2022. *Soil Organic Carbon Sequestration in Terrestrial Biomes of the United States*. Springer Nature Switzerland, Cham, Switzerland.

Lorenz, K., Lal, R. 2018. *Carbon Sequestration in Agricultural Ecosystems*. Springer, Dordrecht, The Netherlands.

Lorenz, K., Lal, R. 2010. *Carbon Sequestration in Forest Ecosystems*. Springer, Dordrecht, The Netherlands.

Book Chapters

Bajgai, Y., Lal, R., **Lorenz, K.** (2024) On-farm conservation agriculture practices effects on soil health and agronomic productivity in the Midwestern USA. *Advances in Agronomy*. <https://doi.org/10.1016/bs.agron.2024.02.009>

Lorenz, N., **Lorenz, K., Dick, R. P.** 2021. Soil Organic Matter and Microorganisms in Management Systems Growing Biomass for Food and Feed. In: Lal, R. (Ed.) *Soil Organic Matter and Feeding the Future: Crop Yield and Nutritional Quality*. CRC Press, Taylor and Francis Group, pp. 137-159.

Lorenz, K. 2017. Managing Urban Soils for Food Production. In: Lal, R., Stewart, B.A. (Eds.) *Advances in Soil Science: Urban Soils*. CRC Press, pp. 298-311

Lorenz, K., Lal, R. 2017. Impacts of land take and soil sealing on soil carbon. In: Gardi, C. (Ed.) *Urban Expansion, Land Cover and Soil Ecosystem Services*. Taylor & Francis: Routledge, pp. 181-192

Morel, J. L., **Lorenz, K., Séré, G.** 2017. Ecosystem services provided by soils. In: Levine, M. J., Kim, K. H. J., Morel, J. L., Burghardt, W., Charzynski, P., Shaw, R. K. (Eds.) *Soils within Cities*. Catena-Schweizerbart, Stuttgart, pp. 197-202.

Lorenz, K., Shaw, R. K., 2017. Carbon storage in urban soils. In: Levine, M. J., Kim, K. H. J., Morel, J. L., Burghardt, W., Charzynski, P., Shaw, R. K. (Eds.) *Soils within Cities*. Catena-Schweizerbart, Stuttgart, pp. 203-205.

Lorenz, K. 2017. Urban Lands: Management. In: Lal, R. (Ed.) *Encyclopedia of Soil Science*, 3rd. Ed., Taylor & Francis, CRC Press, Boca Raton, FL, pp. 2400-2406. DOI: 10.1081/E-ESS3-120052920

Lorenz, K., Lal, R. 2017. Organic Carbon: Subsoil Pools. In: Lal, R. (Ed.) *Encyclopedia of Soil Science*, 3rd. Ed., Taylor & Francis, CRC Press, Boca Raton, FL, pp. 1614-1617.

Lorenz, K., Lal, R. 2016. Environmental Impact of Organic Agriculture. *Advances in Agronomy* 139: 99-152.

Lal, R., **Lorenz, K., Hüttl, R. F., Schneider, B. U., von Braun, J.** 2013. Research and Development Priorities for Global Soil-Related Policies and Programs. In: Lal, R., **Lorenz, K., Hüttl, R. F., Schneider, B. U., von Braun, J.** (Eds.) *Ecosystem Services and Carbon Sequestration in the Biosphere*. Springer, Dordrecht, The Netherlands, pp. 431-455.

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- Lorenz, K.** 2013. Ecosystem Carbon Sequestration. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Ecosystem Services and Carbon Sequestration in the Biosphere. Springer, Dordrecht, The Netherlands, pp. 39-62.
- Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. 2013. Societal Dependence on Soil's Ecosystem Services. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Ecosystem Services and Carbon Sequestration in the Biosphere. Springer, Dordrecht, The Netherlands, pp. 1-10.
- Bens, O., **Lorenz, K.** 2012. Kohlenstoffspeicherung und Humusversorgung der Böden in Deutschland. In: Mosbrugger, V., Brasseur, G., Schaller, M., Stribny, B. (Eds.) Klimawandel und Biodiversität – Folgen für Deutschland. WBG (Wissenschaftliche Buchgesellschaft), Darmstadt, Germany, pp. 132-138.
- Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. 2012. Terrestrial Biosphere as a Source and Sink of Atmospheric Carbon Dioxide. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Recarbonization of the Biosphere – Ecosystems and the Global Carbon Cycle. Springer, Dordrecht, The Netherlands, pp. 1-16.
- Lorenz, K.**, Crutzen, P. J., Lal, R., Töpfer, K. 2012. Atmospheric Chemistry and Climate in the Anthropocene. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Recarbonization of the Biosphere – Ecosystems and the Global Carbon Cycle. Springer, Dordrecht, The Netherlands, pp. 41-58.
- Lal, R., **Lorenz, K.** 2012. Carbon Sequestration in Temperate Forests. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Recarbonization of the Biosphere – Ecosystems and the Global Carbon Cycle. Springer, Dordrecht, The Netherlands, pp. 187-202.
- Lorenz, K.**, Lal, R. 2012. Cropland Soil Carbon Dynamics. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Recarbonization of the Biosphere – Ecosystems and the Global Carbon Cycle. Springer, Dordrecht, The Netherlands, pp. 303-346.
- Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. 2012. Research and Development Priorities Towards Recarbonization of the Biosphere. In: Lal, R., **Lorenz, K.**, Hüttl, R. F., Schneider, B. U., von Braun, J. (Eds.) Recarbonization of the Biosphere – Ecosystems and the Global Carbon Cycle. Springer, Dordrecht, The Netherlands, pp. 533-544.
- Lorenz, K.**, Lal, R. 2012. Terrestrial Carbon Management in Urban Ecosystems and Water Quality. In: Lal, R., Augustin, B (Eds.) Carbon Sequestration in Urban Ecosystems. Springer, Dordrecht, The Netherlands, pp. 73-100.
- Lorenz, K.**, Lal, R. 2012. Carbon Storage in Some Urban Forest Soils of Columbus, Ohio, USA. In: Lal, R., Augustin, B (Eds.) Carbon Sequestration in Urban Ecosystems. Springer, Dordrecht, The Netherlands, pp. 139-158.
- Lorenz, K.**, Lal, R., Preston, C. M., Nierop, K. G. J. 2009. Soil Organic Carbon Sequestration by Biochemically Recalcitrant Biomacromolecules. In: Lal, R., Follett, R. F. (Eds.) Soil Carbon Sequestration and the Greenhouse Effect. Soil Science Society of America Special Publication 57, 2nd ed., Madison, WI, pp. 207-222.

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- Lorenz, K.**, Lal, R. 2009. Carbon Dynamics in Urban Soils. In: Lal, R., Follett, R. F. (Eds.) Soil Carbon Sequestration and the Greenhouse Effect. Soil Science Society of America Special Publication 57, 2nd ed., Madison, WI, pp. 393-400.
- Lorenz, K.**, Lal, R. 2006. Subsoil organic carbon pool. In: Lal, R. (Ed.) Encyclopedia of Soil Science, 2nd ed., Taylor & Francis, CRC Press, Boca Raton, FL, pp. 1710-1713.
- Lorenz, K.**, Lal, R. 2005. The depth distribution of soil organic carbon in relation to land use and management and the potential of carbon sequestration in subsoil horizons. *Advances in Agronomy* 88: 35-66.
- Raspe, S., Feger, K.-H., **Lorenz, K.** 2003. Zersetzung von Nadel- und Feinwurzelstreu in Fichtenbeständen. In: Hüttel, R.F. (Hrsg.) *Boden, Wald und Wasser*. Shaker Verlag, Aachen, Germany, S. 84-99.
- Häussling, M., George, E., **Lorenz, K.**, Kreuzer, K., Marschner, H. 1991. Einfluß von saurer Beregnung auf Wachstum von Langwurzeln und pH-Werte in der Rhizosphäre von Fichten im Versuch Höglwald. In: Kreuzer, K., Göttlein, A. (Hrsg.) *Ökosystemforschung Höglwald – Beiträge zu Auswirkungen von saurer Beregnung und Kalkung in einem Fichtenaltbestand*. Parey-Verlag, Hamburg, Germany, S. 44-48.

Not peer-reviewed

- Lorenz, K.**, Lal, R. 2016. Soil Organic Carbon – An Appropriate Indicator to Monitor Trends of Land and Soil Degradation within the SDG Framework? Umweltbundesamt [German Federal Environment Agency] Text 77/2016, <https://www.umweltbundesamt.de/publikationen/soil-organic-carbon-an-appropriate-indicator-to>
- Lal, R., Beniston, J., Blanco-Canqui, B., Chatterjee, A., Christopher S.F., Colson, T., Eastman, C., Elder, K., Hottle, R.D., Kumar, S., **Lorenz, K.**, Mishra, U., Mukundan, R., Stavi, I., Swank, B., Tan, Z.X. 2010. Midwest Regional Carbon Sequestration Partnership 2003-2010, Final Report Phase II, DOE-NETL Cooperative Agreement DE-FC26-05NT42589
- Lorenz, K.**, Lal, R. 2007. Carbon Sequestration in Reclaimed Mined Soils of Ohio. Technical Report, DOE Contract Number FC26-03NT41903, http://www.osti.gov/bridge/product.biblio.jsp?query_id=0&page=0&osti_id=934378#
- Lorenz, K.**, Tscherko, D., Kandeler, E. 2003. Biologische und ökotoxikologische Bewertung von Böden in Ballungsräumen. Baden-Württemberg Programm Lebensgrundlage Umwelt und ihre Sicherung (BWPLUS) – Schlußbericht BWC 20009, <http://www.fachdokumente.lubw.baden-wuerttemberg.de/servlet/is/40169/?COMMAND=DisplayBericht&FIS=203&OBJECT=40169&MODE=METADATA>
- Feger, K.H., **Lorenz, K.**, Raspe, S., Armbruster, M. 2000. Mittel- bis langfristige Auswirkungen von Kompensations- bzw. Bodenschutzkalkungen auf die Pedo- und Hydrosphäre – Schlußbericht PEF 196003, <http://www.fachdokumente.lubw.baden-wuerttemberg.de/servlet/is/40051/?COMMAND=DisplayBericht&FIS=203&OBJECT=40051&MODE=METADATA>
- Fink, S., Feger, K.H., Gülpen, M., Armbruster, M., **Lorenz, K.** 1999. Magnesium-Mangelvergilbung an Fichte – Einfluß von frühsommerlicher Trockenheit und

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Dolomit-Kalkung. Teilprojekt A: Wasser- und Nährelementhaushalt der Fichten.
Teilprojekt B: Bodenwasser, Durchwurzelung und Stoffdynamik - Schlußberichte
PEF 197001 und 196004, <http://www.fachdokumente.lubw.baden-wuerttemberg.de/servlet/is/40015/?COMMAND=DisplayBericht&FIS=203&OBJECT=40015&MODE=METADATA>

Invited Talks

- Lorenz, K.** Soil carbon sequestration for food security and climate. Università di Pisa, Pisa, Italy, October 3, 2016.
- Lorenz, K.** Management of urban soils to enhance the resilience of urban ecosystems. SUITMA8 Conference, Mexico City, Mexico, September 20-25, 2015.
- Lorenz, K.** The Global Soil Forum. Conference The Water Energy and Food Security Nexus – Solutions for the Green Economy, Bonn, Germany, November 16-18, 2011.
- Lorenz, K.** The Global Soil Forum. Soil Security Meeting of Sydney University's United States Study Centre in Washington D.C., USA, September 15-16, 2011.
- Lorenz, K.** Soil Carbon Changes in Long-Term Experiments – Examples from Europe and the USA. Kick-off Meeting Global Soil Carbon Network, Florence, Italy, April 20-21, 2011.
- Lorenz, K.** Urban soils and carbon sequestration. USDA NRCS North Central Regional Soil Survey Conference, Columbus, OH, June 14-17, 2010.
- Lorenz, K., Lal, R.** Impact of terrestrial carbon management on water quality. OSU C-MASC – Scotts MiracleGro Company Symposium Carbon Sequestration in Urban Ecosystems, Columbus, OH, April 14, 2010.
- Lorenz, K.** Agriculture and carbon sequestration. 25x'25 American and German Farm Manager Meeting, Columbus, OH, July 7, 2009.
- Lorenz, K., Lal, R.** Carbon sequestration in urban soils and technosols. IUSS WRB – AK Bodensystematik Technosols-Stagnosols-Tour 2007 in Germany, Hohenheim, July 31, 2007.

CONFERENCE TALKS

- Lorenz, K., Lal, R.** Long-term Effects of Organic Agriculture on Deep Soil Organic Carbon Stocks. ASA, CSSA, and SSSA Annual Meeting 2016, Nov. 6-9, Phoenix, AZ
- Lorenz, K., Lal, R.** Carbon Sequestration in Urban Soils for Enhancing the Resilience of Urban Ecosystems to Climate Change. ASA, CSSA, and SSSA Annual Meeting 2014, Nov. 2-5, Long Beach, CA.
- Lorenz, K.** The Urban Land Grab. 7th International Conference on SUITMAs, Torun, Poland, 16.-20. September, 2013.
- Lorenz, K., Weigelt, J., Lal, R., Töpfer, K.** Sustainable Soil and Land-Use Management in the Anthropocene. ASA, CSSA, and SSSA Annual Meeting 2012, Oct. 21-24, Cincinnati, OH.
- Lorenz, K.** Soils for Sustainable Development. EUROSOIL 2012, Bari, Italy, 2.-6. July, 2012.
- Lorenz, K., Lal, R., Töpfer, K.** Recarbonization of the Soil. DBG-Jahrestagung, Berlin und Potsdam, Germany, 3.-9. September, 2011.

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- Lorenz, K.**, Lal, R. Long-term land-use effects on soil organic carbon sequestration. ASA, CSSA, and SSSA Annual Meeting 2010, Oct. 31- Nov. 4, Long Beach, CA.
- Lorenz, K.**, Lal, R. Carbon sequestration in urban forest soils. ASA, CSSA, and SSSA Annual Meeting 2009, Nov. 1-5, Pittsburgh, PA.
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