

2018

Clay, D.E., and **U. Mishra**. 2018. The importance of crop residues in maintaining soil organic carbon in agroecosystems. pp. 115-123. In Z. Qin, U. Mishra, and A. Hastings (eds.) *Bioenergy and Land Use Change*, Geophysical Monograph 231, John Wiley & Sons, Inc., NJ, USA and the American Geophysical Union, Washington, D.C., USA.2016

Yi, Y., J.S. Kimball, R.H. Chen, M. Moghaddam, R.H. Reichle, **U. Mishra**, D. Zona, and W.C. Oechel. 2018. Characterizing permafrost active layer dynamics and sensitivity to landscape spatial heterogeneity in Alaska. *The Cryosphere* 12:145-161. <https://doi:10.5194/tc-2017-87>

Nave L.E., G.M. Domke, K.L. Hofmeister, **U. Mishra**, C.H. Perry, B.F Walters, and C.W. Swanston. 2018. Reforestation can sequester two petagrams of carbon in U.S. topsoils in a century, *Proceedings of the National Academy of Sciences* 115:2776-2781. <https://doi.org/10.1073/pnas.1719685115>

Goncalves, D.R.P., J.C. Sa, **U. Mishra**, F.J.F. Furlan, L.A. Ferreira, T.M. Inagaki, J. Romaniw, A. De Oliveira Ferreira, and C. Briedis. 2018. Soil carbon inventory to quantify the impact of land use change to mitigate greenhouse gas emission and ecosystem services. *Environmental Pollution*. doi:10.1016/j.envpol.2018.07.068.

Mitran, T., **U. Mishra**, and R. Lal. 2018. Climate change impacts on soil carbon stocks in India. In Lal. R., B.A. Stewart (eds.) *Advances in Soil Science: Soil and Climate*, CRC press, Taylor and Francis Group, FL, USA

2017

Matamala, R., F.J. Calderón, J.D. Jastrow, Z. Fan, S.M. Hofmann, G.J. Michaelson, U. Mishra, and C.L. Ping. 2017. Influence of site and soil properties on the DRIFT spectra of northern cold-region soils. *Geoderma* 305:80-91. doi:10.1016/j.geoderma.2017.05.014.

Shelef, E., J.C. Rowland, C.J. Wilson, G.E. Hilley, **U. Mishra**, G.L. Altman and **C.L. Ping**. 2017. Large uncertainty in permafrost carbon stocks due to hillslope soil deposits. *Geophysical Research Letters*, 44:6134-6144. <https://doi:10.1002/2017GL073823>

Liang, C., J.P. Schimel, and J.D. Jastrow. 2017. The importance of anabolism in microbial control over soil carbon storage. *Nature Microbiology* 2:17105. <https://doi:10.1038/nmicrobiol.2017.105>

Sa, J.C.d.M., D.R.P. Goncalves, L.A. Ferreira, **U. Mishra**, T.M. Inagaki, F.J.F. Furlan, R.S. Moro, N. Floriani, C. Briedis, A. De Oliveira Ferreira. 2017. Soil carbon fractions and biological activity based indices can be used to study the impact of land management and ecological successions. *Ecological Indicators* 84:96–105. <https://doi:10.1016/j.ecolind.2017.08.029>

Van Looy K., J. Bouma, M. Herbst, J. Koestel, B. Minasny, **U. Mishra**, C. Montzka, A. Nemes, Y. Pachepsky, J. Padarian, M. Schaap, B. Tóth, A. Verhoef, J. Vanderborght, M. van der Ploeg, L. Weihermüller, S. Zacharias, Y. Zhang, H. Vereecken. 2017. Pedotransfer functions in Earth system science: Challenges and perspectives. *Reviews of Geophysics* 55:1199-1256. <https://doi:10.1002/2017RG000581>

Gonçalves D.R.P., J.C. de Moraes Sá, **U. Mishra**, C.E.P. Cerri, L.A. Ferreira, and F.J.F. Furlan. 2017. Soil type and texture impacts on soil organic carbon accumulation in a sub-tropical agro-ecosystem. *Geoderma* 286:88-97. doi:10.1016/j.geoderma.2016.10.021.

Vitharana, U.W.A. , **U. Mishra, J.D. Jastrow, R. Matamala**, and **Z. Fan**. 2017. Observational needs for estimating Alaskan soil carbon stocks under current and future climate. *Journal of Geophysical Research: Biogeosciences* 122:415-429. doi:10.1002/2016JG003421.

2016

Jiang Y., A.V. Rocha, E.B. Rastetter, G.R. Shaver, **U. Mishra**, Q. Zhuang, and B.L. Kwiatkowski. 2016. C-N-P interactions control climate driven changes in regional patterns of C storage on the North Slope of Alaska. *Landscape Ecology* 31:195-213. doi:10.1007/s10980-015-0266-5

Morris, G.P, Z. Hu, P.P. Grabowski, J.O. Borevitz , M.-A. de Graaff, **R.M. Miller**, and **J.D. Jastrow**. 2016. Genotypic diversity effects on biomass production in native perennial bioenergy cropping systems. *Global Change Biology Bioenergy* doi:10.1111/gcbb.12309

Moon, J.B., D.H. Wardrop, M.A.V. Bruns, **R.M. Miller**, and K.J. Naithani. 2016. Land-use and land-cover effects on soil microbial community abundance and composition in headwater riparian wetlands. *Soil Biology & Biochemistry* 97:215-233. doi:10.1016/j.soilbio.2016.02.021

Fan, Z., J.C. Neff, and W.R. Wieder. 2016. Model-based analysis of environmental controls over ecosystem primary production in an alpine tundra dry meadow. *Biogeochemistry* 128:35-49. doi: 10.1007/s10533-016-0193-9

Lokupitiya, E. , A.S. Denning, K. Schaefer, D. Ricciuto, R. Anderson, M.A. Arain, I. Baker, A.G. Barr, G. Chen, J.M. Chen, P. Ciais, D.R. Cook, M. Dietze, M. El Maayar, M. Fischer, R. Grant, D. Hollinger, C. Izaurrealde, A. Jain, C. Kucharik, Z. Li, S. Liu, L. Li, **R. Matamala**, P. Peylin, D. Price, S.W. Running, A. Sahoo, M. Sprintsin, A.E. Suyker, H. Tian, C. Tonitto, M. Torn, Hans Verbeeck, S.B. Verma, Y. Xue. 2016. Carbon and energy fluxes in cropland ecosystems: a model- data comparison. *Biogeochemistry* doi:10.1007/s10533-016-0219-3.

Mishra, U., B. Drewniak, **J.D. Jastrow, R. Matamala**, and U.W.A. Vitharana. 2016. Spatial representation of high latitude organic carbon and active-layer thickness in CMIP5 earth system models. *Geoderma* doi: 10.1016/j.geoderma.2016.04.017.

O'Brien, S.L., S.M. Gibbons, S.M. Owens, J. Hampton-Marcell, E.R. Johnston, **J.D. Jastrow**, J.A. Gilbert, F. Meyer, and D.A. Antonopoulos. 2016. Spatial scale drives patterns in soil bacterial diversity. *Environmental Microbiology* doi:10.1111/1462-2920.13231.

2015

Fan, Z., and **C. Liang**. 2015. Significance of microbial asynchronous anabolism to soil carbon dynamics driven by litter inputs. *Scientific Reports* 5:9575. doi:10.1038/srep09575

Ping, C.L., J.D. Jastrow, M.T. Jorgenson, **G.J. Michaelson**, and Y.L. Shur. 2015. Permafrost soils and carbon cycling. *SOIL* 1:147-171, doi:10.5194/soil-1-147-2015.doi:10.5194/soil-1-147-2015

Mishra U., and W.J. Riley. 2015. Scaling impacts on environmental controls and spatial heterogeneity of soil organic carbon stocks. *Biogeosciences Discussions*, 12, 1721-1751, doi: 10.5194/bgd-12-1-2015.[doi:10.5194/bgd-12-3993-2015](https://doi.org/10.5194/bgd-12-3993-2015)

Cotton T.E.A., A.H. Fitter, **R.M. Miller**, A.J. Dumbrell, and T. Helgason. 2015. Fungi in the future: inter-annual variation and effects of atmospheric change on arbuscular mycorrhizal fungal communities. *New Phytologist* 205:1598-1607. doi:10.1111/nph.13224

Johnson N.C., G.W.T. Wilson, J.A. Wilson, **R. M. Miller**, and M.A. Bowker. 2015. Mycorrhizal phenotypes and the Law of the Minimum. *New Phytologist* 205:1473-1484. doi:10.1111/nph.13172

Drewniak B., **U. Mishra**, J. Song, J. Prell, and V.R. Kotamarthi. 2015. Modeling the impact of agricultural land use and management on US carbon budgets. *Biogeosciences* 12:2119–2129. doi:10.5194/bg-12-2119-2015.

O'Brien, S.L., **J.D. Jastrow**, D.A. Grimley, and M.A. Gonzalez-Meler. 2015. Edaphic controls on soil organic carbon stocks in restored grasslands. *Geoderma* 251-252:117-123.

Yan, H., S.Q. Wang, D. Billesbach, W. Oechel, G. Bohrer, T. Meyers, T.A. Martin, **R. Matamala**, R.P. Phillips, F. Rahman, Q. Yu, and H.H. Shugart. 2015. Improved global simulations of gross primary product based on a new definition of water stress factor and a separate treatment of C3 and C4 plants. *Ecological Modelling* 297:42-59. doi:10.1016/j.ecolmodel.2014.11.002.

Wagle, P., X. Xiao, R.L. Scott, T.E. Kolb, D.R. Cook, N. Brunsell, D.D. Baldocchi, J. Basara, **R. Matamala**, Y. Zhou, and R. Bajgain. 2015. Biophysical controls on carbon and water vapor fluxes across a grassland climatic gradient in the United States. *Agricultural and Forest Meteorology* 214–215:293–305. doi:10.1016/j.agrformet.2015.08.265.

Adkins, J., **J.D. Jastrow**, G.P. Morris, J. Six, M.-A. de Graaff. 2016. Effects of switchgrass cultivars and intraspecific differences in root structure on soil carbon inputs and stabilization. *Geoderma* 262:147-154. doi:10.1016/j.geoderma.2015.08.019doi:10.1016/j.geoderma.2015.03.023.

Reitsma, K.D., B.H. Dunn, **U. Mishra**, S.A. Clay, T. DeSutter, and D.E. Clay. 2015. Land-use change impact on soil sustainability in a climate and vegetation transition zone. *Agronomy Journal* 107:2363–2372. doi:10.2134/agronj15.0152

2014

Hugelius, G., J. Strauss, S. Zubrzycki, J.W. Harden, E.A.G. Schuur, **C.L. Ping**, L. Schirrmeyer, G. Grosse, **G.J. Michaelson**, C.D. Koven, J.A. O'Donnell, B. Elberling, **U. Mishra**, P. Camill, Z. Yu, J. Palmtag, and P. Kuhry. 2014. Estimated stocks of circumpolar permafrost carbon with quantified uncertainty ranges and identified data gaps. *Biogeosciences* 11, 6573-6593. [doi:10.5194/bg-11-6573-2014](https://doi.org/10.5194/bg-11-6573-2014)

Ping, C.L., J.D. Jastrow, M.T. Jorgenson, **G.J. Michaelson**, and Y.L. Shur. 2014. Permafrost soils and carbon cycling. *SOIL Discussions* 1:709-756. [doi:10.5194/solid-1-709-2014](https://doi.org/10.5194/solid-1-709-2014)

Hugelius, G., J. Strauss, S. Zubrzycki, J. W. Harden, E. A. G. Schuur, **C. L. Ping**, L. Schirrmeyer, G. Grosse, **G. J. Michaelson**, C. D. Koven, J. A. O'Donnell, B. Elberling, **U. Mishra**, P. Camill, Z. Yu, J.

Palmtag, and P. Kuhry. 2014. Improved estimates show large circumpolar stocks of permafrost carbon while quantifying substantial uncertainty ranges and identifying remaining data gaps. *Biogeosciences Discussions* 11:4771-4822. [doi:10.5194/bgd-11-4771-2014](https://doi.org/10.5194/bgd-11-4771-2014)

Fan, Z., J.C. Neff, M.P. Waldrop, A.P. Ballantyne, and M.R. Turetsky. 2014. Transport of oxygen in soil pore-water systems: Implications for modeling emissions of carbon dioxide and methane from peatlands. *Biogeochemistry* 121:455-470. [doi 10.1007/s10533-014-0012-0](https://doi.org/10.1007/s10533-014-0012-0)

Drewniak B., **U. Mishra**, J. Song, J. Prell, and V.R. Kotamarthi. 2014. Modeling the impact of agriculture land use and management on U.S. carbon budgets. *Biogeosciences Discussions* 11:13675-1369. [doi:10.5194/bgd-11-13675-2014](https://doi.org/10.5194/bgd-11-13675-2014)

Cheng, W., W.J. Parton, M.A. Gonzalez-Meler, R. Phillips, S. Asao, G.G. McNickle, E. Brzostek, and **J.D. Jastrow**. 2014. Synthesis and modeling perspectives of rhizosphere priming. *New Phytologist* 201:31-44. [doi:10.1111/nph.12440](https://doi.org/10.1111/nph.12440)

de Graaff, M.-A., **J.D. Jastrow**, S. Gillette, A. Johns, and S.D. Wullschleger. 2014. Differential priming of soil carbon driven by soil depth and root impacts on carbon availability. *Soil Biology and Biochemistry* 69:147-156. doi.org/10.1016/j.soilbio.2013.10.047

He, Y., Q. Zhuang, J.W. Harden, A.D. McGuire, **Z. Fan**, Y. Liu, and K.P. Wickland. 2014. The implications of microbial and substrate limitation for the fates of carbon in different organic soil horizon types of boreal forest ecosystems: a mechanistically based model analysis. *Biogeosciences* 11:4477. [doi:10.5194/bg-11-4477-2014](https://doi.org/10.5194/bg-11-4477-2014)

Mishra U., and W.J. Riley. 2014. Active-layer thickness across Alaska: Comparing observation-based estimates with CMIP5 earth system model predictions. *Soil Science Society of America Journal*. 78:894-902. [doi:10.2136/sssaj2013.11.0484](https://doi.org/10.2136/sssaj2013.11.0484)

Andrew, C.J., L.T.A. Van Diepen, **R.M. Miller**, and E.A. Lilleskov. 2014. Aspen-associated mycorrhizal fungal production and respiration as a function of changing CO₂, O₃ and climate variables. *Fungal Ecology* 10:70-80.

Chen, F.-S., D.S. Duncan, X.-F. Hu, and **C. Liang**. 2014. Exogenous nutrient manipulations alter endogenous extractability of carbohydrates in decomposing foliar litters under a typical mixed forest of subtropics. *Geoderma* 214-215:19-24.

Larsen, P.E. L.J. Cseke, **R.M. Miller**, and F.R. Collart. 2014. Modeling forest ecosystem responses to elevated carbon dioxide and ozone using artificial neural networks. *Journal of Theoretical Biology*, 359:61-71.

Sánchez-de León, Y., J. Lugo-Pérez, D.H. Wise, **J.D. Jastrow**, and M.A. Gonzalez-Meler. 2014. Aggregate formation and carbon sequestration by earthworms in soil from a temperate forest exposed to elevated atmospheric CO₂: A microcosm experiment. *Soil Biology and Biochemistry* 68:223-230.

Wagle, P., X. Xiao, M.S. Torn, D.R. Cook, **R. Matamala**, M.L. Fischer, C. Jin, J. Dong, and C. Biradar. 2014. Sensitivity of vegetation indices and gross primary production of tallgrass prairie to severe drought. *Remote Sensing of Environment* 152:1-14.

2013

Fan Z., J.D. Jastrow, C. Liang, R. Matamala, and R.M. Miller. 2013. Priming effects in boreal black spruce forest soils: Quantitative evaluation and sensitivity analysis. *PLoS ONE* 8: (10) e77880. Fan, Z., Jastrow, J. D., Liang, C., Matamala, R., & Miller, R. M. (2013). Priming Effects in Boreal Black Spruce Forest Soils: Quantitative Evaluation and Sensitivity Analysis. *PLoS ONE*, 8(10), e77880.
[doi:10.1371/journal.pone.0077880](https://doi.org/10.1371/journal.pone.0077880)

Koch, A., A. McBratney, M. Adams, D. Field, R. Hill, J. Crawford, B. Minasny, R. Lal, L. Abbott, A. O'Donnell, D. Angers, J. Baldock, E. Barbier, D. Binkley, W. Parton, D.H. Wall, M. Bird, J. Bouma, C. Chenu, C.B. Flora, K. Goulding, S. Gunwald, J. Hempel, **J. Jastrow**, J. Lehmann, K. Lorenz, C.L. Morgan, C.W. Rice, D. Whitehead, I. Young, and M. Zimmermann. 2013. Soil security: Solving the global soil crisis. *Global Policy* 4:434-441. [doi: 10.1111/1758-5899.12096](https://doi.org/10.1111/1758-5899.12096)

Mishra U, JD Jastrow, R Matamala, G Hugelius, CD Koven, JW Harden, CL Ping, GJ Michaelson, Z Fan, RM Miller, AD McGuire, C Tarnocai, P Kuhry, WJ Riley, K Schaefer, EAG Schuur, MT Jorgenson, and LD Hinzman. 2013. Empirical estimates to reduce modeling uncertainties of soil organic carbon in permafrost regions: a review of recent progress and remaining challenges. *Environmental Research Letters* 8:035020. [doi:10.1088/1748-9326/8/3/035020](https://doi.org/10.1088/1748-9326/8/3/035020).

Hugelius G., J.G. Bockheim, P. Camill, B. Elberling, G. Grosse, J.W. Harden, K. Johnson, T. Jorgenson, C.D. Koven, P. Kuhry, G. Michaelson, **U. Mishra**, J. Palmtag, C-L. Ping, J. O'Donnell, L. Schirrmeister, E.A.G. Schuur, Y. Sheng, L.C. Smith, J. Strauss, and Z. Yu. 2013. A new data set for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region. *Earth System Science Data* 5:393-402.

Koch, A., A. McBratney, M. Adams, D. Field, R. Hill, J. Crawford, B. Minasny, R. Lal, L. Abbott, A. O'Donnell, D. Angers, J. Baldock, E. Barbier, D. Binkley, W. Parton, D.H. Wall, M. Bird, J. Bouma, C. Chenu, C.B. Flora, K. Goulding, S. Gunwald, J. Hempel, **J. Jastrow**, J. Lehmann, K. Lorenz, C.L. Morgan, C.W. Rice, D. Whitehead, I. Young, and M. Zimmermann. 2013. Soil security: Solving the global soil crisis. *Global Policy* 4:434-441.

Matamala, R., and D.B. Stover. 2013. Introduction to a Virtual Special Issue: modeling the hidden half – the root of our problem. *New Phytologist* 200:939-942.