

# Soil and Environmental Physics: refereed journal publications

## 2020

- Chakrawal, A., Herrmann, A.M., **Koestel, J.**, Jarsjö, J., Nunan, N., Kätterer, T., Manzoni, S., 2020. Dynamic upscaling of decomposition kinetics for carbon cycling models. *Geoscientific Model Development*, 13, 1399-1429.
- Jarvis, N.** 2020. Reflection on Jarvis (2007), "Review of non-equilibrium water flow and solute transport in soil macropores: principles, controlling factors and consequences for water quality". *European Journal of Soil Science*, 58, 523–546. *European Journal of Soil Science*, 71, 303–307.
- Koestel, J., Larsbo, M., Jarvis, N.** 2020. Scale and REV analyses for porosity and pore connectivity measures in undisturbed soil. *Geoderma*, 366, 114206.
- Meurer, K.**, Barron, J., Chenu, C., **Coucheney, E.**, Fielding, M., Hallett, P., Herrmann, A., Keller, T., **Koestel, J., Larsbo, M., Lewan, E.**, Or, D., Parsons, D., **Parvin, N.**, Taylor, A., Vereecken, H., **Jarvis, N.** 2020. A framework for modelling soil structure dynamics induced by biological activity. *Global Change Biology*, 26, 5382–5403.
- Meurer, K.**, Chenu, C., **Coucheney, E.**, Herrmann, A., Keller, T., Kätterer, T., Nimblad Svensson, D., **Jarvis, N.** 2020. Modelling dynamic interactions between soil structure and the storage and turnover of soil organic matter. *Biogeosciences*, 17, 5025-5042.
- Princ, T., Reis Fideles, H.M., **Koestel, J.**, Snehota, M., 2020. The impact of capillary trapping of air on satiated hydraulic conductivity of sands interpreted by X-ray microtomography. *Water (Switzerland)* 12(2).
- Rychel, K., **Meurer, K.**, Börjesson, G., Strömgren, M., Getahun, G.T., Kirchmann, H., Kätterer, T. 2020. Deep N fertilizer placement mitigated N<sub>2</sub>O emissions in a Swedish field trial with cereals. *Nutrient Cycling in Agroecosystems*, 118, 133-148.
- Schlüter, S., Sammartino, S., **Koestel, J.** 2020. Exploring the relationship between soil structure and soil functions via pore-scale imaging. *Geoderma*, 370, 114370.
- Schuetzenmeister, K., **Meurer, K.**, Gronwald, M., Hartmann, A.B.D., Gansert, D., Jungkunst, H.F. 2020. N<sub>2</sub>O emissions from plants are reduced under photosynthetic activity. *Plant-Environment Interactions*, 1, 48-56.
- Soto-Gómez, D., Vázquez Juíz, L., Pérez-Rodríguez, P., López-Periago, J.E., Paradelo, M., **Koestel, J.** 2020. Percolation theory applied to soil tomography. *Geoderma* 357.

## 2019

- Constantin, J., Raynal, H., Casellas, E., Hoffmann, H., Bindi, M., Doro, L., Eckersten, H., Gaiser, T., Grosz, B., Haas, E., Kersebaum, K-C., Klatt, S., Kuhnert, M., **Lewan, E.**, Maharjan, G., Moriondo, M., Nendel, C., Roggero, P., Specka, X., Trombi, G., **Villa, A.**, Wang, E., Weihermuller, L., Yeluripati, J., Zhao, Z., Ewert, F., Berg, J-E. 2019. Management and spatial resolution effects on yield and water balance at regional scale in crop models. *Agricultural and Forest Meteorology*, 275, 184-195.

- Herrmann, A., **Coucheney, E.** 2019. Temperature responses of nitrogen processes cannot be inferred from carbon turnover in a boreal Norway spruce forest. *Journal of Plant Nutrition and Soil Science*, 182, 934-944.
- Holten, R., **Larsbo, M., Jarvis, N.,** Stenrød, M., Almvik, M., Eklo, O.M. 2019. Leaching of five pesticides of contrasting mobility through frozen and unfrozen soil. *Vadose Zone J.* 18:180201. doi:10.2136/vzj2018.11.0201
- Koestel, J.,** Schlüter, S. 2019. Quantification of the structure evolution in a garden soil over the course of two years. *Geoderma*, 338, 597-609.
- Kravchenko, A., Guber, A., Razavi, B., **Koestel, J.,** Quigley, M., Robertson, G., Kuzyakov, Y. 2019. Microbial spatial footprint as a driver of soil carbon stabilization. *Nature Communications*, 10, 3121.
- Kravchenko, A., Guber, A., Razavi, B., **Koestel, J.,** Blagodatskaya, E., Kuzyakov, Y. 2019. Spatial patterns of extracellular enzymes: combining X-ray computed micro-tomography and 2D zymography. *Soil Biology and Biochemistry*, 135, 411-419.
- Larsbo, M.,** Holten, R., Stenrod, M., Eklo, O-M., **Jarvis, N.** 2019. A dual-permeability approach for modeling soil water flow and heat transport during freezing and thawing. *Vadose Zone Journal*, 18, DOI: 10.2136/vzj2019.01.0012.
- Löv, Å., **Larsbo, M.,** Sjöstedt, C., Cornelis, G., Gustafsson, J-P., Kleja, D. 2019. Evaluating the ability of standardized leaching tests to predict metal(loid) leaching from intact soil columns using size-based elemental fractionation. *Chemosphere*, 222, 453-460.
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- Ulén, B., **Lewan, E.,** Kyllmar, K., Blomberg, M., Andersson, S. 2019. Impact of the North Atlantic Oscillation on Swedish winter climate and nutrient leaching. *Journal of Environmental Quality*, 48, 941-949.

## 2018

- Coucheney E.,** Eckersten H., Hoffmann H., Jansson P.-E., Gaiser T., Ewert F., **Lewan E.** 2018. Key functional soil types explain data aggregation effects on simulated yield, soil carbon, drainage and nitrogen leaching at a regional scale. *Geoderma*, 318, 167-181.
- Hansson, L.J., **Koestel, J.,** Ring, E., Gårdenäs, A.I. 2017. Impacts of off-road traffic on soil physical properties of forest clear-cuts: X-ray and laboratory analysis. *Scandinavian Journal of Forest Research*, 1-12. doi: 10.1080/02827581.2017.1339121.

- Hellner, Q., **Koestel, J.**, Ulén, B., **Larsbo, M.** 2018. Effects of tillage and liming on macropore networks derived from X-ray tomography images of a silty clay soil. *Soil Use and Management*, 34, 197–205.
- Holten R., Norheim Bøe, F., Almvik, M., Katuwal, S., Stenrød, M., **Larsbo, M.**, **Jarvis, N.**, Eklo, O-M. 2019. The effect of freezing and thawing on water flow and MCPA leaching in partially frozen soil. *J. Cont. Hydrol.*, 219, 72-85.
- Jarvis, N.** 2018. Meta-analysis of pesticide sorption in subsoil. *Environmental Toxicology & Chemistry*, 37, 755-761.
- Koestel, J.** 2018. SoilJ: An ImageJ Plugin for the Semiautomatic Processing of Three-Dimensional X-ray Images of Soils. *Vadose Zone J.* 17:170062. doi:10.2136/vzj2017.03.0062
- Koestel, J.**, Dathe, A., Skaggs, T., Klakegg, O., Ahmad, M.A., Babko, M., Giménez, D., Farkas, S., Nemes, A., **Jarvis, N.** 2018. Estimating the permeability of naturally structured soil from percolation theory and pore space characteristics imaged by X-ray. *Water Resources Research*, 54, doi.org/10.1029/2018WR023609.
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- Löv, Å., Cornelis, G., **Larsbo, M.**, Persson, I., Sjöstedt, C., Gustafsson, J. P., Boye, K. Kleja, D. B. 2018. Particle- and colloid-facilitated Pb transport in four historically contaminated soils - Speciation and effect of irrigation intensity. *Applied Geochemistry*, 96, 327–338.
- Maharjan, G., Hoffmann, H., Webber, H., Srivastava, A., Weihermüller, L., **Villa, A.**, **Coucheney, E.**, **Lewan, E.**, Trombi, G., Moriondo, M., Bindi, M., Grosz, B., Dechow, R., Kuhnert, M., Doro, L., Kersebaum, K-C., Stella, T., Specka, X., Nendel, C., Constantin, J., Raynal, H., Ewert, F., Gaiser, T. 2018. Effects of input data aggregation on simulated crop yields in temperate and Mediterranean climates. *European Journal of Agronomy*, 103, 32-46.
- Sandin, M.**, Piikki, K., **Jarvis, N.**, **Larsbo, M.**, Bishop, K., Kreuger, J. 2018. Spatial and temporal patterns of pesticide concentrations in streamflow, drainage and runoff in a small Swedish agricultural catchment. *Science of the Total Environment*, 610, 623-634.
- Sandin, M.**, **Jarvis, N.**, **Larsbo, M.** 2018. Consolidation and surface sealing of nine harrowed Swedish soils. *Soil and Tillage Research*, 181, 82-92.
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- Ulén, B., **Lewan, E.**, Kyllmar, K., Blomberg, M., Andersson, S. 2018. Impact of the North Atlantic Oscillation on Swedish winter climate and nutrient leaching. *Journal of Environmental Quality*, doi:10.2134/jeq2018.06.0237.
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## 2017

- Ghanbarian, B., Hunt, A.G., Skaggs, T.H., **Jarvis, N.** 2017. Upscaling soil saturated hydraulic conductivity from pore throat characteristics. *Advances in Water Resources*, 104, 105-113.
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- Jarvis, N., Larsbo, M., Koestel, J.** 2017. Connectivity and percolation of structural pore networks in a cultivated silt loam soil quantified by X-ray tomography. *Geoderma*, 287, 71-79.
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- Jarvis, N., Koestel, J., Larsbo, M.** 2017. Reply to 'Comment on "Understanding preferential flow in the vadose zone: recent advances and future prospects" by N. Jarvis et al.'. *Vadose Zone Journal*, 16, doi:10.2136/vzj2017.01.0034r.09.0075.
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- Löv, Å., Sjöstedt, C., **Larsbo, M.**, Persson, I., Gustafsson, J.P., Cornelis, G., Kleja, D.B. 2017. Solubility and transport of Cr(III) in a historically contaminated soil – Evidence of a rapidly reacting dimeric Cr(III) organic matter complex, *Chemosphere*, 189, 709-716.
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