

List of publications - AgroScapeLab Quillow (ASLQ), 2016-05 / 2019

2016-2017

1. Doetterl, S., Berhe, A. A., Nadeu, E., Wang, Z., Sommer, M., Fiener, P. (2016) 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.
2. Ellerbrock, R. H., Gerke, H. H., Deumlich, D. (2016) Soil organic matter composition along a slope in an erosion-affected arable landscape in North East Germany. *Soil & Tillage Research* 156, 209-218.
3. Wehrhan, M., Rauneker, P., Sommer, M. (2016) UAV-based estimation of carbon exports from heterogeneous soil landscapes - a case study from the CarboZALF experimental area. *Sensors* 16, 2, Article: 255.
4. Aldana Jague, E., Sommer, M., Saby, N. P. A., Cornelis, J.-T., Van Wesemael, B., Van Oost, K. (2016) High resolution characterization of the soil organic carbon depth profile in a soil landscape affected by erosion. *Soil & Tillage Research* 156, 185-193.
5. Miller, B. A., Koszinski, S., Hierold, W., Rogasik, H., Schröder, B., Van Oost, K., Wehrhan, M., Sommer, M. (2016) Towards mapping soil carbon landscapes: Issues of sampling scale and transferability. *Soil & Tillage Research* 156, 194-208.
6. Gerke, H. H., Rieckh, H., Sommer, M. (2016) Interactions between crop, water, and dissolved organic and inorganic carbon in a hummocky landscape with erosion-affected pedogenesis. *Soil & Tillage Research* 156, 230-244.
7. Sommer, M., Augustin, J., Kleber, M. (2016) Feedbacks of soil erosion on SOC patterns and carbon dynamics in agricultural landscapes - the CarboZALF experiment. *Soil & Tillage Research* 156, 182-184.
8. Specka, X., Nendel, C., Hagemann, U., Pohl, M., Hoffmann, M., Barkusky, D., Augustin, J., Sommer, M., Van Oost, K. (2016) Reproducing CO₂ exchange rates of a crop rotation at contrasting terrain positions using two different modelling approaches. *Soil & Tillage Research* 156, 219-229.
9. Herbrich, M., Gerke, H. H. (2016) Autocorrelation analysis of high resolution weighing lysimeter time series as a basis for determination of precipitation. *Journal of Plant Nutrition and Soil Science* 179, 6, 784-798.
10. Pütz, T., Kiese, R., Wollschläger, U., Groh, J., Rupp, H., Zacharias, S., Priesack, E., Gerke, H. H., Gasche, R., Bens, O., Borg, E., Baessler, C., Kaiser, K., Herbrich, M., Munch, J.-C., Sommer, M., Vogel, H.-J., Vanderborght, J., Vereecken, H. (2016) TERENO-SOILCan: a lysimeter-network in Germany observing soil processes and plant diversity influenced by climate change. *Environmental Earth Sciences* 75, 18, Article: 1242.
11. Premke, K., Attermeyer, K., Augustin, J., Cabezas, A., Casper, P., Deumlich, D., Gelbrecht, J., Gerke, H. H., Geßler, A., Grossart, H.-P., Hilt, S., Hupfer, M., Kalettka, T., Kayler, Z., Lischeid, G., Sommer, M., Zak, D. (2016) The importance of landscape diversity for carbon fluxes at the landscape level: small-scale heterogeneity matters. *Wiley Interdisciplinary Reviews: Water* 3, 4, 601-617.
12. Reverey, F., Grossart, H.-P., Premke, K., Lischeid, G. (2016) Carbon and nutrient cycling in kettle hole sediments depending on hydrological dynamics: a review. *Hydrobiologia* 775, 1, 1-20.
13. Vogel, E., Deumlich, D., Kaupenjohann, M. (2016) Bioenergy maize and soil erosion - Risk assessment and erosion control concepts. *Geoderma* 261, 80-92.
14. Kleeberg, A., Neyen, M., Kalettka, T. (2016) Element-specific downward fluxes impact the metabolism and vegetation of kettle holes. *Hydrobiologia* 766, 1, 261-274.

15. Kleeberg, A., Neyen, M., Schkade, U.-K., Kalettka, T., Lischeid, G. (2016) Sediment cores from kettle holes in NE Germany reveal recent impacts of agriculture. *Environmental Science and Pollution Research* 23, 8, 7409-7424.
16. Lischeid, G., Kalettka, T., Merz, C., Steidl, J. (2016) Monitoring the phase space of ecosystems: concept and examples from the Quillow catchment, Uckermark. *Ecological Indicators* 65, 55-65.
17. Müller, F., Bergmann, M., Dannowski, R., Dippner, J. W., Gnauck, A., Haase, P., Jochimsen, M. C., Kasprzak, P., Kröncke, I., Kümmerlin, R., Küster, M., Lischeid, G., Meesenburg, H., Merz, C., Millat, G., Müller, J., Padisák, J., Schimming, C. G., Schubert, H., Schult, M., Selmečzy, G., Shatwell, T., Stoll, S., Schwabe, M., Soltwedel, T., Straile, D., Theuerkauf, M. (2016) Assessing resilience in long-term ecological data sets. *Ecological Indicators* 65, 10-43.
18. Nitzsche, K., Verch, G., Premke, K., Geßler, A., Kayler, Z. (2016) Visualizing land-use and management complexity within biogeochemical cycles of an agricultural landscape. *Ecosphere* 7, e01282.
19. Müller T, Behrendt U, Ruppel S, Waydbrink Gvd, Müller MEH (2016) Fluorescent pseudomonads in the phyllosphere of wheat: potential antagonists against fungal phytopathogens. *Current Microbiology* 72, 4, 383-389.
20. Pasquali M, Beyer M, Logrieco A, Audenaert K, Balmas V, Basler R, Boutigny A-L, Chrpová J, Czembor E, Gagkaeva T, González-Jaén MT, Hofgaard IS, Köycü ND, Hoffmann L, Levic J, Marin P, Miedaner T, Migheli Q, Moretti A, Müller MEH, Munaut F, Parikka P, Pallez-Barthel M, Piec J, Scaufflaire J, Scherm B, Stankovic S, Thrane U, Uhlig S, Vanheule A, Yli-Mattila T, Vogelgsang S (2016) A European database of *Fusarium graminearum* and *F. culmorum* trichothecene genotypes. *Frontiers in Microbiology* 7, Article 406.
21. Müller MEH, Koszinski S, Bangs DE, Wehrhan M, Ulrich A, Verch G, Brenning A (2016) Crop biomass and humidity related factors reflect the spatial distribution of phytopathogenic *Fusarium* fungi and their mycotoxins in heterogeneous fields and landscapes. *Precision Agriculture* 17: 698-720.
22. Hoffmann, M., Wirth, S., Besler, H., Engels, C., Jochheim, H. Sommer, M., Augustin, J. (2017) Combining a root exclusion technique with continuous chamber and porous tube measurements for a pin-point separation of ecosystem respiration in croplands. *J. Plant Nutr. Soil Sci.*
23. Wis, F., Ghirardo, A., Schnitzler, J.-P., Nendel, C., Augustin, J., Hoffmann M., Grote, R. (2017) Net ecosystem fluxes and composition of BVOCs over a maize field - interaction of meteorology and phenological stages. *Global Change Biology Bioenergy*.
24. Hoffmann, M., Jurisch, N., Garcia Alba, D. J., Albiac Borraz, E., Schmidt, M., Huth, V., Rogasik, H., Rieckh, H., Verch, G., Sommer, M., Augustin, J. (2017) Detecting small-scale spatial heterogeneity and temporal dynamics of soil organic carbon (SOC) stocks: a comparison between automatic chamber-derived C budgets and repeated soil inventories. *Biogeosciences* 14, 4, 1003-1019.
25. Herbrich, M., Gerke, H.H. (2017). Scales of water retention dynamics observed in eroded Luvisols from arable hummocky soil landscape. *Vadose Zone Journal* (accepted).
26. Herbrich, M., Gerke, H.H., Bens, O., Sommer, M., 2017. Water balance and leaching of dissolved organic and inorganic carbon of eroded Luvisols using high precision weighing lysimeters. *Soil and Tillage Research* 165, 144-160.
27. Nitzsche, K., Kalettka, T., Premke, K., Lischeid, G., Geßler, A., Kayler, Z. (2017) Land-use and hydroperiod affect kettle hole sediment carbon and nitrogen biogeochemistry. *Science of the Total Environment* 574, 46-56.
28. Lischeid, G., Kalettka, T., Holländer, M., Steidl, J., Merz, C., Dannowski, R., Hohenbrink, T., Lehr, C., Onandia, G., Reverey, F., Pätzig, M. (2017) Natural ponds in an agricultural landscape: External drivers, internal processes, and the role of the terrestrial-aquatic interface. *Limnologia*, DOI: 10.1016/j.limno.2017.01.003.
29. Borges, F., Glemnitz, M., Schultz, A., & Stachow, U. (2017). Assessing the habitat suitability of agricultural landscapes for characteristic breeding bird guilds using landscape metrics. *Environmental Monitoring and Assessment* 189, 166.

30. Wulf, M., Jahn, U., Meier, K., Radtke, M. (2017) Tree species composition of a landscape in north-eastern Germany in 1780, 1890 and 2010. *Forestry* 90, 2, 174-186.
31. Wulf, M., Jahn, U., Meier, K. (2016) Land cover composition determinants in the Uckermark (NE Germany) over a 220-year period. *Regional Environmental Change* 16, 6, 1793-1805.
32. Heggemann, T., Welp, G., Amelung, W., Angst, G., Franz, S. O., Koszinski, S., Schmidt, K., Pätzold, S. (2017) Proximal gamma-ray spectrometry for site-independent in situ prediction of soil texture on ten heterogeneous fields in Germany using support vector machines. *Soil & Tillage Research* 168, 99-109.
33. Lischeid, G., Balla, D., Dannowski, R., Dietrich, O., Kalettka, T., Merz, C., Schindler, U., Steidl, J. (2017) Forensic hydrology: what function tells about structure in complex settings. *Environmental Earth Sciences* 76, 1, Article: 40.

2018 – 05/2019

1. Fiener, P., Wilken, F., Aldana-Jague, E., Deumlich, D., Gómez, J. A., Guzmán, G., Hardy, R. A., Quinton, J. N., Sommer, M., Van Oost, K., Wexler, R. (2018) Uncertainties in assessing tillage erosion - how appropriate are our measuring techniques? *Geomorphology* 304, 214-225.
2. Herbrich, M., Gerke, H. H., Sommer, M. (2018) Root development of winter wheat in erosion-affected soils depending on the position in a hummocky ground moraine soil landscape. *Journal of Plant Nutrition and Soil Science* 181, 2, 147-157.
3. Kappler, C., Kaiser, K., Tanski, P., Klos, F., Fülling, A., Mrotzek, A., Sommer, M., Bens, O. (2018) Stratigraphy and age of colluvial deposits indicating Late Holocene soil erosion in northeastern Germany. *Catena* 170, 224-245.
4. Wilken, F., Baur, M., Sommer, M., Deumlich, D., Bens, O., Fiener, P. (2018) Uncertainties in rainfall kinetic energy-intensity relations for soil erosion modelling. *Catena* 171, 234-244.
5. Heinrich, I., Balanzategui, D., Bens, O., Blasch, G., Blume, T., Böttcher, F., Borg, E., Brademan, B., Brauer, A., Conrad, C., Dietze, E., Dräger, N., Fiener, P., Gerke, H. H., Güntner, A., Heine, I., Helle, G., Herbrich, M., Heussner, K.-U., Hohmann, C., Itzerott, S., Kaiser, K., Kappler, C., Koebsch, F., Liebner, S., Lischeid, G., Merz, B., Missling, K.-D., Morgner, M., Pinkerneil, S., Plessen, B., Raab, T., Rhutz, T., Sachs, T., Sommer, M., Spengler, D., Stender, V., Stüve, P., Wilken, F. (2018) Interdisciplinary geo-ecological research across time scales in the Northeast German Lowland Observatory (TERENO-NE). *Vadose Zone Journal* 17, 1, Article Number: 180116.
6. van der Meij, M., Temme, A. J. A. M., Lin, H. S., Gerke, H. H., Sommer, M. (2018) On the role of hydrologic processes in soil and landscape evolution modeling: concepts, complications and partial solutions. *Earth-Science Reviews* 185, 1088-1106.
7. Filipović, V., Gerke, H. H., Filipović, L., Sommer, M. (2018) Quantifying subsurface lateral flow along sloping horizon boundaries in soil profiles of a hummocky ground moraine. *Vadose Zone Journal* 17, 1, Article Number: 170106.
8. Leue, M., Wohld, A., Gerke, H. H. (2018) Two-dimensional distribution of soil organic carbon at intact macropore surfaces in BT-horizons. *Soil & Tillage Research* 176, 1-9.
9. Hoffmann, M., Pohl, M., Jurisch, N., Prescher, A.-K., Mendez Campa, E., Hagemann, U., Remus, R., Verch, G., Sommer, M., Augustin, J. (2018) Maize carbon dynamics are driven by soil erosion state and plant phenology rather than nitrogen fertilization form. *Soil & Tillage Research* 175, 255-266.
10. Hoffmann, M., Wirth, S., Beßler, H., Engels, C., Jochheim, H., Sommer, M., Augustin, J. (2018) Combining a root exclusion technique with continuous chamber and porous tube measurements for a pin-point separation of ecosystem respiration in croplands. *Journal of Plant Nutrition and Soil Science* 181, 1, 41-50.
11. Lucas-Moffat, A. M., Huth, V., Augustin, J., Brümmer, C., Herbst, M., Kutsch, W. L. (2018) Towards pairing plot and field scale measurements in managed ecosystems: Using eddy covariance to cross-validate CO₂ fluxes modeled from manual chamber campaigns. *Agricultural and Forest Meteorology* 256-257, 362-378.
12. Remus, R., Kaiser, M., Kleber, M., Augustin, J., Sommer, M. (2018) Demonstration of the rapid incorporation of carbon into protective, mineral-associated organic carbon fractions in an eroded soil from the CarboZALF experimental site. *Plant and Soil* 430, 1-2, 329-348

13. Kayler, Z., Badrian, M., Frackowski, A., Rieckh, H., Nitzsche, K., Kalettka, T., Merz, C., Geßler, A. (2018) Ephemeral kettle hole water and sediment temporal and spatial dynamics within an agricultural catchment. *Ecohydrology* 11, 2, e1929.
14. Lehr, C., Dannowski, R., Kalettka, T., Merz, C., Schröder, B., Steidl, J., Lischeid, G. (2018) Detecting dominant changes in irregularly sampled multivariate water quality data sets. *Hydrology and Earth System Sciences* 22, 8, 4401-4424.
15. Lischeid, G., Kalettka, T., Holländer, M., Steidl, J., Merz, C., Dannowski, R., Hohenbrink, T., Lehr, C., Onandia, G., Reverey, F., Pätzig, M. (2018) Natural ponds in an agricultural landscape: external drivers, internal processes, and the role of the terrestrial-aquatic interface. *Limnologica* 68, 5-16.
16. Kazanjian, G., Flury, S., Attermeyer, K., Kalettka, T., Kleeberg, A., Premke, K., Köhler, J., Hilt, S. (2018) Primary production in nutrient-rich kettle holes and consequences for nutrient and carbon cycling. *Hydrobiologia* 806, 1, 77-93.
17. Lozada-Gobilard, S., Stang, S., Pirhofer-Walzl, K., Kalettka, T., Heinken, T., Schröder, B., Eccard, J., Joshi, J. (2019) Environmental filtering predicts plant-community trait distribution and diversity: kettle holes as models of meta-community systems. *Ecology and Evolution* 9, 4, 1898-1910.
18. Onandia, G., Lischeid, G., Kalettka, T., Kleeberg, A., Omari, M., Premke, K., Arhonditsis, G. B. (2018) Biogeochemistry of natural ponds in agricultural landscape: Lessons learned from modeling a kettle hole in Northeast Germany. *Science of the Total Environment* 634, 1615-1630.
19. Reverey, F., Ganzert, L., Lischeid, G., Ulrich, A., Premke, K., Grossart, H.-P. (2018) Dry-wet cycles of kettle hole sediments leave a microbial and biogeochemical legacy. *Science of the Total Environment* 627, 985-996.
20. Schiro, G., Verch, G., Grimm, V., Müller, M. (2018) *Alternaria* and *Fusarium* fungi: differences in distribution and spore deposition in a topographically heterogeneous wheat field. *Journal of Fungi* 4, 2, Article: 63.
21. Ullmann, W., Fischer, C., Pirhofer-Walzl, K., Kramer-Schadt, S., Blaum, N. (2018) Spatiotemporal variability in resources affects herbivore home range formation in structurally contrasting and unpredictable agricultural landscapes. *Landscape Ecology* 33, 9, 1505-1517.
22. Leue, M., Beck-Broichsitter, S., Felde, V. J. M. N. L., Gerke, H. H. (2019) Determining mm-scale maps of cation exchange capacity at macropore surfaces in Bt-horizons. *Vadose Zone Journal*.
23. Leue, M., Uteau-Puschmann, D., Peth, S., Nellesen, J., Kodešová, R., Gerke, H. H. (2019) Separation of soil macropore types in 3D X-ray CT-images based on pore geometry characteristics. *Vadose Zone Journal*.
24. Schiro, G., Müller, T., Verch, G., Sommerfeld, T., Mauch, T., Koch, M., Grimm, V., Müller, M. (2019) The distribution of mycotoxins in a heterogeneous wheat field in relation to microclimate, fungal and bacterial abundance. *Journal of Applied Microbiology* 126, 1, 177-190.
25. Calitri, F., Sommer, M., Norton, K., Temme, A., Brandova, D., Portes, R., Christl, M., Ketterer, M.E., Egli, M. (2019). Tracing the temporal evolution of soil redistribution rates in an agricultural landscape using $^{239+240}\text{Pu}$ and ^{10}Be . *Earth Surface Processes and Landforms* (accepted)
26. Leue, M., Hoffmann, C., Hierold, W., Sommer, M. (2019) In-situ multi-sensor characterization of soil cores along an erosion-deposition gradient. *Catena* (accepted)
27. van der Kroef, I., Koszinski, S., Grinat, M., van der Meij, M., Hierold, W., Südekum, W., Sommer, M. (2019) Digital mapping of buried soil horizons using 2D and pseudo3D geoelectrical measurements. *European Journal of Soil Science* (accepted)
28. van der Meij, W.M., Reimann, T., Vornehme, V.K., Temme, A., Wallinga, J., van Beek, R., Sommer, M. (2019). Reconstructing rates and patterns of colluvial soil redistribution in an agrarian kettle hole. *Earth Surface Processes and Landforms* (accepted)