

Publications of Carsten Montzka

Peer-reviewed journal publications:

Babaeian, E., M. Homaei, **C. Montzka**, H. Vereecken and A.A. Norouzi (accepted): Towards estimating soil hydraulic properties by hyperspectral remote sensing. *Vadose Zone Journal*

Rötzer, K., **C. Montzka** and H. Vereecken (2015): Spatio-temporal variability of global soil moisture products. *Journal of Hydrology* 522, 187-202. DOI: [10.1016/j.jhydrol.2014.12.038](https://doi.org/10.1016/j.jhydrol.2014.12.038)

Rudolph, S., J. van der Kruk, Ch. von Hebel, M. Ali, M. Herbst, **C. Montzka**, S. Pätzold, D.A. Robinson, H. Vereecken and L. Weihermüller (2015): Linking satellite derived LAI patterns with subsoil heterogeneity using large-scale ground-based electromagnetic induction measurements. *Geoderma* 241-242, 262-271. DOI: [10.1016/j.geoderma.2014.11.015](https://doi.org/10.1016/j.geoderma.2014.11.015)

Rötzer, K., **C. Montzka**, H. Bogaen, W. Wagner, Y.H. Kerr, R. Kidd and H. Vereecken (2014): Catchment scale validation of SMOS and ASCAT soil moisture products using hydrological modeling and temporal stability analysis. *Journal of Hydrology* 519, 934 - 946. DOI: [10.1016/j.jhydrol.2014.07.065](https://doi.org/10.1016/j.jhydrol.2014.07.065)

Han, X., H.-J. Hendricks Franssen, **C. Montzka** and H. Vereecken (2014): Joint Soil Moisture and Soil Properties Estimation in the Community Land Model with Remotely Sensed Brightness Temperature. Special Section on Patterns in Soil-Vegetation-Atmosphere Systems: Monitoring, Modelling and Data Assimilation, *Water Resources Research* 50, 6081 - 6105. DOI: [10.1002/2013WR014586](https://doi.org/10.1002/2013WR014586)

Baatz, R., H. Bogaen, H.-J. Hendricks Franssen, J.A. Huisman, W. Qu, **C. Montzka** and H. Vereecken (2014): Calibration of a catchment scale cosmic-ray probe network: A comparison of three parameterization methods. *Journal of Hydrology* 516, 231 - 244. DOI: [10.1016/j.jhydrol.2014.02.026](https://doi.org/10.1016/j.jhydrol.2014.02.026)

Vereecken, H., J. A. Huisman, Y. Pachepsky, **C. Montzka**, J. van der Kruk, H. Bogaen, L. Weihermüller, M. Herbst, G. Martinez and J. Vanderborght (2014): On the spatio-temporal dynamics of soil moisture at the field scale. *Journal of Hydrology* 516, 76 - 96. DOI: [10.1016/j.jhydrol.2013.11.061](https://doi.org/10.1016/j.jhydrol.2013.11.061)

Hasan, S., **C. Montzka**, C. Rüdiger, M. Ali, H. Bogaen and H. Vereecken (2014): Soil moisture retrieval from airborne L-band passive microwave using high resolution multispectral data. *ISPRS Journal of Photogrammetry and Remote Sensing* 91, 59 - 71. DOI: [10.1016/j.isprsjprs.2014.02.005](https://doi.org/10.1016/j.isprsjprs.2014.02.005)

Montzka, C., J. P. Grant, H. Moradkhani, H.-J. Hendricks-Franssen, L. Weihermüller, M. Drusch and H. Vereecken (2013): Estimation of radiative transfer parameters from L-band passive microwave brightness temperatures using advanced data assimilation. *Vadose Zone Journal*, Special Section on Remote Sensing of Vadose Zone Hydrology 12(3). DOI: [10.2136/vzj2012.0040](https://doi.org/10.2136/vzj2012.0040)

Mohanty, B. P., M. Cosh, V. Lakshmi and **C. Montzka** (2013): Remote Sensing for Vadose Zone Hydrology—A Synthesis from the Vantage Point. *Vadose Zone Journal*, Special Section on Remote Sensing of Vadose Zone Hydrology 12(3). DOI: [10.2136/vzj2013.07.0128](https://doi.org/10.2136/vzj2013.07.0128)

Han, X., H.-J. Hendricks Franssen, X. Li, Y. Zhang, **C. Montzka** and H. Vereecken (2013): Joint Assimilation of Surface Temperature and L-band Microwave Brightness Temperature in Land Data Assimilation. *Vadose Zone Journal*, Special Section on Remote Sensing of Vadose Zone Hydrology 12(3). DOI: [10.2136/vzj2012.0072](https://doi.org/10.2136/vzj2012.0072)

Montzka, C., H. Bogaen, L. Weihermüller, F. Jonard, C. Bouzinac, J. Kainulainen, J. E. Balling, A. Loew, J. T. dall'Amico, E. Rouhe, J. Vanderborght and H. Vereecken (2013): Brightness temperature and soil moisture validation at different scales during the SMOS Validation Campaign in the Rur and Erft catchments, Germany. *IEEE Transactions on Geosciences and Remote Sensing* 51 (3), 1728 - 1743, DOI: [10.1109/TGRS.2012.2206031](https://doi.org/10.1109/TGRS.2012.2206031)

Zhao, L., K. Yang, J. Qin, Y. Chen, W. Tang, **C. Montzka**, H. Wu, C. Lin, M. Han, and H. Vereecken (2013): Spatiotemporal analysis of soil moisture observations within a Tibetan mesoscale area and its implication to regional soil moisture measurements. *Journal of Hydrology* 482, 92 - 104. [DOI:10.1016/j.jhydrol.2012.12.033](https://doi.org/10.1016/j.jhydrol.2012.12.033)

Montzka, C., V. R. N. Pauwels, H.-J. Hendricks Franssen, X. Han and H. Vereecken (2012): Multivariate and multiscale data assimilation in terrestrial systems: A review. *Sensors* 12(12), 16291-16333. [DOI:10.3390/s121216291](https://doi.org/10.3390/s121216291)

Montzka, C. and H. Vereecken (2012): Improved remote sensing of surface soil moisture. *SPIE Newsroom*, 13 September 2012. [DOI: 10.1117/2.1201209.004470](https://doi.org/10.1117/2.1201209.004470)

Vereecken, H., L. Weihermüller, F. Jonard, and **C. Montzka** (2012): Characterization of crop canopies and water stress related phenomena using microwave methods: A review. *Vadose Zone Journal* 11(2). [DOI: 10.2136/vzj2011.0138ra](https://doi.org/10.2136/vzj2011.0138ra)

Han, X., X. Li, H.-J. Hendricks Franssen, H. Vereecken and **C. Montzka** (2012): Spatial horizontal correlation characteristics in the land data assimilation of soil moisture. *Hydrology and Earth System Science (HESS)*, 16, 1349-1363. [DOI:10.5194/hess-16-1349-2012](https://doi.org/10.5194/hess-16-1349-2012)

Montzka, C., H. Moradkhani, L. Weihermüller, H.-J. Hendricks Franssen, M. Canty and H. Vereecken (2011): Hydraulic Parameter Estimation by Remotely-Sensed Top Soil Moisture Observations with the Particle Filter. *Journal of Hydrology* 399, 410 - 421. [DOI:10.1016/j.jhydrol.2011.01.020](https://doi.org/10.1016/j.jhydrol.2011.01.020)

Montzka, C., M. Canty, P. Kreins, R. Kunkel, G. Menz, H. Vereecken and F. Wendland (2008): Multispectral remotely sensed data in modelling the annual variability of nitrate concentrations in the leachate. *Environmental Modelling and Software* 23(8), 1070 - 1081. [DOI:10.1016/j.envsoft.2007.11.010](https://doi.org/10.1016/j.envsoft.2007.11.010)

Montzka, C., M. Canty, R. Kunkel, G. Menz, H. Vereecken and F. Wendland (2008): Modelling the water balance of a mesoscale catchment basin using remotely sensed land cover data. *Journal of Hydrology* 353, 322 - 334. [DOI:10.1016/j.jhydrol.2008.02.018](https://doi.org/10.1016/j.jhydrol.2008.02.018)

Bogena, H., R. Kunkel, **C. Montzka** and F. Wendland (2005): Uncertainties in the simulation of groundwater recharge at different scales. *Advances in Geosciences* 5, 25 - 30. [DOI: 10.5194/adgeo-5-25-2005](https://doi.org/10.5194/adgeo-5-25-2005)

Books:

Montzka, C. (2013): Soil Moisture Remote Sensing and Data Assimilation. In: *Remote Sensing of Land Surface Turbulent Fluxes And Soil Moisture: State of the Art*, G. P. Petropoulos, Ed.: Taylor & Francis Book, pp. 391-410.

Montzka, C. (2008): LANDSAT-Analyse für die Disaggregation von Nährstoffüberschüssen: Cluster-Analyse und überwachte Klassifikation für das Flusseinzugsgebiet der Rur. VDM-Verlag, 176 p.

Karpuzcu, M., N. Agiralioglu, N. Alpaslan, G. Egin, H. Gömann, O. Gunduz, M. Kocal, S. Oncel, A. Pekdeger, H. Voigt, P. Kuhr, **C. Montzka**, B. Tetzlaff, H. Vereecken and F. Wendland (2008): Integrated Modelling of Nutrients in selected river basins of Turkey: Results of a bilateral German-Turkish research project. *Schriften des Forschungszentrums Jülich. Reihe Energie & Umwelt / Energy & Environment* 17

Montzka, C. (2008): Einsatz von multispektralen Satellitenbilddaten in der Wasserhaushalts- und Stoffstrommodellierung - dargestellt am Beispiel des Rureinzugsgebietes. *Schriften des Forschungszentrums Jülich. Reihe Energie & Umwelt / Energy & Environment* 1

Kunkel, R., **C. Montzka** and F. Wendland (2007): Anwendung des im Forschungszentrum Jülich entwickelten Modells WEKU zur Ableitung flussgebietsbezogener Aufenthaltszeiten des Grundwassers in Deutschland.

UFOPLAN-Project 205 24 204: Entwicklung eines szenariofähigen Managementtools für Stickstoffeinträge in Oberflächengewässer im Rahmen internationaler Berichtspflichten. Final Report, 88 p., Forschungszentrum Juelich GmbH, Juelich

Bogena, H., J.-F. Hake, M. Herbst, R. Kunkel, **C. Montzka**, Th. Puetz, H. Vereecken and F. Wendland (2005): MOSYRUR - Water balance analysis in the Rur basin. Reihe Umwelt/Environment 52, Juelich

Conference papers/presentations:

C. Montzka, Xujun Han, Harrie-Jan Hendricks Franssen, Thomas Pütz and Harry Vereecken (2014): Performance evaluation of the Particle Smoother with Sequential Importance Resampling for soil hydraulic parameter estimation. AGU Fall Meeting, San Francisco, 15 - 19 December 2014 (Poster)

I. Hajnsek, M. Eineder, T. Walter, A. Friedrich, P. Bieber, A. Huth, K. Papathanassiou, **C. Montzka**, U. Wollschläger, B. Thies, A. Humbert, M. Braun, G. Krieger and A. Moreira (2014): Remote Sensing and Earth System Dynamics: The Helmholtz Alliance. AGU Fall Meeting, San Francisco, 15 - 19 December 2014 (Oral Presentation)

C. von Hebel, S. Rudolph, A. Mester, J.A. Huisman, **C. Montzka**, L. Weihermüller, H. Vereecken and J. van der Kruk (2014): Towards catchment vadose zone characterization by linking geophysical and remote sensing data. AGU Fall Meeting, San Francisco, 15 - 19 December 2014 (Poster)

C. Montzka, J. Bendix, T. Blume, H. Bogena, V. Brancato, P. Dietrich, S. Eiermann, T. Grau, A. Güntner, I. Hajnsek, I. Heidbüchel, H.-J. Hendricks Franssen, S. Itzerott, T. Jagdhuber, F. Jonard, H. Kunstmann, W. Kurtz, A. Lehmann, C. Lorenz, P. Marzahn, L. Samaniego, I. Schröter, D. Spengler, D. Spieler, S. Suchandt, B. Thies, H. Vereecken, S. Vey, J. Wickert, U. Wollschläger and S. Zwieback (2014): The Hydrosphere section of the Helmholtz Alliance on Remote Sensing and Earth System Dynamics: Enhancing the understanding of hydrological processes by remote sensing. TERENO International Conference, Bonn, Germany, 29 September - 2 October 2014 (Poster)

C. Montzka (2014): Microwave Remote Sensing for Soil Moisture Estimation. Summer School "GRACE/GRACE-FO applications for the terrestrial water cycle", Mayschoss, Germany, 18 September 2014 (Invited Presentation)

C. Montzka, H. Bogena, T. Jagdhuber, I. Hajnsek, R. Horn, A. Reigber, S. Hasan, C. Rüdiger, M. Jaeger and H. Vereecken (2014): Active and passive L-band microwave remote sensing for soil moisture – a test bed for SMAP fusion algorithms. International Geosciences and Remote Sensing Symposium (IGARSS), Quebec, Canada, 13 - 18 July 2014 (Oral Presentation and Paper)

C. Montzka, H. Bogena, T. Jagdhuber, I. Hajnsek, R. Horn, A. Reigber, S. Hasan, C. Rüdiger, M. Jaeger and H. Vereecken (2014): Active and passive L-band microwave remote sensing for soil moisture – a test bed for SMAP fusion algorithms. HGF Alliance Week, Garmisch-Partenkirchen, 30. June - 4. July 2014 (Oral Presentation)

R. Baatz, H. Bogena, H.-J. Hendricks Franssen, J. A. Huisman, **C. Montzka**, and H. Vereecken (2014): Quantification of seasonal biomass effects on cosmic-ray soil water content determination. HGF Alliance Week, Garmisch-Partenkirchen, 30. June - 4. July 2014 (Poster)

A. Sorrentino, T. Jagdhuber, I. Hajnsek, **C. Montzka**, K.P. Papathanassiou, A. Iodice (2014): Investigation of Polarimetric Active/Passive Microwave Scattering Towards Soil Moisture Estimation. IEEE GOLD Remote Sensing Conference, Berlin, Germany, 5 - 6 June 2014 (Poster)

A. Sorrentino, T. Jagdhuber, I. Hajnsek, **C. Montzka**, K.P. Papathanassiou, A. Iodice (2014): Investigation of Polarimetric Active/Passive Microwave Scattering Towards Soil Moisture Estimation. EUSAR 2014 – 10th European Conference on Synthetic Aperture Radar, Berlin, Germany, 3 - 5 June 2014 (Poster)

K. Rötzer, **C. Montzka**, and H. Vereecken (2014): Global soil moisture products and their spatial and temporal variability. ESA Dragon 3 Symposium, Chengdu, China, 26 - 29 May 2014 (Oral Presentation)

C. Montzka, H. Bogena, T. Jagdhuber, I. Hajnsek, R. Horn, A. Reigber, S. Hasan, C. Rüdiger, M. Jaeger and H. Vereecken (2014): Soil moisture estimation by airborne active and passive microwave remote sensing: A test-bed for SMAP fusion algorithms. European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014 (Poster)

C.M. Mboh, **C. Montzka**, R. Baatz and H. Vereecken (2014): A novel partial grid search approach for handling complex multi-dimensional parameter estimation and state improvement at the catchment scale. European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014 (Poster)

M. Ali, **C. Montzka**, A. Graf, F. Jonard and H. Vereecken (2014): Catchment scale estimation of evapotranspiration from remote sensing data based on an energy balance approach: A validation study for the Rur catchment, Germany. European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014 (Poster)

R. Baatz, H. Bogena, H.-J. Hendriks-Franssen, J.A. Huisman, **C. Montzka** and H. Vereecken (2014): Quantification of seasonal biomass effects on cosmic-ray soil water content determination. European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014 (Poster)

C. Montzka, T. Jagdhuber, H. Bogena, I. Hajnsek, R. Horn, A. Reigber, S. Hasan and H. Vereecken (2014): Fusion of Active and Passive Microwave: TERENO 2013. HGF Alliance Hydrosphere Meeting, Alexisbad, 10 - 11 March 2014 (Oral Presentation)

C. Montzka, S. Hasan, C. Rüdiger, M. Ali, A. Stadler, G. Menz, H. Bogena and H. Vereecken (2014): Using RapidEye LAI for soil moisture estimation. 6. RapidEye Science Archive Workshop, DLR Bonn-Oberkassel, 5 - 6 March 2014 (Oral Presentation)

A. Stadler, S. Rudolph, M. Ali, M. Kupisch, **C. Montzka**, M. Langensiepen and F. Ewert (2014): Modeling crop growth heterogeneity patterns using apparent soil electrical conductivity maps. International Conference on Global Vegetation Monitoring and Modeling, Avignon, France, 3 - 7 February 2014 (Poster Presentation)

K. Rötzer, **C. Montzka** and H. Vereecken (2013): Spatial and temporal variability of modeled and remotely sensed soil moisture products. AGU Fall Meeting, San Francisco, USA, 8 - 13 December 2013

C. Montzka, J. Grant, X. Han, H.-J. Hendricks Franssen and H. Vereecken (2013): A Particle Smoother with Sequential Importance Resampling for lysimeter soil hydraulic parameter estimation. Sino-German Symposium on Water Resources Under Stress: Facing Challenges of Land Use and Climate Change, Shijiazhuang, Hebei, China, 21 - 25 October 2013 (Oral Presentation)

Zhu, Z., S. Liu, G. C. Yang, H. Vereecken and **C. Montzka** (2013): Evapotranspiration processes observed by lysimeters in Huailai station. Sino-German Symposium on Water Resources Under Stress: Facing Challenges of Land Use and Climate Change, Shijiazhuang, Hebei, China, 21 - 25 October 2013 (Oral Presentation)

C. Montzka, J. Grant, X. Han, H.-J. Hendricks Franssen and H. Vereecken (2013): A Particle Smoother with Sequential Importance Resampling. HGF Alliance Week, Garmisch-Partenkirchen, Germany, 7 – 10 October 2013 (Oral Presentation)

C. Montzka, J. Grant, M. Drusch, H.-J. Hendricks Franssen and H. Vereecken (2013): L-band Radiative Transfer Parameter Estimation with a Particle Smoother. ESA Living Planet Symposium, Edinburgh, UK, 9 - 13 September 2013 (Oral Presentation)

C.M. Mboh, **C. Montzka**, P. Kumbhar and H. Vereecken (2013): Feasibility of Estimating Soil Surface Roughness and Vegetation Opacity from Disaggregated SMOS Brightness Temperatures. ESA Living Planet Symposium, Edinburgh, UK, 9 - 13 September 2013 (Poster)

C. Montzka, J. P. Grant, H.-J. Hendricks Franssen, M. Drusch, and H. Vereecken (2013): A particle smoother with sequential importance resampling for radiative transfer parameter estimation. International Geosciences and Remote Sensing Symposium (IGARSS), Melbourne, Australia, 21 - 26 July 2013. [DOI:10.1109/IGARSS.2013.6723566](https://doi.org/10.1109/IGARSS.2013.6723566) (Oral Presentation and Paper)

M. Ali, **C. Montzka**, A. Stadler, G. Menz, and H. Vereecken (2013): Estimation and validation of leaf area index time series for crops on 5m scale from space. International Geosciences and Remote Sensing Symposium (IGARSS), Melbourne, Australia, 21 - 26 July 2013. [DOI:10.1109/IGARSS.2013.6723668](https://doi.org/10.1109/IGARSS.2013.6723668) (Poster and Paper)

H. Vereecken, H. Bogaen, A. Weuthen, U. Rosenbaum, J.A. Huisman, J. van der Kruk, H.-J. Hendricks-Franssen, **C. Montzka**, F. Jonard, and J. Vanderborght (2013): Soil water content and hydrological fluxes in terrestrial systems: from measurement to prediction. SPA International Conference, Neapel, Italy, 20 June 2013 (Invited Presentation)

C. Montzka, J. Grant, X. Han, H.-J. Hendricks Franssen, M. Drusch, H. Vereecken (2013): Radiative Transfer Parameter Estimation with a Particle Smoother. ESA Dragon 3 Symposium, Palermo, Italy, 3 - 7 June 2013 (Oral Presentation)

C. Montzka, H. Moradkhani, and H. Vereecken (2013): Surface soil moisture product validation and data assimilation for soil moisture profile estimation. 6th International Conference on Water Resources and Environment Research, Koblenz, Germany, 3 - 7 June 2013 (Oral Presentation)

K. Rötzer, **C. Montzka**, and H. Vereecken (2013): Spatio-temporal variability of global remotely sensed soil moisture products. 6th International Conference on Water Resources and Environment Research, Koblenz, Germany, 3 - 7 June 2013 (Poster)

H. Bogaen, R. Baatz, H.-J. Hendricks Franssen, J. A. Huisman, **C. Montzka** and H. Vereecken (2013): Effects of soil heterogeneity and vegetation on cosmic ray soil moisture observations. 12th International UFZ-Deltares Conference on Groundwater-Soil-Systems and Water Resource Management, Barcelona, Spain, 16 - 19 April 2013 (Oral Presentation)

C. Montzka, H.-J. Hendricks Franssen, H. Moradkhani, T. Pütz, X. Han and H. Vereecken (2013): A Particle Smoother with Sequential Importance Resampling for soil hydraulic parameter estimation: A lysimeter experiment. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 - 12 April 2013 (Oral Presentation)

X. Han, H.-J. Hendricks Franssen, **C. Montzka** and H. Vereecken (2013): Joint State and Parameter Estimation in CLM4 with Remotely Sensed Brightness Temperature. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 - 12 April 2013 (Oral Presentation)

S. Rudolph, C. von Hebel, M. Ali, A. Stadler, M. Herbst, **C. Montzka**, S. Pätzold, L. Weihermüller, J. van der Kruk and H. Vereecken (2013): Validation of a paleo river system derived by ground based electromagnetic induction measurements with satellite based RapidEye images. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 - 12 April 2013 (Oral Presentation)

C. M. Mboh, **C. Montzka**, P. Kumbhar, X. Han and H. Vereecken (2013): Effect of uncertainty on CMEM forcing data on SMOS brightness temperature predictions in the Rur and Erft Catchments in Germany. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 - 12 April 2013 (Poster)

W. Kessomkiat, **C. Montzka**, L. Weihermüller, H. Vereecken and H.-J. Hendricks Franssen (2013): Joint assimilation of soil moisture and eddy covariance data with the particle filter in the HYDRUS model. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 – 12 April 2013 (Poster)

K. Rötzer, **C. Montzka** and H. Vereecken (2013): Spatial and temporal variability of SMOS and ASCAT soil moisture products. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 – 12 April 2013 (Poster)

S. Hasan, **C. Montzka**, H. Bogaen, C. Rüdiger, M. Ali and H. Vereecken (2013): Vegetation effects on airborne passive microwave response to soil moisture: A case study for the Rur catchment, Germany. European Geosciences Union General Assembly 2013, Vienna, Austria, 7 – 12 April 2013 (Poster)

C. Montzka and Xujun Han (2013): SMASPARES: SMOS Tb assimilation for parameter estimation. Sci_net workshop, Frascati, Italy, 25 - 26 March 2013 (Oral Presentation)

M. Ali, **C. Montzka**, A. Stadler and H. Vereecken (2013): Validation of Leaf Area Index calculated on RapidEye imagery against in situ measurements in Rur catchment, Germany. In: Borg, Daedelow, Johnson (eds), Proceedings of 5th RESA workshop (From the Basics to the Service), Neustrelitz, Germany, 20 - 21 March 2013, pp. 159-171 (Oral presentation and Paper)

C. Montzka, H.-J. Hendricks Franssen, H. Moradkhani, T. Pütz, X. Han and H. Vereecken (2013): A Sequential Importance Resampling Particle Smoother for soil hydraulic parameter estimation: A lysimeter experiment. International Symposium on Patterns in Soil-Vegetation-Atmosphere-Systems: Monitoring, Modelling & Data Assimilation, Bonn, Germany, 11 - 14 March 2013 (Oral Presentation)

X. Han, H.-J. Hendricks Franssen, **C. Montzka**, H. Vereecken (2013): Joint State and Parameter Estimation with Sequential Data Assimilation in CLM4. International Symposium on Patterns in Soil-Vegetation-Atmosphere-Systems: Monitoring, Modelling & Data Assimilation, Bonn, Germany, 11 - 14 March 2013 (Poster)

S. Hasan, **C. Montzka**, H. Bogaen, C. Rüdiger, M. Ali, H. Vereecken (2013): Vegetation effects on airborne passive microwave response to soil moisture: A case study for the Rur catchment, Germany. International Symposium on Patterns in Soil-Vegetation-Atmosphere-Systems: Monitoring, Modelling & Data Assimilation, Bonn, Germany, 11 - 14 March 2013 (Oral Presentation)

C. Montzka, K. Rötzer and H. Vereecken (2013): SMOS brightness temperature and soil moisture validation in the Rur/Erft Catchment, Germany. SMOS Land Applications Workshop, Frascati, Italy, 25 - 27 February 2013 (Oral Presentation)

C. Montzka, S. Hasan, H. Bogaen, I. Hajnsek, R. Horn, T. Jagdhuber, A. Reigber, N. Hermes, C. Rüdiger and H. Vereecken (2012): Active and passive airborne microwave remote sensing for soil moisture retrieval in the Rur catchment, Germany. International Geosciences and Remote Sensing Symposium (IGARSS), Munich, Germany, 22 - 27 July 2012, 6956 - 6959. [DOI:10.1109/IGARSS.2012.6352562](https://doi.org/10.1109/IGARSS.2012.6352562) (Oral Presentation and Paper)

K. Rötzer, **C. Montzka**, H. Bogaen, W. Wagner, R. Kidd and H. Vereecken (2012): Time series analysis of SMOS and ASCAT: Soil moisture product validation in the Rur and Erft catchments. International Geosciences and Remote Sensing Symposium (IGARSS), Munich, Germany, 22 - 27 July 2012, 3716 - 3719. [DOI:10.1109/IGARSS.2012.6350510](https://doi.org/10.1109/IGARSS.2012.6350510) (Oral Presentation and Paper)

Mboh, C. M., **C. Montzka** and H. Vereecken (2012): Possibility of improving SMOS soil moisture retrieval from brightness temperatures using data assimilation. 5th International Workshop on Catchment Hydrological Modeling and Data Assimilation (CAHMDA-V), Enschede, The Netherlands, 9 - 13 July 2012 (Poster)

Baatz, R., H.-J. Hendricks Franssen, X. Han, H. Bogaen, Q. Wei, **C. Montzka** and H. Vereecken (2012): Development of a Non-Linear Measurement Operator for Cosmic Ray Soil Moisture Measurements in a

Land Surface Model. 5th International Workshop on Catchment Hydrological Modeling and Data Assimilation (CAHMDA-V), Enschede, The Netherlands, 9 - 13 July 2012 (Poster)

Kessomkiat, W., H.-J. Hendricks Franssen, **C. Montzka**, L. Weihermüller and H. Vereecken (2012): Assimilation of Soil Moisture and Eddy Covariance Data by Particle Filter to Improve Predictions with HYDRUS-1D. 5th International Workshop on Catchment Hydrological Modeling and Data Assimilation (CAHMDA-V), Enschede, The Netherlands, 9 - 13 July 2012 (Poster)

Jagdhuber, T., M. Kohling, I. Hajnsek, **C. Montzka**, and K.P. Papathanassiou (2012): Validation of Distributed Soil Moisture: Airborne Polarimetric SAR vs. Ground-based Sensor Networks. Geophysical Research Abstracts 14, EGU2012-5695, EGU General Assembly 2012, Vienna, 22 - 27 April 2012 (Oral Presentation)

Qu, W., H. Bogen, **C. Montzka**, and H. Vereecken (2012): Temporal stability of soil water content in a small grassland head water catchment in western Germany observed by a wireless sensor network. Geophysical Research Abstracts 14, EGU2012-6280-1, EGU General Assembly 2012, Vienna, 22 - 27 April 2012 (Poster)

Hasan, S., **C. Montzka**, H. Bogen, C. Rüdiger, and H. Vereecken (2012): Airborne Passive microwave response to soil moisture: A case study for the Rur catchment. Geophysical Research Abstracts 14, EGU2012-9509-1, EGU General Assembly 2012, Vienna, 22 - 27 April 2012 (Poster)

Baatz, R., H. Bogen, H.-J. Hendricks-Franssen, J.A. Huisman, **C. Montzka**, and H. Vereecken (2012): Development of a measurement operator for cosmic ray soil moisture observations. Geophysical Research Abstracts 14, EGU2012-11085, EGU General Assembly 2012, Vienna, 22 - 27 April 2012 (Poster)

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Vereecken, H. H.-J. Hendricks-Franssen, **C. Montzka**, H. Bogaen, U. Rosenbaum; J. A. Huisman, J. van der Kruk and J. Vanderborght (2011): Soil water content and hydrological fluxes in terrestrial systems: from measurement to prediction. AGU Fall Meeting, San Francisco, 5 - 9 December 2011 (Invited Presentation)

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Baatz, R., **C. Montzka**, X. Han, H. Bogaen, H. Vereecken and H.-J. Hendricks Franssen (2011): Improving soil moisture states and model parameters of a coupled land surface model (ParFlow-CLM). German Symposium On Data Assimilation, Offenbach, Germany, 28 - 30 September 2011 (Poster)

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Hendricks Franssen, H.-J., H. Bogaen, **C. Montzka**, A. Graf, S. Huisman, J. Vanderborght and H. Vereecken (2011): Conditioning data for physically based hydrological models: the complex link between data and the unknown „reality“. Water Science Horizon Conference, Berlin, 8 - 9 June (Invited Presentation)

Vereecken, H., H. Bogaen, J.A. Huisman, J. van der Kruk, S. Lambot, **C. Montzka**, T. Pütz, J. Vanderborght and L. Weihermüller (2011): Terrestrial Environmental Observatories. New Research Tool. In-situ Environmental Monitoring and Policy, The Application of Sensors and Passive Samplers, Ghent, Belgium, 26 May 2011 (Invited Presentation)

Jonard, F., **C. Montzka**, H. Bogaen, S. Hasan and H. Vereecken (2011): SMAP validation activities of the Agrosphere Institute in the Rur catchment, Germany. SMAP Cal/Val Workshop, Oxnard (California, USA), 3 - 5 May (Oral Presentation)

Hendricks Franssen, H.-J., W. Kurtz, **C. Montzka**, H. Zhou, L. Li, W. Kessomkiat and H. Vereecken (2011): Sequential data assimilation for improved identification of aquifer, soil and river bed properties. Tübingen, 19 April (Invited Presentation)

Montzka, C. (2011): Multiscale soil moisture observations and data assimilation. Center for Environmental Systems Research, Kassel, 18 April 2011 (invited Presentation)

Montzka, C., H.-J. Hendricks Franssen, M. Drusch, H. Moradkhani, L. Weihermüller, D. Fernandez Prieto, H. Bogen, J. Vanderborght and H. Vereecken (2011): A Synthetic 1D Data Assimilation Experiment for SMOS Radiative Transfer Parameter Estimation. Geophysical Research Abstracts 13, EGU2011-3092, EGU General Assembly 2011, Vienna, 3- 8 April 2011 (Oral Presentation)

Kessomkiat, W., H.-J. Hendricks Franssen, **C. Montzka**, A. Graf and H. Vereecken (2011): Assimilation of Eddy Covariance Data by the Particle Filter. REKLIM Workshop, Bremerhaven, Germany, 29 - 30 March 2011 (Poster)

Hendricks Franssen, H.-J., W. Kessomkiat, **C. Montzka**, H. Zhou, W. Kurtz, G. Bauser and H. Vereecken (2011): Issues concerning the assimilation of eddy covariance data in landsurface models. Leipzig, 24 February (Invited Presentation)

Montzka, C., H. Bogen, L. Weihermüller, F. Jonard, M. Dimitrov, C. Bouzinac, J. Kainulainen, J. E. Balling, E. Rouhe, J. Vanderborght and H. Vereecken (2010): Analyses of brightness temperatures on different spatial scales during the SMOS Validation Campaign in the Rur catchment, Germany. SMOS Validation and Retrieval Team Workshop, Frascati, Italy, 29 - 30 November 2010 (Oral Presentation)

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Montzka, C., M. Dimitrov, H. Moradkhani, L. Weihermüller, H.-J. Hendricks Franssen, J. A. Huisman, J. Rings, J. Vanderborght and H. Vereecken (2010): Estimating the influence of soil surface structure on evapotranspiration by soil moisture data assimilation, Conference on Earth Observation for Land-Atmosphere Interaction Science, Frascati, Italy, 3 - 5 November 2010 (Poster)

Montzka, C. and H. Vereecken (2010): Experimental measurements of soil water fluxes from local to catchment scale, Sino-German Workshop on Land Use and Water Resources Management under Fast Environmental Change, Nanchang, China, 21 - 26 October 2010 (invited talk)

Montzka, C., H.-J. Hendricks Franssen, H. Bogen, J. Vanderborght and H. Vereecken (2010): Die SMOS Validierungskampagne 2010 und Datenassimilierung zur Parameterschätzung für die Strahlungstransfermodellierung, 3. SMOS Nutzerworkshop Hamburg, 20 October 2010 (Oral Presentation)

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