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Funktion

Wissenschaftliche Mitarbeiterin

Abteilung

Modellierung Atmosphärischer Prozesse

Forschungsgebiete & Arbeitsschwerpunkte

- Atmosphärischer Staubkreislauf
- Identifizierung und Charakterisierung von Staubquellen anhand von Satellitenbeobachtungen und Modellsimulationen
- Meteorologische und geomorphologische Kontrollen bei der Staubemission

Aktuelle Projekte

- HiLDA - Iceland as a model for high-latitude dust sources - a combined experimental and modeling approach for characterization of dust emission and transport processes
- FINDUS - Parameterizing agricultural fires inducing mineral dust emission
- DUSTRISK - A risk index for health effects of mineral dust and associated microbes
- SOARiAL - Spread of Antibiotic Resistance in an Agrarian Landscape
- INFECTIONS'21
- AEROCLO-sA - AErosols, RadiatiOn, and CLOuds in southern Africa

Abgeschlossene Projekte

- Dust at the Interface - Modelling and Remote Sensing
- PalMod - Paleo Modelling: A national paleo climate modelling initiative
- SALTRACE
- ChArMEx
- DNICast
- RAIN4DUST
- Fennec
- Desert Storms
- SOPRAN
- SAMUM
- TRACES

Gremien/Mitgliedschaften

- Associate Editor, Aeolian Research
- Board member International Society for Aeolian Research (ISAR)
- Member of Steering Committee, AEROCLO-sA
- Member of Executive Committee, Leibniz-Forscherverbund INFECTIONS'21
- Member of Steering Committee, Leibniz-Forscherverbund INFECTIONS'21

Lebenslauf (CV):

Akademische Qualifikation

2015 | Privatdozent | Meteorologie
2015 | Habilitation | Meteorologie
2009 | Dr. rer. nat. | Meteorologie
2006 - 2009 | Doktorandin | Christian-Albrechts-Universität zu Kiel
2006 | Diplom | Meteorologie
2001 - 2006 | Studium der Meteorologie | Christian-Albrechts-Universität zu Kiel

Habilitation: Meteorological controls on the atmospheric dust cycle

Dissertation: Characterizing Saharan Dust using Remote Sensing and Regional Modeling

Erfahrung in der Wissenschaft

seit April 2013 | Wissenschaftliche Mitarbeiterin | Leibniz-Institut für Troposphärenforschung, Leipzig
2009 - 2013 | PostDoc | School of Earth and Environment, University of Leeds, Leeds, Großbritannien
2006 - 2009 | Doktorandin | Leibniz-Institut für Troposphärenforschung, Leipzig, und Leibniz-Institut für Meereswissenschaften, Kiel

Vorlesungen:

Wintersemester 2018/2019

Staub in der Atmosphäre

Wintersemester 2017/2018

Staub in der Atmosphäre

Wintersemester 2016/2017

Staub in der Atmosphäre

Publikationen:

2020

Faust, M., R. Wolke, S. Münch, R. Funk, and **K. Schepanski** (2020), A new Lagrangian in-time particle simulation module (ltpas v1) for

atmospheric particle dispersion, Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2020-352

Vandenbussche, S., S. Callewaert, **K. Schepanski**, and M. De Mazière (2020), North African mineral dust sources: new insights from a combined analysis based on 3D dust aerosols distributions, surface winds and ancillary soil parameters, Atmos. Chem. Phys., 20, 15127–15146, https://doi.org/10.5194/acp-20-15127-2020

Thiel, N. S. Münch, W. Behrens, V. Junker, M. Faust, O. Biniasch, T. Kabelitz, P. Siller, C. Boedeker, P. Schumann, U. Roesler, T. Amon, **K. Schepanski**, R. Funk, U. Nübel (2020), Airborne bacterial emission fluxes from manure-fertilized agricultural soil, Microbial Biotechnology, https://doi.org/10.1111/1751-7915.13632

Pfrommer, E., C. Dreier, G. Gabriel, T. Dallenga, R. Reimer, **K. Schepanski**, R. Scherließ, U. E. Schaible, and T. Gutsmann (2020), Enhanced tenacity of mycobacterial aerosols from necrotic neutrophils, Scientific Reports, 10, 9159, doi: https://doi.org/10.1038/s41598-020-65781-9

2019

Villanueva, D., and **K. Schepanski** (2019), Investigation of atmospheric conditions fostering the spreading of Legionnaires' disease in outbreaks related to cooling towers, Int. J. Biometeorol., https://doi.org/10.1007/s00484-019-01751-9

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Formenti, P., B. D'Anna, C. Flamant, M. Mallet, S.J. Piketh, **K. Schepanski**, F. Waquet, F. Auriol, G. Brogniez, F. Burnet, J. Chaboureau, A. Chauvigné, P. Chazette, C. Denjean, K. Desboeufs, J. Doussin, N. Elguindi, S. Feuerstein, M. Gaetani, C. Giorio, D. Klopper, M.D. Mallet, P. Nabat, A. Monod, F. Solmon, A. Namwoonde, C. Chikwililwa, R. Mushi, E.J. Welton, and B. Holben (2019): The Aerosols, Radiation and Clouds in southern Africa (AEROCLO-sA) field campaign in Namibia: overview, illustrative observations and way forward, *Bull. Amer. Meteor. Soc.*, 0, doi.org/10.1175/BAMS-D-17-0278.1

Feuerstein, S. and **K. Schepanski** (2019), Identification of Dust Sources in a Saharan Dust Hot-Spot and Their Implementation in a Dust-Emission Model, *Remote Sen.*, 11, 4, doi.org/10.3390/rs11010004

2018

Wagner, R., M. Jähn, and **K. Schepanski** (2018), Wildfires as a source of airborne mineral dust – revisiting a conceptual model using large-eddy simulation (LES), *Atmos. Chem. Phys*., 18, 11863-11884, doi.org/10.5194/acp-18-11863-2018

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Banks, J. R., **K. Schepanski**, B. Heinold, A. Hünerbein, and H. E. Brindley (2018), The influence of dust optical properties on the colour of simulated MSG-SEVIRI Desert Dust infrared imagery, Atmos. Chem. Phys., 18, 9681-9703, doi.org/10.5194/acp-18-9681-2018

Tegen, I., and **K. Schepanski** (2018), Climate Feedback on Aerosol Emission and Atmospheric Concentrations, *Current Climate Change Reports*, doi.org/10.1007/s40641-018-0086-1

2017

Schepanski, K., B. Heinold, and I. Tegen (2017), Harmattan, Saharan heat low and West African Monsoon circulation: Modulations on the Saharan dust outflow towards the north Atlantic, *Atmos. Chem. Phys*., 17, 10223-10243, doi.org/10.5194/acp-17-10223-2017

Weinzierl, B., A. Ansmann, J. Prospero, D. Althausen, N. Benker, F. Chouza, M. Dollner, D. Farrell, W. Fomba, V. Freudenthaler, J. Gasteiger, S. Groß, M. Haarig, B. Heinold, K. Kandler, T. Kristensen, O. Mayol-Bracero, T. Müller, O. Reitebuch, D. Sauer, A. Schäfler, **K. Schepanski**, A. Spanu, I. Tegen, C. Toledano, and A. Walser (2017), The Saharan Aerosol Long-range Transport and Aerosol-Cloud-Interaction Experiment (SALTRACE): overview and selected highlights, *Bull. Amer. Meteor. Soc*., 98(7), 1-25, doi.org/10.1175/BAMS-D-15-00142.1

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2016

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Granados-Muñoz, M. J., F. Navas-Guzmán, J. L. Guerrero-Rascado, J. A. Bravo-Aranda, I. Binietoglou, S. N. Pereira, S. Basart, J. M. Baldasano, L. Belegante, A. Chaikovsky, A. Comerón, G. D'Amico, O. Dubovik, L. Ilic, P. Kokkalis, C. Muñoz-Porcar, S. Nickovic, D. Nicolae, F. J. Olmo, A. Papayannis, G. Pappalardo, A. Rodríguez, **K. Schepanski,** M. Sicard, A. Vukovic, U. Wandinger, F. Dulac, and L. Alados-Arboledas (2016), Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during July 2012 ChArMEx/EMEP campaign, *Atmos. Chem. Phys*., 16, 7043-7066, doi.org/10.5194/acp-16-7043-2016

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2015

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2014

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Niedermeier, N., A. Held, T. Müller, B. Heinold, **K. Schepanski**, I. Tegen, K. Kandler, M. Ebert, S. Weinbruch, K. Read, J. Lee, K. W. Fomba, K. Müller, H. Herrmann, and A. Wiedensohler (2014), Mass deposition flux of Saharan mineral dust to the tropical northeast Atlantic Ocean: an intercomparison of methods, *Atmos. Chem. Phys.*, 14, 2245-2266, doi.org/10.5194/acp-14-2245-2014

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2012

Schepanski, K., T. J. Wright, and P. Knippertz (2012), Evidence for flash floods over deserts from loss of coherence in InSAR imagery, *J. Geophys. Res.*, 117, D20101, doi.org/10.1029/2012JD017580

Crouvi, O., **K. Schepanski**, R. Amit, A. Gillespie, and Y. Enzel (2012), Multiple dust sources in the Sahara Desert: The importance of sand dunes, *Geophys. Res. Lett.*, 39, L13401, doi.org/10.1029/2012GL052145

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2011

Schepanski, K., and P. Knippertz (2011), Soudano-Saharan Depressions and their importance for precipitation and dust: A new perspective on a classical synoptic concept, *Quart. J. Roy. Met. Soc.*, 137(659), 1431-1445, doi.org/10.1002/qj.850

Okin, G. S., J. E. Bullard, R. L. Reynolds, J.-A. C. Ballantine, **K. Schepanski**, M. C. Todd, J. Belnap, M. C. Baddock, T. E. Gill, and M. E. Miller (2011), Dust emissions: small-scale processes with global-scale consequences, *EOS, Transactions American Geophysical Union*, 92(29), 241-248, doi.org/10.1029/2011EO290001

Heinold, B., I. Tegen, **K. Schepanski**, M. Tesche, M. Esselborn, V. Freudenthaler, S. Gross, K. Kandler, P. Knippertz, D. Müller, A. Schladitz, C. Toledano, B. Weinzierl, A. Ansmann, D. Althausen, T. Müller, A. Petzold, and A. Wiedensohler (2011), Regional modelling of Saharan dust and land fire smoke: Part I: Model description and evaluation, *Tellus B*, 63, 430-447, doi.org/10.1111/j.1600-0889.2011.00570.x

Johnson, B. T., M. E. Brooks, D. Walters, S. Woodward, S. Christopher, and **K. Schepanski** (2011), Assessment of the Met Office dust forecast model using observations from the GERBILS campaign, *Quart. J. Roy. Met. Soc.*, 137(658), 1131-1148, doi.org/10.1002/qj.736

2010

Laurent, B., I. Tegen, B. Heinold, **K. Schepanski**, B. Weinzierl, and M. Esselborn (2010), A model study of Saharan dust emission and distribution during SAMUM-1 campaign, *J. Geophys. Res.*, 115, D21210, doi.org/10.1029/2009JD012995

2009

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2008

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2007

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