

List of Publications and Presentations, Dr. Benjamin Fersch

Karlsruhe Institute of Technology (KIT)
IMK-IFU, Garmisch-Partenkirchen
Regional Climate Systems
Germany

PEER REVIEWED JOURNALS

- 2016 **The ScaleX campaign: scale-crossing land-surface and boundary layer processes in the TERENO-preAlpine observatory** B. Wolf, C. Chwala, **B. Fersch**, J. Garvelmann, W. Junkermann, M. J. Zeeman, A. Angerer, B. Adler, C. Beck, C. Brosy, P. Brugger, S. Emeis, M. Dannenmann, F. De Roo, E. Diaz-Pines, E. Haas, M. Hagen, I. Hajnsek, J. Jacobeit, T. Jagdhuber, N. Kalthoff, R. Kiese, H. Kunstmann, O. Kosak, R. Krieg, C. Malchow, M. Mauder, R. Merz, C. Notarnicola, A. Philipp, W. Reif, S. Reineke, T. Rödiger, N. Ruehr, K. Schäfer, M. Schrön, A. Senatore, H. Shupe, I. Völksch, C. Wanninger, S. Zacharias, and H. P. Schmid. *Bull. Amer. Meteor. Soc.*, DOI 10.1175/BAMS-D-15-00277.1.
- Fully coupled atmospheric-hydrological modeling at regional and long-term scales: Development, application, and analysis of WRF-HMS** Sven Wagner, **Benjamin Fersch**, Fei Yuan, Zhongbo Yu, and Harald Kunstmann, 2016. *Water Resour. Res.*, 52, 3187–3211. DOI 10.1002/2015WR018185
- Role of runoff-infiltration partitioning and resolved overland flow on land-atmosphere feedbacks: A case-study with the WRF-Hydro coupled modeling system for West Africa** Joel Arnault, Sven Wagner, Thomas Rummmler, **Benjamin Fersch**, Jan Bliefernicht, Sabine Andresen, and Harald Kunstmann), 2016. *J. Hydrometeorol.*, 17, 1489–1516,. DOI 10.1175/JHM-D-15-0089.1
- 2015 **Water vapor mapping by fusing remote sensing data and atmospheric models** Fadwa Alshawaf, **Benjamin Fersch**, Stefan Hinz, Harald Kunstmann, Michael Mayer, and Franz J. Meyer), 2015. *Hydrol. Earth Syst. Sci.*, 19, 4747-4764, DOI 10.5194/hess-19-4747-2015
- 2013 **Atmospheric and terrestrial water budgets: sensitivity and performance of configurations and global driving data for long term continental scale WRF simulations.** **Benjamin Fersch**, and Harald Kunstmann), 2013. *Journal of Climate Dynamics*. 42(9-10), 2367-2396. DOI 10.1007/s00382-013-1915-5
- 2012 **Continental Scale Basin Water Storage Variation from Global and Dynamically Downscaled Atmospheric Water Budgets in Comparison with GRACE Derived Observations.** **Benjamin Fersch**, Harald Kunstmann, András Bárdossy, Balaji Devaraju, and Nico Sneeuw), 2012. *Journal of Hydrometeorology*. 13(5), 1589–1603. DOI 10.1175/JHM-D-11-0143.1

REFEREED CONFERENCE PAPERS

- 2016 **Methane distributions and transports in the nocturnal boundary layer at a rural station.** Klaus Schäfer, Matthias Zeeman, Caroline Brosy, Christoph Münkkel, **Benjamin Fersch**, Matthias Mauder, Stefan Emeis; Comeron, A. et al. (eds) : *Remote Sensing of Clouds and the Atmosphere XXI*, Proceedings of SPIE, 10001 (2016), 1000103-1 - 1000103-9. DOI 10.1117/12.2241110.
- 2013 **The impact of groundwater dynamics and soil-type for modeling coupled water exchange processes between land and atmosphere.** **Benjamin Fersch**, Sven Wagner, Thomas Rummmler, David Gochis, Harald Kunstmann, *In: Climate and Land Surface Changes in Hydrology*, 2013. IAHS publication 359, pp. 140-145.
- Hydrometeorological modelling for Poyang Lake region, China.** Sven Wagner, **Benjamin Fersch**, Harald Kunstmann, Fei Yuan, Chuanguo Yang, Zhongbo Yu, *In: Climate and Land Surface Changes in Hydrology*, 2013. IAHS publication 359, pp. 152-157.
- 2012 **Analysis of atmospheric signals in spaceborne InSAR - toward water vapor mapping based on multiple sources.** Fadwa Alshawaf, **Benjamin Fersch**, Stefan Hinz, Harald Kunstmann, Michael Mayer, Antje Thiele, Malte Westerhaus, and Franz Meyer, *Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International.*, 2012. pp. 1960 – 1963. DOI 10.1109/IGARSS.2012.6351118

2009 **Large-scale water balance estimations through regional atmospheric moisture flux modeling and comparison to GRACE signals.** Benjamin Fersch, Harald Kunstmann, Nico Sneeuw, Balaji Devaraju, *In: New Approaches to Hydrological Prediction in Data-Sparse Regions.*, 2009. IAHS publication 333.

Development of a coupled land-surface and hydrology model system for mesoscale hydrometeorological simulations. Fei Yuan, Harald Kunstmann, Chuanguo Yang, Zhongbo Yu, L. Ren, Benjamin Fersch, Z. Xie, *In: New Approaches to Hydrological Prediction in Data Sparse Regions*, 2009. IAHS publication 333.

SELECTED PRESENTATIONS

2016 **From the groundwater to the boundary layer: a fully-coupled hydrometeorologic modeling approach for a catchment of the Alpine foothills.** Benjamin Fersch, Harald Kunstmann, and David Gochis, 2016. EGU2016-7856

Modeling the atmospheric and terrestrial water and energy cycles in the ScaleX experiment through a fully-coupled atmosphere-hydrology model. Alfonso Senatore, Fersch Benjamin, Rummeler Thomas, Brosy Caroline, Chwala Christian, Wolfgang Junkermann, Völksch Ingo, and Kunstmann Harald, 2016. EGU2016-18333

Role of runoff-infiltration partitioning and resolved overland flow on land-atmosphere feedbacks: A case-study with the WRF-Hydro coupled modeling system for West Africa Joel Arnault, Seven Wagner, Thomas Rummeler, Benjamin Fersch, Jan Bliefernicht, Sabine Andresen, and Harald Kunstmann, 2016. EGU2016-9241

WRF-HMS, a fully-coupled regional atmospheric-hydrological modeling system for long-term scale applications Sven Wagner, Benjamin Fersch, Fei Yuan, Zhongbo Yu, and Harald Kunstmann, 2016. EGU2016-12321

Soil Moisture Estimation Across Scales with Mobile Sensors for Cosmic-Ray Neutrons from the Ground and Air. Martin Schrön, Mandy Köhler, Lutz Bannehr, Markus Köhli, Benjamin Fersch, Corinna Rebmann, Juliane Mai, Matthias Cuntz, Simon Kögler, Ingmar Schröter, Ute Wollschläger, Sascha Oswald, Peter Dietrich, and Steffen Zacharias, 2016. EGU2016-16720

Abflussbildung, Schneedynamik und photosynthetische Aktivität in subalpinen Höhenlagen: Instrumentierung und Analyse für den Dreisäulerbach in den Ammergauer Alpen. Wolfgang Rieger, Matthias Kopp, Jakob Garvelmann, Birgitta Putzenlechner, Benjamin Fersch, Markus Disse, Harald Kunstmann, Ralf Ludwig, 2016. Tag der Hydrologie, 16.-18.03.2016, Hochschule Koblenz

2015 **The ScaleX experiment in the TERENO-prealpine observatory** Benjamin Wolf, Christian Chwala, Frederik De Roo, Benjamin Fersch, Jakob Garvelmann, Edwin Haas, Wolfgang Junkermann, Nadine Ruehr, Klaus Schäfer, Hannes Vogelmann, Matthias Zeeman, Almut Arneith, Klaus Butterbach-Bahl, Michael Dannenmann, Stefan Emeis, Ralf Kiese, Harald Kunstmann, Matthias Mauder, Peter Suppan, Ralf Sussmann, Hans-Peter Schmid, International Conference on Alpine Meteorology, 31 Aug - 4 Sep 2015, Innsbruck, Austria.

2014 **The impact of groundwater-soil moisture coupling on WRF-Hydro modeled water budgets and surface exchange for the Ammer catchment in Southern Germany** Benjamin Fersch, Thomas Rummeler, David Gochis, Sven Wagner, Harald Kunstmann, Oct. 2014. REKLIM International Conference, Berlin, Germany.

Regional water balance analysis with an atmosphere to groundwater coupled hydrometeorological model for the pre-alpine TERENO region Benjamin Fersch, Thomas Rummeler, David Gochis, Sven Wagner, Harald Kunstmann, Sept. 2014. TERENO International Conference, Bonn, Germany

Saturated zone interaction within WRF-Hydro: from the bucket approach to a physically-based distributed groundwater representation Benjamin Fersch, Sven Wagner, Thomas Rummeler, David Gochis, Harald Kunstmann, June 2014. 1st European Fully Coupled Atmospheric-Hydrological Modeling and WRF-Hydro Users Workshop, University of Calabria, Cosenza, Italy

- 2013 **The impact of groundwater dynamics and soil-type for modeling coupled water exchange processes between land and atmosphere Benjamin Fersch**, Sven Wagner, Thomas Rummmler, David Gochis, Harald Kunstmann, 2013. *H01S4 - Climate and land surface changes in hydrology*, IAHS Assembly, Gothenburg, Sweden
- 2012 **Coupling approaches for groundwater-soil-atmosphere interaction in a pre-Alpine Environment Benjamin Fersch**, Sven Wagner, Thomas Rummmler, David Gochis, Harald Kunstmann, Poster H31D-1153, Dec. 2012. AGU Fall Meeting, San Francisco, U.S.
- Coupled hydro-meteorological simulations for the Poyang lake region, China** Sven Wagner, Benjamin Fersch, Harald Kunstmann, Chuanguo Yang, Fei Yuan, Zhongbo Yu, 2012. EGU2012-8847
- 2011 **Bestimmung von großskaligen terrestrischen Wasserspeichervariationen aus der atmosphärischen Feuchtebilanz und Vergleich mit Beobachtungen der GRACE Satellitenmission Benjamin Fersch**, Geographisches Kolloquium, Universität Augsburg, 02.05.2011.
- Model systems for closed regional atmospheric and terrestrial water balance analyses Benjamin Fersch**, Thomas Rummmler, David Gochis, Harald Kunstmann, REKLIM Workshop, Bremerhaven, Germany, 29-30 March 2011.
- 2010 **Water balance estimation for large scale basins from regional atmospheric moisture budgets and comparison to GRACE Benjamin Fersch**, Harald Kunstmann, volume 12, 2010. EGU2010-8981
- 2009 **Continental scale atmospheric and terrestrial water budget modeling and comparison to GRACE Benjamin Fersch**, Harald Kunstmann, Nico Sneeuw, Balaji Devaraju, 2009. EGU2009-10219
- 2008 **Regional Modeling of Atmospheric Water Budgets and Comparison to Hydrology and GRACE Benjamin Fersch**, Harald Kunstmann, Johannes Riegger, Henry Kindt, András Bárdossy, Nico Sneeuw, Balaji Devaraju, 2008. DFG-Schwerpunktprogramm 1257, Mass Transport and Mass Distribution in the System Earth, 2. Kolloquium, München
- Regional atmospheric mass and moisture flux modeling and comparison to GRACE signals Benjamin Fersch**, Harald Kunstmann, András Bárdossy, 2008. EGU2008-A-06976
- Implementation of a routing scheme for the regional atmospheric model WRF. Benjamin Fersch**, 12. Nov. 2008. Workshop on Large-Scale Hydrological Modeling. University of Kiel, Germany.
- 2007 **Interaction between riparian phreatophytes, alluvial aquifers and channel processes. Christoph Külls, Benjamin Fersch**, 2007. EGU2007-A-10850