

# Curriculum Vitae

## Dr. Jan-Peter Schulz

German Meteorological Service, Offenbach am Main, Germany  
Euro-Mediterranean Center on Climate Change, Caserta, Italy

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### Education and Work:

- 15 Jun. 1987** High School Degree (Abitur), Kiel, Germany.  
from **Oct. 1987** on Diploma Course in Physics at the  
Christian-Albrechts-University in Kiel.
- 6 Apr. 1993** M.Sc. (Diploma), University of Kiel,  
Grade: „with distinction“.  
Title of thesis: „Measurement of high energetic  
particles in the middle heliosphere onboard the  
spaceprobe ULYSSES“.  
Advisor: Prof. Dr. G. Wibberenz.
- 1 May 1993 – 30 Jun. 1993** Research position at the Institute for Pure and  
Applied Nuclear Physics, Department for  
Extraterrestrial Physics, University of Kiel.
- 1 Jul. 1993 – 30 Jun. 1998** Ph.D. Program at the University of Hamburg /  
Research position at the Max-Planck-Institute for  
Meteorology, Hamburg, Germany.  
Advisors: Dr. L. Dümenil, Prof. Dr. L. Bengtsson.
- 29 Jun. 1998** Ph.D., University of Hamburg,  
Grade: „very good“.  
Title of Ph.D. thesis: “On the role of the land  
surface representation and the numerical coupling  
to the atmosphere for the simulated climate of the  
global ECHAM4 model”.
- 1 Jul. 1998 – 31 Dec. 1998** Research position at the Max-Planck-Institute for  
Meteorology (MPI-M), Hamburg.

My main focus is the improvement of the land surface processes in an atmospheric model. During my Ph.D. at the Max-Planck-Institute for Meteorology I implemented a new land surface scheme (SECHIBA, which later became ORCHIDEE, from LMD in Paris) and a new fully-implicit coupling with the atmosphere in the global Hamburg climate model ECHAM. In contrast to the former semi-implicit coupling, the new scheme is numerically stable and it conserves the energy at the land surface.

This coupling scheme was also implemented in the global coupled atmosphere-ocean Earth System Model MPI-ESM, there it was used for IPCC and CMIP experiments. More recently, it was implemented in ICON-ESM, and finally last year, together with the ECHAM land surface scheme JSBACH under my supervision at the German Meteorological Service, also in ICON-Seamless, the new common model for weather and climate.

**1 Jan. 1999 – 31 Jul. 2001**

Staff member at the Danish Meteorological Service, Copenhagen. Task: Model development HIRHAM.

At the Danish Meteorological Service (DMI), I transferred this coupling scheme to the regional climate model HIRHAM and focussed further on the land surface processes. At DMI, I was working in regional climate modelling, for instance in the EU project MERCURE, and I joined the European regional climate modelling community.

from **1 Aug. 2001** on

Staff member at the German Meteorological Service, Offenbach am Main.  
Task: Model development COSMO and ICON model, land surface processes.

I work at the German Meteorological Service (DWD) in the Department for Meteorological Analysis and Modelling since 2001. In the beginning of this period my task was mainly the development and improvement of the meso-scale COSMO model which was operationally used for numerical weather prediction until recently. I was the responsible for COSMO-EU (DWD's prediction system for Europe) from 2004 until its decommissioning in 2016.

At DWD, I deeply revised several processes in the land surface scheme TERRA and introduced new formulations for, for instance, the bare soil evaporation and the surface temperature. For the latter, I adapted and implemented the IFS skin temperature. I introduced these improvements both in COSMO and ICON, the operational forecasts became substantially better.

Besides this, I implemented other physical parameterisations in the COSMO model, for instance, a sub-grid scale orography scheme (this also in ICON) or a sea ice scheme. Both improved the model predictions considerably.

**1 Aug. 2012 – 30 Jun. 2014**

Visiting Senior Scientist at the University of Frankfurt with Prof. Dr. B. Ahrens.

Task: Model development COSMO-CLM.

During an about two-year period as visiting senior scientist at the University of Frankfurt I focussed on some specific model developments of COSMO-CLM. For instance, I worked in dynamic vegetation modelling and developed a phenology module for TERRA.

from **1 Aug. 2023** on

Senior Scientist and Consultant at the Euro-Mediterranean Center on Climate Change, Caserta, Italy, in addition to my position at DWD.

Task: Coordination of ICON development.

At the Euro-Mediterranean Center on Climate Change (CMCC), in the division of Regional Models and Geo-Hydrological Impacts, I focus on further developing the ICON model, in particular with respect to urban processes, and setting up the model for high-resolution convection-permitting applications for weather and climate over an Italian domain. I advise, and supervise, colleagues at CMCC about ICON, how to set up the model, and how to analyse the simulation results, with particular focus on the general context of land surface, and especially urban, processes.

## Further activities:

Currently, I am leading the three-year COSMO Priority Project CITTA' on urban modelling with ICON. As part of this, I implemented the urban canopy land surface scheme TERRA\_URB in ICON in gitlab. Together with the project team we make testing and bug fixing, this allows for a very efficient provision of the new model to the whole team. Furthermore, we develop new urban canopy parameters for TERRA\_URB in ICON and ICON-CLM.

In the CLM Community I lead the Working Group SOILVEG on land surface processes, including the development of TERRA. I participate in the project COPAT2 which carries out a coordinated parameter testing and provides an optimal set of namelist parameters for COSMO(-CLM)6.0 and ICON-CLM.

I am the focal point of the COSMO Consortium and the ICON Community to the WMO WWRP Research Demonstration Project Paris 2024 Olympics. In this framework we participate in the model intercomparison with internationally leading atmospheric models and their urban schemes, and we get access to an excellent network of observational data in the greater metropolitan area of Paris.

Besides this, I am member of the DWD/MPI-M ICON-Seamless Expert Group on Land-Atmosphere Coupling, I supervise the implementation of JSBACH/VDIFF from ICON/ECHAM (MPI-M) into ICON-NWP (DWD) in order to create the new ICON-Seamless for NWP and ESM.

Convener and co-convener of two sessions at the Annual Meetings of the European Meteorological Society:

- Cities and urban areas in the earth-atmosphere system
- Exploring the interfaces between meteorology and hydrology

Guest editor for a Special Issue in Atmosphere on "Land Surface and its Interaction with the Atmosphere".

Reviewer for Nature, Quarterly Journal of the RMS, Boundary-Layer Meteorology, Atmosphere.

## **Publications and Presentations**

### **Peer-reviewed Articles:**

Apreda, C., J.-P. Schulz, A. Reder and P. Mercogliano, 2023: Survey of land cover datasets for updating the imperviousness field in urban parameterisation scheme TERRA\_URB for climate and weather applications, *Urban Climate*, **49**, 101535.

Garbero, V., M. Milelli, E. Bucchignani, P. Mercogliano, M. Varentsov, I. Rozinkina, G. Rivin, D. Blinov, H. Wouters, J.-P. Schulz, U. Schättler, F. Bassani, M. Demuzere and F. Repola, 2021: Evaluating the urban canopy scheme TERRA\_URB in the COSMO model for selected European cities, *Atmosphere*, **12**, 237.

Hartmann, E., J.-P. Schulz, R. Seibert, M. Schmidt, M. Zhang, J. Luterbacher and M. H. Tölle, 2020: Impact of environmental conditions on grass phenology in the regional climate model COSMO-CLM, *Atmosphere*, **11**, 1364.

Schulz, J.-P. and G. Vogel, 2020: Improving the processes in the land surface scheme TERRA: Bare soil evaporation and skin temperature, *Atmosphere*, **11**, 513.

Shrestha, P., W. Kurtz, G. Vogel, J.-P. Schulz, M. Sulis, H.-J. Hendricks Franssen, S. Kollet and C. Simmer, 2018: Connection between root zone soil moisture and surface energy flux partitioning using modeling, observations, and data assimilation for a temperate grassland site in Germany, *J. Geophys. Res.: Biogeosciences*, **123**, 2839–2862.

De Vrese, P., J.-P. Schulz and S. Hagemann, 2016: On the representation of heterogeneity in land-surface–atmosphere coupling, *Boundary-Layer Meteor.*, **160**, 157–183.

Schulz, J.-P., G. Vogel, C. Becker, S. Kothe, U. Rummel and B. Ahrens, 2016: Evaluation of the ground heat flux simulated by a multi-layer land surface scheme using high-quality observations at grass land and bare soil, *Meteor. Z.*, **25**, 607–620.

Mironov, D., B. Ritter, J.-P. Schulz, M. Buchhold, M. Lange and E. Machulskaya, 2012: Parameterisation of sea and lake ice in numerical weather prediction models of the German Weather Service, *Tellus A*, **64**, 17330.

Savvidou, K., S. C. Michaelides, A. Orphanou, P. Constantinides, J.-P. Schulz, U. Voigt and M. Savvides, 2007: Verification of precipitation forecasts by the DWD limited area model LME over Cyprus, *Adv. Geosci.*, **10**, 133–138.

Orphanou, A., S. Michaelides, K. Savvidou, P. Constantinides, J.-P. Schulz and U. Voigt, 2006: Preliminary verification results of the DWD limited area model LME and evaluation of its storm forecasting skill over the area of Cyprus, *Adv. Geosci.*, **7**, 169–174.

Knorr, W. and J.-P. Schulz, 2001: Using satellite data assimilation to infer global soil moisture status and vegetation feedback to climate; In: Beniston, M. and M. M. Verstraete (Ed.), *Remote Sensing and Climate Modeling: Synergies and Limitations*, Adv. in Global Change Res. series, **7**, Kluwer Academic Publishers, Dordrecht and Boston, ISBN 0-7923-6801-0, 273–306.

Schulz, J.-P., L. Dümenil and J. Polcher, 2001: On the land surface-atmosphere coupling and its impact in a single-column atmospheric model, *J. Appl. Meteor.*, **40**, 642–663.

Polcher, J., B. McAvaney, P. Viterbo, M.-A. Gaertner, A. Hahmann, J.-F. Mahfouf, J. Noilhan, T. Phillips, A. Pitman, C. A. Schlosser, J.-P. Schulz, B. Timbal, D. L. Versegny and Y. Xue, 1998: A proposal for a general interface between land-surface schemes and general circulation models, *Global Planet. Change*, **19**, 261–276.

Qu, W., A. Henderson-Sellers, A. J. Pitman, T. H. Chen, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, R. E. Dickinson, L. Dümenil, M. Ek, N. Gedney, Y. M. Gusev, J. Kim, R. Koster, E. A. Kowalczyk, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O. N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C. A. Schlosser, J.-P. Schulz, A. B. Shmakin, D. L. Versegny, P. Wetzel, E. F. Wood, Z.-L. Yang and Q. Zeng, 1998: Sensitivity of latent heat flux from PILPS land-surface schemes to perturbations of surface air temperature, *J. Atmos. Sci.*, **55**, 1909–1927.

Schulz, J.-P., L. Dümenil, J. Polcher, C. A. Schlosser and Y. Xue, 1998: Land surface energy and moisture fluxes: Comparing three models, *J. Appl. Meteor.*, **37**, 288–307.

Chen, T. H., A. Henderson-Sellers, P. C. D. Milly, A. J. Pitman, A. C. M. Beljaars, J. Polcher, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, C. E. Desborough, R. E. Dickinson, L. Dümenil, M. Ek, J. R. Garratt, N. Gedney, Y. M. Gusev, J. Kim, R. Koster, E. A. Kowalczyk, K. Laval, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O. N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C. A. Schlosser, J.-P. Schulz, Y. Shao, A. B. Shmakin, D. L. Verseghy, P. Wetzels, E. F. Wood, Y. Xue, Z.-L. Yang and Q. Zeng, 1997: Cabauw experimental results from the Project for Intercomparison of Land-surface Parameterization Schemes, *J. Climate*, **10**, 1194–1215.

Wild, M., L. Dümenil and J.-P. Schulz, 1996: Regional climate simulation with a high resolution GCM: Surface hydrology, *Climate Dyn.*, **12**, 755–774.

### **Other Publications:**

Campanale, A., M. Adinolfi, M. Raffa, P. Mercogliano and J.-P. Schulz, 2023: Implementation of TERRA\_URB in ICON: First results over Italy, *CLM Newsletter*, **21**, 8–11. (Available at <https://www.clm-community.eu/>)

Bucchignani, E., P. Mercogliano, V. Garbero, M. Milelli, M. Varentsov, I. Rozinkina, G. Rivin, D. Blinov, A. Kirsanov, H. Wouters, J.-P. Schulz and U. Schättler, 2019: Analysis and evaluation of TERRA\_URB scheme: PT AEVUS Final Report, *COSMO Technical Report*, **40**, 60 pp. (Available at <http://www.cosmo-model.org/>)

Wouters, H., M. Varentsov, U. Blahak, J.-P. Schulz, U. Schättler, E. Bucchignani and M. Demuzere, 2017: User guide for TERRA\_URB v2.2: The urban-canopy land-surface scheme of the COSMO model, *Ghent University*, 12 pp. (Available at <http://www.cosmo-model.org/>)

Schulz, J.-P., G. Vogel and B. Ahrens, 2015: A new leaf phenology for the land surface scheme TERRA of the COSMO atmospheric model, *COSMO Newsletter*, **15**, 21–29. (Available at <http://www.cosmo-model.org/>)

Vogel, G., P. Shrestha, J.-P. Schulz, C. Becker and U. Rummel, 2015: Modelluntersuchungen zum Einfluss der solaren Abschattung auf die Erdbodentemperaturen in Falkenberg, *Deutscher Wetterdienst, MOL-RAO Aktuell 3/2015*, Lindenberg, 2 pp. (Available at <https://www.dwd.de/>)

Schulz, J.-P. and U. Schättler, 2014: Kurze Beschreibung des Lokal-Modells Europa COSMO-EU (LME) und seiner Datenbanken auf dem Datenserver des DWD, *Deutscher Wetterdienst*, Offenbach, 81 pp. (Available at <https://www.dwd.de/>)

Doms, G., J. Förstner, E. Heise, H.-J. Herzog, D. Mironov, M. Raschendorfer, T. Reinhardt, B. Ritter, R. Schrodin, J.-P. Schulz and G. Vogel, 2011: A description of the nonhydrostatic regional COSMO model. Part II: Physical parameterization, *Deutscher Wetterdienst*, Offenbach, 154 pp. (Available at <http://www.cosmo-model.org/>)

Schulz, J.-P., 2011: Introducing a sea ice scheme in the COSMO model, *COSMO Newsletter*, **11**, 32–40. (Available at <http://www.cosmo-model.org/>)

Orphanou, A., K. Savvidou, S. Michaelides, K. Nicolaidis, P. Constantinides and J.-P. Schulz, 2008: Comparative evaluation of the forecasting skills of the global and the limited

area model of DWD over Cyprus, *Proceedings of the 9<sup>th</sup> Panhellenic (International) Conference of Meteorology, Climatology and Atmospheric Physics*, 28–31 May 2008, Thessaloniki.

Schulz, J.-P., 2008: Introducing sub-grid scale orographic effects in the COSMO model, *COSMO Newsletter*, **9**, 29–36. (Available at <http://www.cosmo-model.org/>)

Schulz, J.-P., 2008: Revision of the turbulent gust diagnostics in the COSMO model, *COSMO Newsletter*, **8**, 17–22. (Available at <http://www.cosmo-model.org/>)

Savvidou, K., S. Michaelides, A. Orphanou, P. Constantinides, J.-P. Schulz and U. Voigt, 2006: Evaluation and verification of the Deutscher Wetterdienst limited area model over the area of Cyprus, *Proceedings of the 8<sup>th</sup> Panhellenic (International) Conference of Meteorology, Climatology and Atmospheric Physics*, 24–26 May 2006, Athen, Volume C, 302–310.

Schulz, J.-P., 2006: The new Lokal-Modell LME of the German Weather Service, *COSMO Newsletter*, **6**, 210–212. (Available at <http://www.cosmo-model.org/>)

Schulz, J.-P., 2005: Introducing the Lokal-Modell LME at the German Weather Service, *COSMO Newsletter*, **5**, 158–159. (Available at <http://www.cosmo-model.org/>)

Baldauf, M. and J.-P. Schulz, 2004: Prognostic precipitation in the Lokal-Modell (LM) of DWD, *COSMO Newsletter*, **4**, 177–180. (Available at <http://www.cosmo-model.org/>)

Schulz, J.-P. and E. Heise, 2003: A new scheme for diagnosing near-surface convective gusts, *COSMO Newsletter*, **3**, 221–225. (Available at <http://www.cosmo-model.org/>)

Christensen, J. H., O. B. Christensen and J.-P. Schulz, 2001: Contribution from the Danish Meteorological Institute to the MERCURE final report, 58 pp.; In: R. Jones (Ed.), *Final report of the EU project MERCURE*, UK Meteorological Office, Bracknell.

Christensen, J. H., O. B. Christensen, J.-P. Schulz, S. Hagemann and M. Botzet, 2001: High resolution physiographic data set for HIRHAM4: An application to a 50 km horizontal resolution domain covering Europe, *Danish Meteorological Institute*, Tech. Rep. 01-15, Copenhagen, 21 pp.

Kaas, E., K. M. Hansen, W. May, H. Voldborg, M. Kmit, M. Stendel, J.-P. Schulz, O. B. Christensen, J. H. Christensen, S. Kilund, A. Guldborg and U. Andersen, 2000: An interactive system for animating the greenhouse induced change in different weather parameters: “The Climate of the Future”, Permanent exhibition at the Experimentarium, Copenhagen. (Information available at <http://web.dmi.dk/pub/STOWASUS-2100/Experimentarium/>)

Christensen, J. H., O. B. Christensen and J.-P. Schulz, 1999: Contribution of the Danish Meteorological Institute to MERCURE, 11 pp.; In: R. Jones (Ed.), *Second year report of the EU project MERCURE*, UK Meteorological Office, Bracknell.

Schulz, J.-P., L. Dümenil and J. Polcher, 1999: The impact of two different land-surface coupling techniques in a single column version of the ECHAM4 atmospheric model, *Max-Planck-Institut für Meteorologie*, Rep. 297, Hamburg, 32 pp.

Schulz, J.-P., L. Dümenil and J. Polcher, 1999: Impact of different numerical coupling techniques between the surface and the atmosphere in a GCM; In: H. Ritchie (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*, Rep. 28, WMO/TD 942, WMO, Geneva.

Schulz, J.-P., L. Dümenil and J. Polcher, 1998: On the Asian monsoon in an ECHAM4 GCM simulation; In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*, Rep. 27, WMO/TD 865, WMO, Geneva.

Roesch, A., J.-P. Schulz and M. Wild, 1997: Comparison and sensitivity studies of the land-surface schemes in the ECHAM general circulation model and the Europa-Modell, *Max-Planck-Institut für Meteorologie*, Rep. 244, Hamburg, 117 pp.

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Two land-surface schemes implemented in the ECHAM4 GCM, Internet: <http://www-pcmdi.llnl.gov/pilps3/mpi/>

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Two land surface schemes implemented in the same GCM; In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*, Rep. 25, WMO/TD 792, WMO, Geneva.

Schulz, J.-P., L. Dümenil, J. Polcher, C. A. Schlosser and Y. Xue, 1996: Land surface energy and moisture fluxes: Comparing three models, *Max-Planck-Institut für Meteorologie*, Rep. 221, Hamburg, 32 pp.

Schulz, J.-P. and L. Dümenil, 1996: Validation and sensitivity of the parameterization of land surface processes in the ECHAM atmospheric general circulation model; In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*, Rep. 23, WMO/TD 734, WMO, Geneva.

Wild, M., L. Dümenil and J.-P. Schulz, 1995: High resolution GCM simulations over Europe: Surface processes, *Max-Planck-Institut für Meteorologie*, Rep. 176, Hamburg, 38 pp.

### **Theses:**

Schulz, J.-P., 1998: On the role of the land surface representation and the numerical coupling to the atmosphere for the simulated climate of the global ECHAM4 model, Ph.D. thesis, *Max-Planck-Institut für Meteorologie*, Examensarbeit 57, Hamburg, 139 pp.

Schulz, J.-P., 1993: Messung energiereicher Teilchen in der mittleren Heliosphäre an Bord der Raumsonde ULYSSES, M.Sc. thesis, *Institut für Reine und Angewandte Kernphysik, Universität Kiel*, 138 pp.

### **Presentations:**

Schulz, J.-P. and the PP CITTA' team, 2023: A new urban parameterisation for the ICON atmospheric model, *45<sup>th</sup> EWGLAM and 30<sup>th</sup> SRNWP Meeting*, 25–28 September 2023, Reykjavik.

Schulz, J.-P. and J.-M. Bettems, 2023: Surface activities in the COSMO Consortium, *45<sup>th</sup> EWGLAM and 30<sup>th</sup> SRNWP Meeting*, 25–28 September 2023, Reykjavik.

Campanale, A., M. Adinolfi, M. Raffa, P. Mercogliano and J.-P. Schulz, 2023: A new urban parameterization for the ICON atmospheric model: First results over Italy, *CLM Assembly*, 18–22 September 2023, Leuven.

Schulz, J.-P. and the PP CITTA' team, 2023: A new urban parameterisation for the ICON atmospheric model, *COSMO General Meeting*, 11–15 September 2023, Gdansk.

Campanale, A., M. Adinolfi, M. Raffa, P. Mercogliano and J.-P. Schulz, 2023: A new urban parameterization for the ICON atmospheric model: First results over Italy, *EMS Annual Meeting*, 3–8 September 2023, Bratislava.

Masson, V., E. De Coning, J. Amorim, C. Augros, G. Balsamo, A. Carvalho, A. Christen, J. Demuth, V. Dupuis, A. Forster, C. Franklin, B. Golding, S. Grimmond, M. Haefelin, K. Hanley, T. Kiszler, S. Kotthaus, R. Kumar, V. Kumar, H. Lean, A. Lemonsu, S. Leroyer, M. Madelin, T. Montmerle, W. Morrison, A. Perrels, J. Price, L. Rodriguez, O. Sanchez, K. Sartelet, A. Saya, J.-P. Schulz, G.-J. Steeneveld, B. Sützl, S. Swerdlin, N. Theeuwes, J. Wurtz, 2023: Overview of the Paris 2024 Olympics WMO project and PANAME experiment synergies to improve weather forecasting in urban areas at neighborhood scale, *11<sup>th</sup> International Conference on Urban Climate (ICUC11)*, 28 August – 1 September 2023, Sydney.

Campanale, A., M. Adinolfi, M. Raffa, P. Mercogliano and J.-P. Schulz, 2023: Implementation of the urban canopy land surface scheme TERRA\_URB in ICON: Preliminary results over Italy, *9<sup>th</sup> International Conference on Meteorology and Climatology of the Mediterranean (MetMed)*, 22–24 May 2023, Genoa.

Schulz, J.-P. and the PP CITTA' team, 2023: A new urban parameterisation for the ICON atmospheric model, *WMO WWRP Research Demonstration Project Paris 2024 Olympics HR Models Meeting*, 4 April 2023, Video Conference.

Schulz, J.-P. and the PP CITTA' team, 2023: A new urban parameterisation for the ICON atmospheric model, *ICCARUS*, 6–9 March 2023, Offenbach.

Kiszler, T., L. Bruder, J.-P. Schulz, U. Löhnert and V. Schemann, 2022: ICON-LEM simulations for Paris, *WMO WWRP Research Demonstration Project Paris 2024 Olympics General Assembly*, 28–30 November 2022, Paris.

Schulz, J.-P. and the PP CITTA' team, 2022: A new urban parameterisation for the ICON atmospheric model, *44<sup>th</sup> EWGLAM and 29<sup>th</sup> SRNWP Meeting*, 26–29 September 2022, Brussels.

Campanale, A., M. Adinolfi, M. Raffa, P. Mercogliano and J.-P. Schulz, 2022: Implementation of the land surface and turbulence schemes of TERRA\_URB in ICON: Preliminary results over Italy, *CLM Assembly*, 19–23 September 2022, Video Conference.

Schulz, J.-P. and the PP CITTA' team, 2022: A new urban parameterisation for the ICON atmospheric model, *COSMO General Meeting*, 12–16 September 2022, Athens.

Apreda, C., J.-P. Schulz, A. Reder and P. Mercogliano, 2022: Updating the impervious surface area of the urban canopy scheme TERRA\_URB: Survey of the existing land cover datasets, *COSMO General Meeting*, 12–16 September 2022, Athens.



Schulz, J.-P. and the PP CITTA' team, 2022: A new urban parameterisation for the ICON atmospheric model, *EMS Annual Meeting*, 4–9 September 2022, Bonn.

Früh, B., R. Potthast, P. Korn, W. Müller, S. Brienen, K. Fröhlich, J. Helmert, M. Köhler, S. Lorenz, T. V. Pham, H. Pohlmann, L. Schlemmer, R. Schnur, J.-P. Schulz, C. Sgoff, C. Steger, H. Vogel, B. Vogel, R. Wirth, G. Zängl, 2022: ICON-Seamless, development of a novel Earth System Model based on ICON, *EMS Annual Meeting*, 4–9 September 2022, Bonn.

Schulz, J.-P. and the PP CITTA' team, 2022: A new urban parameterisation for the ICON atmospheric model, *ICON All-staff Meeting*, 20–22 June 2022, Heusenstamm.

Früh, B., R. Potthast, P. Korn, W. Müller, S. Brienen, K. Fröhlich, J. Helmert, M. Köhler, S. Lorenz, T. V. Pham, H. Pohlmann, L. Schlemmer, R. Schnur, J.-P. Schulz, C. Sgoff, C. Steger, B. Vogel, R. Wirth, G. Zängl, 2022: ICON for climate simulations, *DACH Conference*, 21–25 March 2022, Leipzig (presented by K. Fröhlich).

Schulz, J.-P. and the PP CITTA' team, 2021: Introduction to the new PP CITTA', *COSMO General Meeting*, 6–17 September 2021, Video Conference.

Schulz, J.-P. and the PP CITTA' team, 2020: Introduction to the new PP CITTA', *COSMO General Meeting*, 1–11 September 2020, Video Conference.

Schulz, J.-P. and G. Vogel, 2019: Improved processes in the land surface model TERRA: Bare soil evaporation and skin temperature, *41<sup>st</sup> EWGLAM and 26<sup>th</sup> SRNWP Meeting*, 30 September – 3 October 2019, Sofia.

Schulz, J.-P. and G. Vogel, 2019: PT AEVUS@DWD, *COSMO General Meeting*, 9–12 September 2019, Rome.

Schulz, J.-P. and G. Vogel, 2019: Improved processes in the land surface model TERRA: Bare soil evaporation and skin temperature, *COSMO General Meeting*, 9–12 September 2019, Rome.

Schulz, J.-P. and G. Vogel, 2018: Evaluation of the global radiation simulated by the operational ICON model over Central Europe, *COSMO General Meeting*, 3–6 September 2018, Saint Petersburg.

Schulz, J.-P. and G. Vogel, 2017: An improved representation of the land surface temperature including the effects of vegetation in the ICON model, *COSMO General Meeting*, 11–14 September 2017, Jerusalem.

Sgoff, C., A. Schomburg, J. Schmidli and J.-P. Schulz, 2017: Assimilation of land surface temperature in the coupled land atmosphere system, *EMS Annual Meeting*, 4–8 September 2017, Dublin.

Schulz, J.-P. and G. Vogel, 2017: An improved representation of the land surface temperature including the effects of vegetation in the COSMO model, *EGU General Assembly*, 23–28 April 2017, Vienna (Poster presentation).

Schulz, J.-P., 2016: A new publication on TERRA, *COSMO General Meeting*, 5–8 September 2016, Offenbach.

Anders, I., S. Brienens, E. Bucchignani, A. Ferrone, B. Geyer, K. Keuler, D. Lüthi, M. Mertens, H.-J. Panitz, S. Saeed, J.-P. Schulz and H. Wouters, 2016: COPAT – towards a recommended model version of COSMO-CLM, *EGU General Assembly*, 17–22 April 2016, Vienna (Poster presentation).

Schulz, J.-P. and G. Vogel, 2016: An evaluation of the simulated bare soil evaporation of an atmospheric model, *EGU General Assembly*, 17–22 April 2016, Vienna (Poster presentation).

Schulz, J.-P., G. Vogel, B. Ahrens, R. Stöckli and J.-M. Bettems, 2016: Ein neues Phänologiemodell für das Landoberflächenschema TERRA der Vorhersagemodelle des Deutschen Wetterdienstes, *DACH Conference*, 14 –18 March 2016, Berlin.

Vogel, G., P. Shrestha and J.-P. Schulz, 2015: Model studies on the impact of vegetation on soil temperatures at the Falkenberg site, *COSMO General Meeting*, 7–10 September 2015, Wroclaw.

Schulz, J.-P., G. Vogel, C. Becker, S. Kothe and B. Ahrens, 2015: Evaluation of the ground heat flux simulated by a multi-layer land surface scheme using high-quality observations at grass land and bare soil, *EGU General Assembly*, 12–17 April 2015, Vienna (Poster presentation).

Schulz, J.-P., G. Vogel, C. Becker and B. Ahrens, 2014: Evaluation of the ground heat flux simulated by a multi-layer land surface scheme using high-quality observations, *COSMO General Meeting*, 8–11 September 2014, Eretria.

Schulz, J.-P., G. Vogel and B. Ahrens, 2014: A new leaf phenology for the land surface scheme TERRA of the COSMO atmospheric model, *EGU General Assembly*, 27 April – 2 May 2014, Vienna.

Schulz, J.-P., G. Vogel, C. Heret and B. Ahrens, 2013: The ground heat flux simulated by the COSMO land surface scheme TERRA, *EMS Annual Meeting*, 9–13 September 2013, Reading.

Schulz, J.-P., 2013: TERRA developments in the CLM community and DWD, *COSMO General Meeting*, 2–5 September 2013, Sibiu.

Schulz, J.-P., G. Vogel, C. Heret and B. Ahrens, 2013: The ground heat flux simulated by the COSMO land surface scheme TERRA, *EGU General Assembly*, 7–12 April 2013, Vienna (Poster presentation).

Lorenz, P., T. Kruschke, R. Osinski, M. Voigt, G. C. Leckebusch, U. Ulbrich, J.-P. Schulz, H. Frank and G. Zängl, 2012: High resolution dynamical downscaling of historical and potential extreme European winter storms, *EGU General Assembly*, 22–27 April 2012, Vienna (Poster presentation).

Schulz, J.-P. and G. Vogel, 2012: The influence of thermal soil and vegetation characteristics on the ground heat flux and temperature, *EGU General Assembly*, 22–27 April 2012, Vienna.

Schulz, J.-P., 2011: Introducing a sea ice scheme in the mesoscale NWP model COSMO-EU of the German Weather Service, *EGU General Assembly*, 3–8 April 2011, Vienna (Poster presentation).

Schulz, J.-P., 2010: Introducing sea ice in the COSMO model, *COSMO General Meeting*, 6–10 September 2010, Moscow.

Lorenz, P., R. Osinski, G. C. Leckebusch, U. Ulbrich, E. Bedacht, E. Faust, P. Miesen, H. Frank and J.-P. Schulz, 2010: Extreme European winter storms - a new event set approach, *EGU General Assembly*, 2–7 Mai 2010, Vienna (Poster presentation).

Schulz, J.-P., 2008: Introducing sub-grid scale orographic effects in the COSMO model, *COSMO General Meeting*, 15–19 September 2008, Cracow.

Schulz, J.-P., 2007: Retuning the turbulent gust component in the COSMO model, *COSMO General Meeting*, 18–21 September 2007, Glyfada.

Schulz, J.-P., E. Heise, B. Ritter and R. Schrodin, 2006: Recent developments of the Lokal-Modell with respect to snow cover, *COSMO General Meeting*, 18–21 September 2006, Bucharest.

Orphanou, A., K. Savvidou, P. Constantinides, S. C. Michaelides, J.-P. Schulz and U. Voigt, 2006: Verification of precipitation forecasts by the DWD limited area model LME over Cyprus, *EGU General Assembly*, 2–7 April 2006, Vienna (Poster presentation).

Schulz, J.-P., 2005: Introducing the Lokal-Modell LME at the German Weather Service, *COSMO General Meeting*, 20–23 September 2005, Zurich.

Schulz, J.-P., 2004: Future plans of DWD: GME and LME, *COSMO General Meeting*, 22–24 September 2004, Milan.

Schulz, J.-P., D. Majewski, J. Förstner, V. Galabov, B. Fay, U. Damrath, G. Doms, A. Gassmann and J. Steppeler, 2003: Improving the simulated precipitation distribution in mountainous terrain in the Lokal-Modell of DWD: A case study 20/02/2002, *COSMO General Meeting*, 24–26 September 2003, Langen.

Schulz, J.-P. and E. Heise, 2002: A new scheme for diagnosing 10-m wind gusts, *COSMO General Meeting*, 25–27 September 2002, Warsaw.

Schulz, J.-P. and G. Doms, 2002: Simulating the storm on 10-11 November 2001 in the Western Mediterranean with the Lokal-Modell of the Deutscher Wetterdienst, *European Conference on Severe Storms*, 26–30 August 2002, Prague.

Schulz, J.-P., J. H. Christensen and O. B. Christensen, 2001: Climate change in Europe simulated by the HIRHAM4 regional climate model based on the SRES A2 and B2 scenarios, Workshop of the “Regional Earth System Modelling Network for the Arctic (RESMoNA)”, 26–27 April 2001, Copenhagen.

Schulz, J.-P., J. H. Christensen and O. B. Christensen, 2001: Climate change in Europe simulated by the HIRHAM4 regional climate model based on the SRES scenarios, *EGS XXVI General Assembly*, 25–30 March 2001, Nice.

Christensen, O. B., J. H. Christensen and J.-P. Schulz, 2000: Analysis of model errors in HIRHAM, Workshop of the EU project MERCURE, 24–25 May 2000, Copenhagen.

Christensen, J. H., J.-P. Schulz and P. Kuhry, 2000: High resolution regional climate model validation and permafrost simulation for the East-European Russian Arctic, *EGS XXV General Assembly*, 25–29 April 2000, Nice (presented by J.-P. Schulz).

Schulz, J.-P., J. H. Christensen and O. B. Christensen, 2000: The influence of two different land-surface coupling techniques in the HIRHAM4 regional climate model, *EGS XXV General Assembly*, 25–29 April 2000, Nice.

Knorr, W. and J.-P. Schulz, 1999: Retrieval of plant-available soil moisture through satellite data assimilation into a global vegetation and land surface model, *International Workshop on Satellite Remote Sensing and Climate Simulations: Synergies and Limitations*, 20–24 September 1999, Les Diablerets.

Schulz, J.-P., L. Dümenil and J. Polcher, 1999: The influence of two different land-surface coupling techniques in a climate model, *4<sup>th</sup> International Conference on Modelling of Global Climate Change and Variability*, 13–17 September 1999, Hamburg (Poster presentation).

Knorr, W., J.-P. Schulz, B. Pinty, M. Verstraete and M. Heimann, 1999: Retrieval of plant-available soil moisture through assimilation of satellite data into a global vegetation and land surface model, *IUGG XXII General Assembly*, 18–30 July 1999, Birmingham.

Schulz, J.-P., L. Dümenil and J. Polcher, 1999: The influence of two different land-surface coupling techniques in the MPI GCM, *IUGG XXII General Assembly*, 18–30 July 1999, Birmingham.

Schulz, J.-P., L. Dümenil and J. Polcher, 1999: Comparing different numerical coupling techniques between land-surface and atmosphere models, *EGS XXIV General Assembly*, 19–23 April 1999, The Hague.

Knorr, W., J.-P. Schulz, M. Heimann, B. Pinty and M. Verstraete, 1998: Retrieval of global plant-available soil moisture by combining satellite observations and vegetation modeling, *AGU Fall Meeting*, 6–10 December 1998, San Francisco.

Schulz, J.-P., L. Dümenil and J. Polcher, 1998: Impact of different numerical coupling techniques between surface and atmosphere in a GCM, *EGS XXIII General Assembly*, 20–24 April 1998, Nice (presented by J. Polcher).

Dümenil, L., J.-P. Schulz and J. Polcher, 1997: Two land surface schemes in the ECHAM4 GCM: Sensitivity of the monsoon circulation, *IAMAS/IAPSO Joint Assemblies*, 1–9 July 1997, Melbourne (presented by J.-P. Schulz).

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Two land surface schemes implemented in the same GCM, *IAMAS/IAPSO Joint Assemblies*, 1–9 July 1997, Melbourne.

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Two land surface schemes implemented in the ECHAM4 GCM: relevance for PILPS phase 4a, Workshop of the "Project for Intercomparison of Land-surface Parameterization Schemes (PILPS)", 27–30 June 1997, Melbourne.

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Two land surface schemes implemented in the same GCM, *EGS XXII General Assembly*, 21–25 April 1997, Vienna.

Schulz, J.-P., L. Dümenil and J. Polcher, 1997: Preliminary results of ECHAM4/SECHIBA, Workshop of the EU project "Land-Surface Processes and Climate Response", 24–26 February 1997, Gif-sur-Yvette.

Schulz, J.-P., L. Dümenil and J. Polcher, 1996: Comparing the atmospheric response to the ECHAM and SECHIBA land surface schemes, *EGS XXI General Assembly*, 6–10 May 1996, The Hague.

Dümenil, L., J.-P. Schulz, J. Polcher, A. Schlosser and Y. Xue, 1995: Land surface energy fluxes: Comparing three models, *IUGG XXI General Assembly*, 2–14 July 1995, Boulder (Invited talk, presented by J.-P. Schulz).

Schulz, J.-P. and L. Dümenil, 1995: Land surface energy fluxes: Comparing three models, Workshop of the EEC project "Physical Parameterization and Climate Response", 12–13 January 1995, Paris.

Schulz, J.-P., H. Boll, R. Hatzky, B. Heber, M.-B. Kallenrode and G. Wibberenz, 1993: Teilchenereignisse gemessen auf der Raumsonde ULYSSES, Spring Meeting of the German Physical Society, 9–11 March 1993, Greifswald.