

# Publication List David Leutwyler

## Peer-Reviewed Publications

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Fuhrer O., T. Chadha, T. Hoefler, G. Kwasniewski, X. Lapillonne, **D. Leutwyler**, D. Lüthi, C. Osuna, C. Schär, T. C. Schulthess and H. Vogt (2018): Near-global climate simulation at 1km resolution: establishing a performance baseline on 4888 GPUs with COSMO 5.0, *Geosci. Model Dev.*, 11, 1665-1681, <https://doi.org/10.5194/gmd-11-1665-2018>

Berthou S., E. Kendon, S. Chan, N. Ban, **D. Leutwyler**, C. Schär and G. Fosser (2018): Pan-European climate at convection-permitting scale: a model intercomparison study, *Clim. Dyn.*  
<https://doi.org/10.1007/s00382-018-4114-6>

Belušić A., M. Telišman Prtenjak, I. Güttler, N. Ban, **D. Leutwyler** and C. Schär (2017): Near-surface wind variability over the broader Adriatic region: insights from an ensemble of regional climate models. *Clim. Dyn* (2018) 50: 4455. <https://doi.org/10.1007/s00382-017-3885-5>

**Leutwyler D.**, D. Lüthi, N. Ban, O. Fuhrer, and C. Schär (2017): Evaluation of the Convection-Resolving Climate Modeling Approach on Continental Scales, *J. Geophys. Res. Atmos.*, 122, doi:10.1002/2016JD026013.

**Leutwyler D.**, O. Fuhrer, X. Lapillonne, D. Lüthi, and C. Schär (2016): Towards European-Scale Convection-Resolving Climate Simulations with GPUs: A Study with COSMO 4.19, *Geosci. Model Dev.*, doi:10.5194/gmd-2016-119.

## Oral Contributions to International Conferences

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**Leutwyler, D.**, Fuhrer, O., Ban, N., Charpilloz, C., Chadha, T., Hoefler, T., Kwasniewski, G., Lapillonne, X., Lüthi, D., Osuna, C., Rajczak, J., Schär, C., Schulthess, T. S., Vogt, H. (2018): On the Prospects and Challenges of Weather and Climate Modeling at Convection-Resolving Resolution. 34th Chaos Communication Congress (34C3)

**Leutwyler, D.**, S. Rüdisühli, N. Ban, O. Fuhrer, D. Lüthi, M. Sprenger, H. Wernli and C. Schär (2016): A Decade-Long European-Scale Convection-Resolving Climate Simulation on GPUs: Computation, Validation and Analyses. Platform for Advanced Scientific Computing (PASC16)

**Leutwyler, D.**, O. Fuhrer, N. Ban, X. Lapillonne, D. Lüthi, C. Scär (2016): A Decade-long European-Scale Convection-Resolving Climate Simulation on GPUs. Understanding Clouds and Precipitation (UPC2016, HD(CP)<sup>2</sup>)

**Leutwyler, D.**, O. Fuhrer, X. Lapillonne, D. Lüthi and Christoph Schär (2016): A Decade-Long Continental-Scale Convection-Resolving Climate Simulation on GPUs, European Geosciences Union General Assembly (EGU16)

**Leutwyler, D.**, O. Fuhrer, N. Ban, X. Lapillonne, D. Lüthi, C. Scär (2015): A Decade-long European-Scale Convection-Resolving Climate Simulation on GPUs. CLM-Community Assembly, 2015

**Leutwyler, D.**, O. Fuhrer, D. Lüthi and C. Schär (2015): Towards Continental-Scale Convection-Resolving Climate Simulations on GPUs. Platform for Advanced Scientific Computing (PASC15)

**Leutwyler, D.**, O. Fuhrer, B. Cumming, X. Lapillonne, T. Gysi, D. Lüthi, C. Osuna, and C. Schär (2014): Towards Cloud-Resolving European-Scale Climate Simulations using a fully GPU-enabled Model: Mesoscale Features in a Continental-Scale Case Study. Platform for Advanced Scientific Computing (PASC14)

**Leutwyler, D.**, Fuhrer, B. Cumming, X. Lapillonne, T. Gysi, D. Lüthi, C. Osuna, and C. Schär (2014): Towards Cloud-Resolving European-Scale Climate Simulations using a fully GPU-enabled Prototype of the COSMO Regional Model, European Geosciences Union General Assembly (EGU14)

## Poster Contributions to International Conferences

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**Leutwyler, D.**, O. Fuhrer, N. Ban, X. Lapillonne, D. Lüthi, C. Scär (2017): Thunderstorms and Vertical Wind in Convection-Resolving Climate Simulations. American Geosciences Union Fall Meeting (AGU2017)

**Leutwyler, D.**, O. Fuhrer, X. Lapillonne, D. Lüthi, C. Scär (2014): Towards European-Scale Convection-Resolving Climate Simulations using Hybrid Supercomputers, The Latsis Symposium 2014

## Scientific Animations

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**Leutwyler, D.**, O. Fuhrer, X. Lapillonne, D. Lüthi, C. Schär, 2015: Continental-Scale Climate Simulation at Kilometer-Resolution. doi:10.3929/ethz-a-010483656

**Leutwyler, D.**, O. Fuhrer, X. Lapillonne, D. Lüthi, C. Schär, 2015: Winter storm Kyrill in a Continental-Scale Convection-Resolving Climate Simulation. doi:10.3929/ethz-a-010483662

**Leutwyler, D.**, O. Fuhrer, X. Lapillonne, D. Lüthi, C. Schär, 2016: Cold Pools in a Convection-Resolving Model, doi:10.3929/ethz-a-010619320

## Contributions to News Outlets

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Stanley S., EOS Research Spotlight (2017): New Supercomputers Allow Climate Models to Capture Convection. Available at <https://eos.org/research-spotlights/new-supercomputers-allow-climate-models-to-capture-convection>, visited 24.08.2017

Ulmer S., CSCS Research Spotlight (2017): Convection-resolving simulation over Europe. Available at [http://www.cscs.ch/publications/highlights/2017/convection\\_resolving\\_simulation\\_over\\_europe/index.html](http://www.cscs.ch/publications/highlights/2017/convection_resolving_simulation_over_europe/index.html), visited 24.08.2017

Ulmer S., CSCS Research Spotlight (2014): Cloud-resolving climate simulations for Europe, [http://www.cscs.ch/publications/highlights/2014/cloud\\_resolving\\_climate\\_simulations\\_for\\_europe/index.html](http://www.cscs.ch/publications/highlights/2014/cloud_resolving_climate_simulations_for_europe/index.html), visited 24.08.2017