

# Kevin Sieck

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## Work Experience

- since 2021 **Department head of Climate Service Infrastructure**, *Climate Service Center Germany (GERICS)*, Hamburg
- 2015 - 2020 **Science officer**, *Climate Service Center Germany (GERICS)*, Hamburg  
maintaining and developing the GERICS digital infrastructure and the regional climate model REMO
- 2013 - 2015 **Visiting scientist**, *Climate Service Center Germany (GERICS)*, Hamburg  
maintaining and developing the regional climate model REMO
- 2011 - 2015 **Science officer in the REDCLIP project**, *Max Planck Institute for Meteorology*, Hamburg  
running and analysing decadal predictions for Europe
- 2011 **Researcher position in the ACQWA project**, *Max Planck Institute for Meteorology*, Hamburg  
analysing the impacts of climate change on glaciers in the European Alps
- 2009 - 2011 **Researcher position in the KLIWAS project**, *Max Planck Institute for Meteorology*, Hamburg  
providing information on climate change and running climate change scenarios; running and analysing seasonal predictions
- 2006 - 2009 **Researcher position in the ANKE project**, *Max Planck Institute for Meteorology*, Hamburg  
processing and providing climate change data; running and analysing seasonal predictions
- 2004 - 2006 **Assistant to Dr. med. Wernecke**, *Krankenhaus Bethanien, Diakonie Klinikum Hamburg*  
statistical analysis for the medical research project Gemidas-QM
- 2003 - 2004 **Student Assistant**, *University of Hamburg, Meteorological Institute*  
development of low-order climate models in the department for Theoretical Meteorology at the University of Hamburg

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## Scientific Interests

convection-permitting ensemble projections with regional climate models  
inter-member variability in regional climate models  
AI-based (data driven) climate service products

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## Education

- 2006 - 2013 **PhD student in Meteorology**, *Max Planck Institute for Meteorology and University of Hamburg*
- 1998 - 2005 **Diploma student in Meteorology**, *Meteorological Institute, University of Hamburg*
- July 1998 **German Abitur**, *Helene-Lange-Gymnasium, Hamburg*

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## PhD Thesis

- title *Internal Variability in the Regional Climate Model REMO*
- supervisors Prof. Dr. Martin Claussen and Dr. Daniela Jacob

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## Diploma Thesis

- title *Variabilität in einem Zweischichtenmodell der Atmosphäre mit und ohne Topographie*
- supervisors Prof. Dr. Klaus Fraedrich and Dr. Frank Lunkeit

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## Languages

German Native  
English Very good

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## Computer Skills

OS	Linux, Unix, Windows	programming	Fortran, Java
scripting	Shell, Python	analysis	xclim
visualization	matplotlib	writing	LibreOffice, L <sup>A</sup> T <sub>E</sub> X

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## Research projects and initiatives involved

- since 2024 ProImpact - Prototype Workflows for User Relevant Climate Information and Impact Modelling. ProImpact is part of the BMBF funding measure WarmWorld that aims at creating the next generation of kilometer-scal Earth-system models and developing innovative workflows to improve the usage in application communities.
- since 2023 UDAG – Updating the Data basis for Adaptation to climate change in Germany. National project to create the first transient convection permitting climate projections for Germany.
- since 2020 NUKLEUS - Coordinator of the BMBF funded NUKLEUS project. NUKLEUS aims at providing robust climate information on convection-permitting scales and developing a climate information system for Germany
- since 2011 CORDEX (EURO-CORDEX) – Coordinated Regional Downscaling Experiment. Especially involved in EURO-CORDEX.
- 2019 - 2022 PilotLab EESM - Helmholtz Association funded project on exascale computing with climate models
- 2019 - 2022 HI-CAM - Helmholtz Association funded project on climate change adaptation in in Germany
- 2018 - 2022 WINTER - Project on Winter Climate in Hamburg within HICSS
- 2018 - 2022 EUCP - European Climate Prediction System
- 2017 - 2022 CORDEX-CORE – Core experiments for the next generation regional climate simulations within CORDEX
- 2017 - 2022 FPS on Convective Phenomena
- 2017 - 2020 ESM – Advanced Earth System Modelling Capacity.
- 2017 - 2018 HAPPI-DE – Within HAPPI-DE the German contribution to the international HAPPI (Half a degree Additional warming, Prognosis and Projected Impacts) project will be conducted.
- 2011 - 2015 REDCLIP – Regional Decadal Climate Prediction. BMBF (German research ministry) funded project on downscaled decadal predictions for Europe as part of the MiKlip program.
- 2011 - 2013 ACQWA – Assessing Climate impacts on the Quantity and quality of Water. EU/FP7 funded project on the influence of climate change on major river discharge and their impact on society and economy.
- 2009 - 2011 CC-TAME – Climate Change: Terrestrial Adaptation and Mitigation in Europe. EU/FP7 project on assessing the impacts of agricultural, climate, energy, forestry and other associated land-use policies considering the resulting feedbacks on the climate system in the European Union.
- 2009 - 2011 KLIWAS – Auswirkungen des Klimawandels auf die Wasserstraßen und Handlungsoptionen für Wirtschaft und Binnenschifffahrt
- 2006 - 2009 ENSEMBLES: EU/FP6 funded project to help inform researchers, decision makers, businesses and the public by providing them with climate information obtained through the use of the latest climate modelling and analysis tools.
- 2006 - 2009 ANKE – Assessing possible impacts of climate change on the energy sector in Germany.

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## Selected conference contributions

- April 2024 **EGU 2024, Vienna**  
oral presentation with the title *Bringing high-resolution climate data into action: Experiences from the transdisciplinary funding measure RegIKlim*
- March 2022 **DACH 2022, Leipzig**  
oral presentation with the title *Zukünftige Klimaänderungen in Deutschland, Gegenüberstellung verschiedener Methoden und Ensembles*
- April 2021 **EGU 2021, Online**  
online presentation with the title *NUKLEUS - User-relevant and applicable kilometer-scale climate information for Germany*
- March 2018 **CitiesIPCC 2018, Edmonton**  
oral presentation with the title *There is more to adaptation than creating a strategy*
- Apr 2016 **EGU General Assembly 2016, Vienna**  
poster presentation with the title *A new generation of the regional climate model REMO: REMO non-hydrostatic*
- May 2014 **3rd Lund Regional-scale Climate Modelling Workshop, Lund**  
poster presentation with the title *Using a Circulation Type Classification to Investigate the Internal Variability in Regional Climate Model Simulations over Europe*

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## Publications

- Valentin Aich, Ulrike Strauch, Kevin Sieck, Dirk Leyens, Daniela Jacob, and Heiko Paeth. Development of wet-bulb-temperatures in Germany with special regard to conventional thermal power plants using wet cooling towers. *Meteorologische Zeitschrift*, 20(6):601–614, December 2011. doi: 10.1127/0941-2948/2011/0259.
- Louisa Marie Bell, K. Heinke Schlünzen, and Kevin Sieck. Influence of data uncertainty on cold season threshold-based climate indices. *Meteorologische Zeitschrift*, 32(3):195–206, 09 2023. doi: 10.1127/metz/2023/1158. URL <http://dx.doi.org/10.1127/metz/2023/1158>.
- Steffen Bender, Jörg Cortekar, Markus Groth, and Kevin Sieck. *Why There Is More to Adaptation Than Creating a Strategy*, pages 67–83. Springer International Publishing, Cham, 2020. ISBN 978-3-030-36875-3. doi: 10.1007/978-3-030-36875-3\_5. URL [https://doi.org/10.1007/978-3-030-36875-3\\_5](https://doi.org/10.1007/978-3-030-36875-3_5).
- William Cabos, Dmitry V. Sein, Ana Durán-Quesada, Giovanni Liguori, Nikolay V. Koldunov, Benjamín Martínez-López, Francisco Alvarez, Kevin Sieck, Natalia Limareva, and Joaquim G. Pinto. Dynamical downscaling of historical climate over the central America domain with a regionally coupled atmosphere-ocean model. *Climate Dynamics*, Aug 2018. ISSN 1432-0894. doi: 10.1007/s00382-018-4381-2. URL <https://doi.org/10.1007/s00382-018-4381-2>.
- William Cabos, Alba de la Vara, Francisco J. Álvarez García, Enrique Sánchez, Kevin Sieck, Juan-Ignacio Pérez-Sanz, Natalia Limareva, and Dmitry V. Sein. Impact of ocean-atmosphere coupling on regional climate: the Iberian Peninsula case. *Climate Dynamics*, 54(9):4441–4467, May 2020. ISSN 1432-0894. URL <https://doi.org/10.1007/s00382-020-05238-x>.
- Ruth Cerezo-Mota, Tereza Cavazos, Raymond Arritt, Abraham Torres-Alavez, Kevin Sieck, Grigory Nikulin, Wilfram Moufouma-Okia, and Jose Antonio Salinas-Prieto. Cordex-na: factors inducing dry/wet years on the north American monsoon region. *Int. J. Climatol.*, 36(2):824–836, 2016. ISSN 1097-0088. URL <http://dx.doi.org/10.1002/joc.4385>.
- James M. Ciarlo<sup>4</sup>, Erika Coppola, Adriano Fantini, Filippo Giorgi, XueJie Gao, Yao Tong, Russell H. Glazer, Jose Abraham Torres Alavez, Taleena Sines, Emanuela Pichelli, Francesca Raffaele, Sushant Das, Melissa Bukovsky, Moetasim Ashfaq, Eun-Soon Im, Thanh Nguyen-Xuan, Claas Teichmann, Armelle Remedio, Thomas Remke, Katharina Bülow, Torsten Weber, Lars Buntemeyer, Kevin Sieck, Diana Rechid, and Daniela Jacob. A new spatially distributed added value index for regional climate models: the Euro-Cordex and the Cordex-core highest resolution ensembles. *Climate Dynamics*, August 2020. ISSN 1432-0894. URL <https://doi.org/10.1007/s00382-020-05400-5>.
- Erika Coppola, Stefan Sobolowski, E. Pichelli, F. Raffaele, B. Ahrens, I. Anders, N. Ban, S. Bastin, M. Belda, D. Belusic, A. Caldas-Alvarez, R. M. Cardoso, S. Davolio, A. Dobler, J. Fernandez, L. Fita, Q. Fumiere,

- F. Giorgi, K. Goergen, I. Güttler, T. Halenka, D. Heinzeller, Ø. Hodnebrog, D. Jacob, S. Kartsios, E. Katragkou, E. Kendon, S. Khodayar, H. Kunstmann, S. Knist, A. Lavín-Gullón, P. Lind, T. Lorenz, D. Maraun, L. Marelle, E. van Meijgaard, J. Milovac, G. Myhre, H.-J. Panitz, M. Piazza, M. Raffa, T. Raub, B. Rockel, C. Schär, K. Sieck, P. M. M. Soares, S. Somot, L. Srnec, P. Stocchi, M. H. Tölle, H. Truhetz, R. Vautard, H. de Vries, and K. Warrach-Sagi. A first-of-its-kind multi-model convection permitting ensemble for investigating convective phenomena over Europe and the Mediterranean. *Climate Dynamics*, Nov 2018. ISSN 1432-0894. doi: 10.1007/s00382-018-4521-8. URL <https://doi.org/10.1007/s00382-018-4521-8>.
- Erika Coppola, Francesca Raffaele, Filippo Giorgi, Graziano Giuliani, Gao Xuejie, James M. Ciarlo, Taleena Rae Sines, José Abraham Torres-Alavez, Sushant Das, Fabio di Sante, Emanuela Pichelli, Russell Glazer, Sebastian Karl Müller, Sabina Abba Omar, Moetasim Ashfaq, Melissa Bukovsky, E.-S. Im, Daniela Jacob, Claas Teichmann, Armelle Remedio, Thomas Remke, Arne Kriegsmann, Katharina Bülow, Torsten Weber, Lars Bunttemeyer, Kevin Sieck, and Diana Rechid. Climate hazard indices projections based on Cordex-core, cmip5 and cmip6 ensemble. *Climate Dynamics*, March 2021. ISSN 1432-0894. URL <https://doi.org/10.1007/s00382-021-05640-z>.
- Borbala Galos, Stefan Hagemann, Andreas Hansler, Georg Kindermann, Diana Rechid, Kevin Sieck, Claas Teichmann, and Daniela Jacob. Case study for the assessment of the biogeophysical effects of a potential afforestation in Europe. *Carbon balance and management*, 8(1):3–3, February 2013. doi: 10.1186/1750-0680-8-3.
- Filippo Giorgi, Erika Coppola, Daniela Jacob, Claas Teichmann, Sabina Abba Omar, Moetasim Ashfaq, Nikolina Ban, Katharina Bülow, Melissa Bukovsky, Lars Bunttemeyer, Tereza Cavazos, James Ciarlo', Rosmeri Porfirio Da Rocha, Sushant Das, Fabio di Sante, Jason P. Evans, Xuejie Gao, Graziano Giuliani, Russell H. Glazer, Peter Hoffmann, Eun-Soon Im, Gaby Langendijk, Ludwig Lierhammer, Marta Llopart, Sebastial Mueller, Rosa Luna-Nino, Rita Nogherotto, Emanuela Pichelli, Francesca Raffaele, Michelle Reboita, Diana Rechid, Armelle Remedio, Thomas Remke, Windmanagda Sawadogo, Kevin Sieck, Jose' Abraham Torres-Alavez, and Torsten Weber. The Cordex-core exp-i initiative: Description and highlight results from the initial analysis. *Bulletin of the American Meteorological Society*, pages 1 – 52, 2021. doi: 10.1175/BAMS-D-21-0119.1. URL <https://journals.ametsoc.org/view/journals/bams/aop/BAMS-D-21-0119.1/BAMS-D-21-0119.1.xml>.
- D. Jacob, H. Göttel, S. Kotlarski, P. Lorenz, and K. Sieck. *Klimaauswirkungen und Anpassung in Deutschland – Phase 1: Erstellung regionaler Klimaszenarien für Deutschland*. Umweltbundesamt, Dessau, 2008.
- Daniela Jacob, Alberto Elizalde, Andreas Haensler, Stefan Hagemann, Pankaj Kumar, Ralf Podzun, Diana Rechid, Armelle Reza Remedio, Fahad Saeed, Kevin Sieck, Claas Teichmann, and Christof Wilhelm. Assessing the transferability of the regional climate model Remo to different coordinated regional climate downscaling experiment (Cordex) regions. *Atmosphere*, 3(1):181–199, March 2012. doi: 10.3390/atmos3010181.
- Daniela Jacob, Claas Teichmann, Stefan Sobolowski, Eleni Katragkou, Ivonne Anders, Michal Belda, Rasmus Benestad, Fredrik Boberg, Erasmo Buonomo, Rita M. Cardoso, Ana Casanueva, Ole B. Christensen, Jens Hesselbjerg Christensen, Erika Coppola, Lesley De Cruz, Edouard L. Davin, Andreas Dobler, Marta Domínguez, Rowan Fealy, Jesus Fernandez, Miguel Angel Gaertner, Markel García-Díez, Filippo Giorgi, Andreas Gobiet, Klaus Goergen, Juan José Gómez-Navarro, Juan Jesús González Alemán, Claudia Gutiérrez, José M. Gutiérrez, Ivan Güttler, Andreas Haensler, Tomáš Halenka, Sonia Jerez, Pedro Jiménez-Guerrero, Richard G. Jones, Klaus Keuler, Erik Kjellström, Sebastian Knist, Sven Kotlarski, Douglas Maraun, Erik van Meijgaard, Paola Mercogliano, Juan Pedro Montávez, Antonio Navarra, Grigory Nikulin, Nathalie de Noblet-Ducoudré, Hans-Juergen Panitz, Susanne Pfeifer, Marie Piazza, Emanuela Pichelli, Joni-Pekka Pietikäinen, Andreas F. Prein, Swantje Preuschmann, Diana Rechid, Burkhardt Rockel, Raquel Romera, Enrique Sánchez, Kevin Sieck, Pedro M. M. Soares, Samuel Somot, Lidija Srnec, Silje Lund Sørland, Piet Termonia, Heimo Truhetz, Robert Vautard, Kirsten Warrach-Sagi, and Volker Wulfmeyer. Regional climate downscaling over Europe: perspectives from the Euro-Cordex community. *Regional Environmental Change*, 20(2):51, April 2020. ISSN 1436-378X. URL <https://doi.org/10.1007/s10113-020-01606-9>.
- Groth M. Haustein K. Rechid D. Sieck K. Wolff M. Jacob D., Görl K. Naturwissenschaftlicher Hintergrund der Erderwärmung: Wo stehen wir zurzeit? *Wirtschaftsdienst*, 101(5):330–334, 2021. doi: 10.1007/s10273-021-2911-8.
- Pankaj Kumar, Sven Kotlarski, Christopher Moseley, Kevin Sieck, Holger Frey, Markus Stoffel, and Daniela Jacob. Response of Karakoram-Himalayan glaciers to climate variability and climatic change: A regional

- climate model assessment. *Geophys. Res. Lett.*, 42(6):1818–1825, 2015. ISSN 1944-8007. URL <http://dx.doi.org/10.1002/2015GL063392>.
- G.S. Langendijk, D. Rechid, K. Sieck, and D. Jacob. Added value of convection-permitting simulations for understanding future urban humidity extremes: case studies for berlin and its surroundings. *Weather and Climate Extremes*, 33:100367, 2021. ISSN 2212-0947. doi: <https://doi.org/10.1016/j.wace.2021.100367>. URL <https://www.sciencedirect.com/science/article/pii/S2212094721000578>.
- M. O. Molina, J. M. Careto, C. Gutiérrez, E. Sánchez, K. Goergen, S. Sobolowski, E. Coppola, E. Pichelli, N. Ban, D. Belusić, C. Short, C. Caillaud, A. Dobler, Ø. Hodnebrog, S. Kartsios, G. Lenderink, H. de Vries, O. Göktürk, J. Milovac, H. Feldmann, H. Truhetz, M. E. Demory, K. Warrach-Sagi, K. Keuler, M. Adinolfi, M. Raffa, M. Tölle, K. Sieck, S. Bastin, and P. M. M. Soares. The added value of simulated near-surface wind speed over the alps from a km-scale multimodel ensemble. *Climate Dynamics*, 2024. ISSN 1432-0894. doi: [10.1007/s00382-024-07257-4](https://doi.org/10.1007/s00382-024-07257-4). URL <https://doi.org/10.1007/s00382-024-07257-4>.
- J.-P. Pietikäinen, T. Markkanen, K. Sieck, D. Jacob, J. Korhonen, P. Räisänen, Y. Gao, J. Ahola, H. Korhonen, A. Laaksonen, and J. Kaurola. The regional climate model remo (v2015) coupled with the 1-d freshwater lake model flake (v1): Fenno-scandinavian climate and lakes. *Geoscientific Model Development*, 11(4):1321–1342, 2018. doi: [10.5194/gmd-11-1321-2018](https://doi.org/10.5194/gmd-11-1321-2018). URL <https://www.geosci-model-dev.net/11/1321/2018/>.
- Armelle Reça Remedio, Claas Teichmann, Lars Buntmeyer, Kevin Sieck, Torsten Weber, Diana Rechid, Peter Hoffmann, Christine Nam, Lola Kotova, and Daniela Jacob. Evaluation of new cordex simulations using an updated köppen–trewartha climate classification. *Atmosphere*, 10(11), 2019. ISSN 2073-4433. doi: [10.3390/atmos10110726](https://doi.org/10.3390/atmos10110726). URL <https://www.mdpi.com/2073-4433/10/11/726>.
- K. Sieck, C. Nam, L. M. Bouwer, D. Rechid, and D. Jacob. Weather extremes over europe under 1.5 and 2.0 °C global warming from happi regional climate ensemble simulations. *Earth System Dynamics*, 12(2):457–468, 2021. doi: [10.5194/esd-12-457-2021](https://doi.org/10.5194/esd-12-457-2021). URL <https://esd.copernicus.org/articles/12/457/2021/>.
- Kevin Sieck and Daniela Jacob. Influence of the boundary forcing on the internal variability of a regional climate model. *American Journal of Climate Change*, 5(3):373–382, 2016. URL <http://dx.doi.org/10.4236/ajcc.2016.53028>.
- P. M. M. Soares, J. A. M. Careto, Rita M. Cardoso, Klaus Goergen, Eleni Katragkou, Stefan Sobolowski, Erika Coppola, Nikolina Ban, Danijel Belušić, Ségolène Berthou, Cécile Caillaud, Andreas Dobler, Øivind Hodnebrog, Stergios Kartsios, Geert Lenderink, T. Lorenz, Josipa Milovac, Hendrik Feldmann, Emanuela Pichelli, Heimo Truhetz, Marie Estelle Demory, Hylke de Vries, Kirsten Warrach-Sagi, Klaus Keuler, Mario Raffa, Merja Tölle, Kevin Sieck, and Sophie Bastin. The added value of km-scale simulations to describe temperature over complex orography: the cordex fps-convection multi-model ensemble runs over the alps. *Climate Dynamics*, December 2022. ISSN 1432-0894. URL <https://doi.org/10.1007/s00382-022-06593-7>.
- Claas Teichmann, Bastian Eggert, Alberto Elizalde, Andreas Haensler, Daniela Jacob, Pankaj Kumar, Christopher Moseley, Susanne Pfeifer, Diana Rechid, Armelle Reça Remedio, Hinnerk Ries, Juliane Petersen, Swantje Preuschmann, Thomas Raub, Fahad Saeed, Kevin Sieck, and Torsten Weber. How does a regional climate model modify the projected climate change signal of the driving gcm: A study over different cordex regions using remo. *Atmosphere*, 4(2):214–236, June 2013. doi: [10.3390/atmos4020214](https://doi.org/10.3390/atmos4020214).
- Claas Teichmann, Katharina Bülow, Juliane Otto, Susanne Pfeifer, Diana Rechid, Kevin Sieck, and Daniela Jacob. Avoiding extremes: Benefits of staying below +1.5 °c compared to +2.0 °c and +3.0 °c global warming. *Atmosphere*, 9(4), 2018. ISSN 2073-4433.
- Claas Teichmann, Daniela Jacob, Armelle Reça Remedio, Thomas Remke, Lars Buntmeyer, Peter Hoffmann, Arne Kriegsmann, Ludwig Lierhammer, Katharina Bülow, Torsten Weber, Kevin Sieck, Diana Rechid, Gaby S. Langendijk, Erika Coppola, Filippo Giorgi, James M. Ciarlo, Francesca Raffaele, Graziano Giuliani, Gao Xuejie, Taleena Rae Sines, Jose Abraham Torres-Alavez, Sushant Das, Fabio Di Sante, Emanuela Pichelli, Russel Glazer, Moetasim Ashfaq, Melissa Bukovsky, and Eun-Soon Im. Assessing mean climate change signals in the global cordex-core ensemble. *Climate Dynamics*, 57(5):1269–1292, September 2021. ISSN 1432-0894. URL <https://doi.org/10.1007/s00382-020-05494-x>.