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Date of Birth: 5 March 1976  
Citizenship: German

## Education

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**2007–2011**     **PhD in Environmental Engineering, Barcelona Supercomputing Centre & Polytechnical University of Barcelona (BarcelonaTech), Barcelona, Spain**

*Thesis advisors: C. Pérez, J. M. Baldasano. Development of an atmospheric modelling system for regional and global mineral dust prediction (NMMB/BSC-Dust).*

**2000–2006**     **Diplom (equivalent to Master's degree), Meteorology, University of Leipzig (LIM) & Leibniz-Institute for Tropospheric Research (TROPOS), Leipzig, Germany**

*Thesis advisors: W. Birmili, A. Wiedensohler, G. Tetzlaff. A new parameterisation method for the hygroscopic growth of atmospheric aerosol particles.*

## Current and previous positions

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**2014–2020**     **(SENIOR) POSTDOCTORAL RESEARCH ASSOCIATE, School of Geography and the Environment (SoGE), Environmental Change Institute (ECI), University of Oxford, UK**

*World Weather Attribution project: Development of a quasi-real time extreme weather attribution analysis framework for extreme events around the world; Application and support of the weather@home volunteer computing infrastructure (climateprediction.net); Setup of experimental design and analysis of the large ensemble model output; Preparation of weather@home dynamicst attribution; Advancement of a real-time global warming index; Involvement in the REBuILD (flood modelling) and HAPPI projects (1.5°C and 2°C additional warming); Contribution to carbon budget, econometric and impact modelling studies; Contributing author in the upcoming 6th assessment report (AR6)*

**2012–2014**     **POSTDOCTORAL RESEARCH ASSOCIATE, SoGE, University of Oxford, UK**

*DO4Models project (PI Richard Washington): Development of a box model to test mineral dust emission schemes; assisting in the DO4Models field campaign work; running and evaluating HadGEM3 RCM simulations in collaboration with MetOffice project partners*

**2009**            **VISITING PHD STUDENT, Laboratoire de Meteorologie Dynamique (LMD)/Ecole Polytechnique, Palaiseau, France**

**2005**            **VISITING JUNIOR SCIENTIST, Laboratoire des Sciences du Climat et de l'Environnement (LSCE), Gif-sur-Yvette, France**

**2004**            **VISITING STUDENT, National Institute for Water and Atmospheric Research (NIWA), Lauder, New Zealand**

**2001–2003**     **RESEARCH ASSISTANT, TROPOS and LIM, Leipzig, Germany**

## Professional skills and activities

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LANGUAGES:	German (native), English (excellent), Spanish (fluent)
COMPUTING:	analytical/statistical programming in Fortran and Python; extensive experience in large-ensemble modelling and handling of very large datasets; expertise in shell-scripting (Unix), CDO, NCO, GrADS, IDL und R; planning and configuration various model experiments; setup of operational forecasts products; GCM/NWP model development; HPC experience
TEACHING:	Atmospheric dynamics, Thermodynamics, Ocean circulation, Climate Change, Climate modelling, Numerical methods, Ecosystem dynamics
SUPERVISION:	Ruksana Rimi (PhD thesis; 2015-2019); Matthew Patterson, Savitri Kumari, Yoav Gross, Jack Rogers, Rachael Antwi, Alvin Chan (MSc/MPhil theses; 2016-2020)

## Publications (ORCID iD: 0000-0003-3126-7851)

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IN PREP	<p><b>K. Haustein</b>, B. Strauss, S. Li, F.E.L. Otto. A consistent multi-method global event attribution framework. <i>Environmental Research Letters</i>.</p> <p>P. Lorenz, F. Kreienkamp, T. Deutschländer, <b>K. Haustein</b>, F.E.L. Otto. Analysis of the drought in north-eastern Germany in 2018. <i>Climatic Change</i>.</p>
IN REVIEW	<p>M. Zachariah, S. Kumari, A. Mondal, <b>K. Haustein</b>, F.E.L. Otto. Attribution of the 2015 compound drought in Marathwada, India from a multivariate perspective. <i>Geophysical Research Letters</i>, in review.</p> <p>G.J. van Oldenborgh, F. Krikken, S. Lewis, N.J. Leach, F. Lehner, K.R. Saunders, M. van Weele, <b>K. Haustein</b>, S. Li, D. Wallom, S. Sparrow, J. Arrighi, R.P. Singh, M.K. van Aalst, S.Y. Philip, R. Vautard, F.E.L. Otto. Attribution of the Australian bushfire risk to anthropogenic climate change. <i>Natural Hazards and Earth System Sciences Discussions</i>, doi:10.5194/nhess-2020-69, in discussion.</p> <p>H.D. Matthews, K.B. Tokarska, J. Rogelj, P.M. Forster, <b>K. Haustein</b>, C.J. Smith, A.H. MacDougall, N. Mengis, S. Sippel and R. Knutti. A new framework for understanding and quantifying uncertainties in the remaining carbon budget. <i>Nature Climate Change</i>, in review.</p> <p>F. Krikken, F. Lehner, <b>K. Haustein</b>, I. Drobyshev and G.J. van Oldenborgh. Attribution of the role of climate change in the forest fires in Sweden 2018. <i>Natural Hazards and Earth System Sciences Discussions</i>, doi:10.5194/nhess-2019-206, in discussion.</p> <p><b>K. Haustein</b>, P. Uhe, R.H. Rimi, AKM S. Islam and F.E.L. Otto. Changing frequency of flooding in Bangladesh: Is the wettest place on Earth getting wetter? <i>Geophysical Research Letters</i>, in revision.</p> <p>R.H. Rimi, <b>K. Haustein</b>, E. Barbour, S.N. Sparrow, S. Li, D. Wallom and M.R. Allen. Risks of seasonal extreme rainfall events in Bangladesh under 1.5 and 2.0 degrees warmer worlds - How anthropogenic aerosols change the story. <i>Hydrology Earth System Science Discussions</i>, doi:10.5194/hess-2018-400, in review.</p> <p>P. Uhe, F.E.L. Otto, <b>K. Haustein</b>, G.J. van Oldenborgh, R. Vautard, S. Kew, P. Yiou, S. Jézéquel, S. Phillip, D. Wallom, M.R. Allen and H. Cullen. Influence of climate change and other factors on the December 2015 extreme temperatures in the United Kingdom. <i>Environmental Research Letters</i>, in review.</p>

**K. Haustein**, F.E.L. Otto, P. Uhe, M.R. Allen and K. AchutaRao. Battle of forcings: The case of the 2015 India Heat wave. *Natural Hazards and Earth System Sciences Discussions*, resubmitted.

S. Li, F.E.L. Otto, **K. Haustein** and L. Harrington. The tales of the Amazons in 1.5°C and 2°C warmer worlds. *Environmental Research Letters*, in review.

2019

**K. Haustein**, V. Venema, K. Cowtan, Z. Hausfather, R.G. Way, F.E.L. Otto, B. White, P. Jacobs, A. Subramanian and A.P. Schurer. A limited role for unforced internal variability in 20th century warming. *Journal of Climate*, 32, 4893-4917, doi:10.1175/JCLI-D-18-0555.1, 2019.

S. Kumari, **K. Haustein**, J. Hammad, C.A. Burton, M.R. Allen, H. Paltan, S. Dadson and F.E.L. Otto. Committed Aerosol Effect substantially increases Flood Risk under 1.5°C and 2°C Warming: A case study for Uttarakhand, India. *Environmental Res. Letters*, 14, 044033, doi:10.1088/1748-9326/ab0bce, 2019.

S. Philip, S.N. Sparrow, S.F. Kew, K. van der Wiel, N. Wanders, R. Singh, A. Hassan, K. Mohammad, H. Javid, **K. Haustein**, F.E.L. Otto, F. Hirpa, R.H. Rimi, AKM S. Islam, D. Wallom, G.J. van Oldenborgh. Attributing the 2017 Bangladesh floods from meteorological and hydrological perspectives. *Hydrology and Earth System Sciences*, 23, 1409-1429, doi:10.5194/hess-23-1409-2019, 2019.

2018

R.H. Rimi, **K. Haustein**, E. Barbour, M.R. Allen and R.G. Jones. Evaluation of the regional climate model of Bangladesh for extreme weather events analysis. *International Journal of Climatology*, doi:10.1002/joc.5931, 2018.

R.H. Rimi, **K. Haustein**, E. Barbour, M.R. Allen. Risks of extreme rainfall events of Bangladesh: Is anthropogenic climate change playing a role? [in "Explaining Extremes of 2017 from a Climate Perspective"]. *Bulletin of the American Meteorological Society*, 98 (13), S1-S5, doi:10.1175/BAMS-D-18-0152.1, 2018.

S. Philip, S.F. Kew, G.J. van Oldenborgh, E. Aalbers; R. Vautard; F.E.L. Otto, **K. Haustein**, F. Habets, R. Singh. Validation of a rapid attribution of the May/June 2016 flood-inducing precipitation in France to climate change. *Journal of Hydrometeorology*, 19, 1881-1898, doi:10.1175/JHM-D-18-0074.1, 2018.

H. Paltan, S. Dadson, M.R. Allen, **K. Haustein** and L. Fuldaer. Global implications of 1.5°C and 2°C warmer worlds on extreme river flows. *Environmental Research Letters*, 13, 094003, doi:10.1088/1748-9326/aad985, 2018.

N. Leach, R. Millar, **K. Haustein**, S. Jenkins, E. Graham and M.R. Allen. Current level and rate of warming determine emissions budgets under ambitious mitigation. *Nature Geoscience*, 11, 574-579, doi:10.1038/s41561-018-0156-y, 2018.

S. Philip, S.F. Kew, G.J. van Oldenborgh, F.E.L. Otto, S. O'Keefe, **K. Haustein**, A. King, A. Zegeye, Z. Eshetu, K. Hailemariam, R. Singh, E. Jjemba, C. Funk and H. Cullen. Attribution analysis of the Ethiopian drought of 2015. *Journal of Climate*, 31, 2465-2486, doi:10.1175/JCLI-D-17-0274.1, 2018.

G.J. van Oldenborgh, K. van der Wiel, A. Sebastian, R. Singh, J. Arrighi, F.E.L. Otto, **K. Haustein**, S. Li, G. Vecchi and H. Cullen. Attribution of extreme rainfall from Hurricane Harvey, Aug. 2017. *Environ. Res. Letters*, 13, 019501, doi:10.1088/1748-9326/aaa343, 2018.

M.R. Grose, M. Black, J.S. Risbey, P. Uhe, P.K. Hope, **K. Haustein**, D.M. Mitchell. Severe frosts in Western Australia in September 2016. [in "Explaining Extremes of 2015 from a Climate Perspective"]. *Bulletin of the American Meteorological Society*, 98 (13), S150-S154, doi:10.1175/BAMS-D-17-0088.1, 2018.

- 2017 **K. Haustein**, M.R. Allen, P.M. Forster, F.E.L. Otto, D.M. Mitchell, H.D. Matthews and D. J. Frame. A real-time Global Warming Index. *Scientific Reports*, 7, 15417, doi:10.1038/s41598-017-14828-5, 2017.
- J.F. Kok, D.A. Ridley, Q. Zhou, R.L. Miller, C. Zhao, C.L. Heald, D.S. Ward, S. Albani and **K. Haustein**. Smaller desert dust cooling effect estimated from analysis of dust size and abundance. *Nature Geoscience*, 10, 274-278, doi:10.1038/ngeo2912, 2017.
- F. Pretis, M. Schwarz, K. Tang, **K. Haustein** and M.R. Allen. Uncertain Impacts on Economic Growth When Stabilizing Global Temperatures at 1.5°C or 2°C Warming. *Philosophical Transactions of the Royal Society A*, doi:10.1098/rsta.2016.0460, 2017.
- B.P. Guillod, R.G. Jones, A. Bowery, **K. Haustein**, N.R. Massey, D.M. Mitchell, F.E.L. Otto, S.N. Sparrow, P. Uhe, D. Wallom, S. Wilson and M.R. Allen. weather@home 2: validation of an improved global-regional climate modelling system. *Geoscientific Model Developments*, 10, 1849-1872, doi:10.5194/gmd-10-1849-2017, 2017.
- R. Hauser, L. Gudmundsson, R. Orth, A. Jézéquel, **K. Haustein**, R. Vautard, G.J. van Oldenborgh, L. Wilcox and S.I. Seneviratne. Methods and Model Dependency of Extreme Event Attribution: The 2015 European Drought. *Earths Future*, 5, 10, 1034-1043, doi:10.1002/2017EF000612, 2017.
- D. Mitchell, K. AchutaRao, M.R. Allen, I. Bethke, U. Beyerle, A. Ciavarella, P.M. Forster, J. Fuglestvedt, N. Gillett, **K. Haustein**, W.J. Ingram, T. Iversen, V. Kharin, N. Klingaman, N. Massey, E. Fischer, C.-F. Schleussner, J. Scinocca, Ø. Seland, H. Shiogama, E. Shuckburgh, S.N. Sparrow, D. Stone, P. Uhe, D. Wallom, M. Wehner and R. Zaaboul. Half a degree additional warming, prognosis and projected impacts (HAPPI): background and experimental design. *Geosci. Model Dev.*, 10, 571-583, doi:10.5194/gmd-10-571-2017, 2017.
- D. Mitchell, P. Davini, B. Harvey, N.R. Massey, **K. Haustein**, T. Woollings, R. Jones, F.E.L. Otto, B.P. Guillod, S.N. Sparrow, D. Wallom and M.R. Allen. Assessing mid-latitude dynamics in event attribution systems. *Clim. Dyn.*, 48, 11-12, 3889-3901, 2017.
- G.J. van Oldenborgh, F.E.L. Otto, **K. Haustein** and K. AchutaRao. The heavy precipitation event of December 2015 in Chennai, India. [in "Explaining Extremes of 2015 from a Climate Perspective"]. *Bulletin of the American Meteorological Society*, 97 (12), S87-S91, doi:10.1175/BAMS-D-16-0129.1, 2017.
- 2016 **K. Haustein**, F.E.L. Otto, P. Uhe, N. Schaller, M.R. Allen, L. Hermanson, N. Christidis, P. McLean, and H. Cullen. Real-time extreme weather event attribution with forecast seasonal SSTs. *Environ. Res. Letters*, 11, 064006, doi:10.1088/1748-9326/11/6/064006, 2016.
- P. Uhe, F.E.L. Otto, **K. Haustein**, G.J. van Oldenborgh, A. King, D. Wallom, M. R. Allen and H. Cullen. Comparison of Methods: Attributing the 2014 record European temperatures to human influences. *Geophysical Research Letters*, doi:10.1002/2016GL069568, 2016.
- N. Schaller, A.L. Kay, R. Lamb, N.R. Massey, G.J. van Oldenborgh, F.E.L. Otto, S.N. Sparrow, R. Vautard, P. Yiou, I. Ashpole, A. Bowery, S.M. Crooks, **K. Haustein**, C. Huntingford, W.J. Ingram, R.G. Jones, T. Legg, J. Miller, J. Skeggs, D. Wallom, A. Weisheimer, S. Wilson, P.A. Stott, and M.R. Allen. Human influence on climate in the 2014 southern England winter floods and their impacts. *Nature Climate Change*, doi:10.1038/nclimate2927, 2016.
- F.E.L. Otto, C.A.S. Coleho, A. King, E. Coughlan de Perez, Y. Wada, G.J. van Oldenborgh, R. Haarsma, **K. Haustein**, P. Uhe, M. van Aalst, J.A. Aravequia, W. Almeida and H. Cullen. Water shortage in southeast Brazil. [in "Explaining Extremes of 2014 from a Climate Perspective"]. *Bulletin of the American Meteorological Society*, 96 (11), AMS 35-40, doi:10.1175/BAMS-D-15-00120.1, 2016.

- 2015 G.J. van Oldenborgh, F.E.L. Otto, **K. Hauste**in and H. Cullen. Climate change increases the probability of heavy rains like those of storm Desmond in the UK - an event attribution study in near-real time. *Hydrology and Earth System Sciences Discussions*, doi:10.5194/hessd-12-13197-2015, 2015.
- K. Hauste**in, J. King, G. Wiggs, D. Thomas, R. Washington, and L. Menut. Testing the performance of state-of-the-art dust emission schemes using Do4Models field data. *Geoscientific Model Developments*, 8, 341- 362, doi:10.5194/gmd-8-341-2015, 2015.
- 2009-2013 L. Menut, C. Pérez, **K. Hauste**in, B. Bessagnet, C. Prigent and S. Alfaro. Impact of surface roughness and soil texture on mineral dust emission fluxes modeling. *Journal of Geophysical Research*, 118, 1-16, doi:10.1002/jgrd.50313, 2013.
- K. Hauste**in, C. Pérez, J.M. Baldasano, O. Jorba, Z. Janjic, T. Black, S. Nickovic, R.L. Miller, S. Basart, R. Washington, and M.C. Todd. Atmospheric dust modeling from meso to global scales with the online NMMB/BSC-Dust model - Part 2: Experimental campaign in Northern Africa. *Atmos. Chem. and Physics*, 12, 2933-2958, doi:10.5194/acp-12-2933-2012, 2012.
- C. Pérez, **K. Hauste**in, Z. Janjic, O. Jorba, N. Huneus, J.M. Baldasano, T. Black, S. Basart, S. Nickovic, R.L. Miller, J. Perlwitz, M. Schulz, and M. Thomson. Atmospheric dust modeling from meso to global scales with the online NMMB/BSC-Dust model - Part 1: Model description, annual simulations and evaluation. *Atmospheric Chemistry and Physics*, 11, 13001-13027, doi:10.5194/acp-11-13001-2011, 2011.
- P. Seifert, A. Ansmann, I. Mattis, U. Wandinger, M. Tesche, R. Engelmann, D. Müller, C. Pérez, and **K. Hauste**in. Saharan dust and heterogeneous ice formation: Eleven years of cloud observations at a central-European EARLINET site. *Geophysical Research Letters*, 115, D20201, doi:10.1029/2009JD013222, 2010.
- K. Hauste**in, C. Pérez, J. M. Baldasano, D. Müller, M. Tesche, A. Schladitz, M. Esselborn, B. Weinzierl, K. Kandler, and W. v. Hoyningen-Huene. Regional dust model performance during SAMUM-1. *Geophys. Res. Letters*, 36, L03812, doi:10.1029/2008GL036463, 2009.
- E. Gerasopoulos, P. Kokkalis, V. Amiridis, E. Liakakou, C. Pérez, **K. Hauste**in, K. Eleftheratos, M.O. Andreae, T.W. Andreae, and C.S. Zerefos. Dust specific extinction cross-sections over the Eastern Mediterranean using the BSC-DREAM model and sun photometer data: the case of urban environments. *Annales Geophysicae*, 27, 2903-2912, doi:10.5194/angeo-27-2903-2009, 2009.