

Karin van der Wiel

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My general research interests include atmospheric dynamics, atmosphere-land and atmosphere-ocean interactions, extreme events, regional weather and the impact of weather on society. Most of my research focuses is on how internal climate variability and climate change might impact these topics. I hope to contribute to increasing our understanding of Earth's weather and climate in a way that is useful for society.

PROFESSIONAL EXPERIENCE

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE | POSTDOCTORAL RESEARCH SCIENTIST
October 2016 – present | De Bilt, Netherlands

- High impact climate extremes

PRINCETON UNIVERSITY | POSTDOCTORAL RESEARCH ASSOCIATE
NOAA GEOPHYSICAL FLUID DYNAMICS LABORATORY | VISITING SCIENTIST
October 2015 – September 2016 | Princeton, NJ, U.S.A.

- U.S. extreme precipitation and flooding
- Mild weather

EDUCATION

UNIVERSITY OF EAST ANGLIA | PHD ENVIRONMENTAL SCIENCE
July 2015 | Norwich, United Kingdom

Thesis: Mechanisms for the existence of diagonal Southern Hemisphere convergence zones
 Advisors: Prof. Adrian Matthews • Prof. David Stevens • Dr Manoj Joshi

WAGENINGEN UNIVERSITY | MSc METEOROLOGY AND AIR QUALITY
November 2011 | Wageningen, Netherlands
 Specialisation: Meteorology and climate • Cum Laude

WAGENINGEN UNIVERSITY | BSc SOIL, WATER, ATMOSPHERE
August 2009 | Wageningen, Netherlands
 Minor: Applied mathematics in hydrology • Cum Laude

HONOURS AND AWARDS

2018 | SPARC early-career conference grant.

2018 | AGU Editor's Citation for Excellence in Refereeing for Water Resources Research.

2017 | AGU James R. Holton Award.

2014 | AGU student travel grant.

2013 | Geophysical fluid dynamics fellowship, Woods Hole Oceanographic Institution.

2012 | University of East Anglia, Faculty of Science, fully-funded PhD studentship.

PUBLICATIONS

Peer-reviewed journal articles

K van der Wiel, SB Kapnick, GA Vecchi, JA Smith, PCD Milly, L Jia (2018): 100-yr Lower-Mississippi floods in a global climate model: characteristics and future changes. *Journal of Hydrometeorology*, 19 (10), pp. 1547-1563.

L Krishnamurthy, GA Vecchi, X Yang, K van der Wiel, V Balaji, SB Kapnick, L Jia, F Zeng, K Paffendorf, S Underwood (2018): Causes and probability of occurrence of extreme precipitation events like Chennai 2015. *Journal of Climate*, 31 (10), pp. 3831-3848.

FEL Otto, K van der Wiel, GJ van Oldenborgh, S Philip, SF Kew, P Uhe, H Cullen (2018): Climate change increases the probability of heavy rains in the northern UK like those of storm Desmond – a real-time event attribution revisited. *Environmental Research Letters*, 13 (2), 024006.

GJ van Oldenborgh, K van der Wiel, A Sebastian, R Singh, J Arrighi, FEL Otto, K Haustein, S Li, GA Vecchi, H Cullen (2017): Attribution of the extreme rainfall from Hurricane Harvey, August 2017. *Environmental Research Letters*, 12 (12), 124009, featured article.

K van der Wiel, ST Gille, SG Llewellyn Smith, PF Linden, C Cenedese (2017): Characteristics of colliding sea breeze gravity current fronts: a laboratory study. *Quarterly Journal of the Royal Meteorological Society*, 143 (704), 1434-1441.

K van der Wiel, SB Kapnick, GJ van Oldenborgh, K Whan, S Philip, GA Vecchi, RK Singh, J Aright, H Cullen (2017): Rapid attribution of the August 2016 flood-inducing extreme precipitation in south Louisiana to climate change. *Hydrology and Earth System Sciences*, 21 (2), 897-921, highlighted article.

K van der Wiel, SB Kapnick, GA Vecchi (2017): Shifting patterns of mild weather in response to projected radiative forcing. *Climatic Change*, 140 (3), 649-658.

K van der Wiel, SB Kapnick, GA Vecchi, WF Cooke, TL Delworth, L Jia, H Murakami, S Underwood, F Zeng (2016): The resolution dependence of US precipitation extremes in response to CO₂ forcing. *Journal of Climate*, 29 (22), 7991-8012.

MA Stiller-Reeve, C Heuzé, WT Ball, RH White, G Messori, K van der Wiel, I Medhaug, A Eckes, A. O'Callaghan, MJ Newland, S Williams, M Kasoar, HE Wittmeier and V Kumer (2016): Improving together: better science writing through peer learning. *Hydrology and Earth System Sciences*, 20 (7), 2965-2973.

K van der Wiel, AJ Matthews, MM Joshi and DP Stevens (2016): The influence of diabatic heating in the South Pacific Convergence Zone on Rossby wave propagation and the mean flow. *Quarterly Journal of the Royal Meteorological Society*, 142 (695), 901-910.

K van der Wiel, AJ Matthews, MM Joshi and DP Stevens (2016): Why the South Pacific Convergence Zone is diagonal. *Climate Dynamics*, 46 (5), 1683-1698.

K van der Wiel, AJ Matthews, DP Stevens and MM Joshi (2015): A dynamical framework for the origin of the diagonal South Pacific and South Atlantic Convergence Zones. *Quarterly Journal of the Royal Meteorological Society*, 141 (691), 1997-2010, featured article.

MM Joshi, M Stringer, K van der Wiel, A O'Callaghan, S Fueglistaler (2015): IGCM4: A fast, parallel and flexible intermediate climate model. *Geoscientific Model Development*, 8 (4), 1157-1167.

W Hazeleger, X Wang, C Severijns, S Stefanescu, R Bintanja, A Sterl, K Wyser, T Semmler, S Yang, B van den Hurk, T van Noije, E van der Linden and K van der Wiel (2012): EC-Earth V2.2: description and validation of a new seamless earth system prediction model. *Climate Dynamics*, 39 (11), 2611-2629.

Presentations (presenting author only)

2018 | EGU general assembly • University of Exeter • SPARC General Assembly (planned)

2017 | Wageningen University • Compound extremes workshop • EGU general assembly • University of East Anglia • IIT Gandhinagar • IIT Delhi • AGU fall meeting

2016 | DCMIP workshop • Rutgers University • Columbia University • Massachusetts Institute of Technology • Princeton University • GLP open science meeting • Chinese Academy of Sciences

2015 | University of East Anglia • UK MetOffice

2014 | AGU fall meeting

2013 | Woods Hole Oceanographic Institute • University of Cambridge • University of East Anglia

2011 | Wageningen University

FURTHER ACTIVITIES

2017 – present | Core-team member for KNMI's 'klimaatbericht' service.

2015 – present | Volunteer scientist in the 'Letters to a Pre-Scientist' program, www.prescientist.org.

2017 | Global teleconnections summer school, Potsdam Institute for Climate Impact Research, Germany.

2017 | Addressing the challenge of compound events workshop, ETH Zurich, Switzerland.

2016 | Dynamical Core Model Intercomparison Project workshop/summer school.

2013 – 2015 | Co-founder of the UEA ClimateSnack writing group, www.scisnack.com.

2013 | Fellow in the Geophysical Fluid Dynamics Program, Woods Hole Oceanographic Institution.

2012 | Advanced Climate Dynamics Courses summer school: Landscapes and Climate, University of Bergen, Norway.

ACADEMIC ADVISING

2017 – 2018 | Laurens Stoop, MSc dissertation supervisor (MSc student, Utrecht University)

2016 | Aria Alexander, summer intern co-supervisor (undergraduate student, Princeton University)

OTHER SKILLS AND EXPERIENCE

Languages

Dutch (native) • English (fluent)

Manuscript review

Atmospheric Research • Atmospheric Science Letters • Bulletin of the American Meteorological Society • Climate Dynamics • Geophysical Research Letters • Journal of Climate • Journal of Geophysical Research: Atmospheres • Journal of Hydrometeorology • Nature Communications • Nature Geoscience • Nature Scientific Reports • Theoretical and Applied Climatology • Quarterly Journal of the Royal Meteorological Society • Water Resources Research

Media interviews

print/online | The Advocate • Associated Press • Canadian Press • Carbon Brief • Christian Science Monitor • Climate Central • ClimateNexus • Climatewire • CNN • David Suzuki • Delta • EOS Wetenschap • The Gazette • The Guardian • Inside Climate News • Interrobang • Local Xpress Nova Scotia • Mashable • Missoulian • Mother Jones • NationSwell • New York Times • Ogoniok Weekly • San Diego Union-Tribune • La Tercera • The Times Picayune • USA Today • Washington Post • WIRED
radio/video | 9NEWS (Denver) • CHQR (Calgary) • CKNW (Vancouver)

Memberships

American Geophysical Union • Dutch Association for the promotion of meteorology (NVBM) • European Geophysical Union • (UK) Royal Meteorological Society • (UK) Higher Education Academy.

REFERENCES

Dr Frank Selten
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Dr Sarah Kapnick
sarah.kapnick@noaa.gov

Prof. Gabriel Vecchi
gvecchi@princeton.edu

Prof. Adrian Matthews
a.j.matthews@uea.ac.uk