

# Karin van der Wiel

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My general research interests include atmospheric dynamics, atmosphere-land and atmosphere-ocean interactions, extreme events, 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

**WAGENINGEN UNIVERSITY | MSc METEOROLOGY AND AIR QUALITY**  
November 2011 | Wageningen, Netherlands

Specialisation: Meteorology and climate • Cum Laude (GPA 8.8/10)

**WAGENINGEN UNIVERSITY | BSc SOIL, WATER, ATMOSPHERE**  
August 2009 | Wageningen, Netherlands

Minor: Applied mathematics in hydrology • Cum Laude (GPA 8.0/10)

## 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

### In press

S Philip, S Sparrow, SF Kew, [K van der Wiel](#), N Wanders, R Singh, A Hassan, K Mohammed, H Javid, K Haustein, FEL Otto, F Hirpa, RH Rimi, AKM Saiful Islam, DCH Wallom, GJ van Oldenborgh: Attributing the 2017 Bangladesh floods from meteorological and hydrological perspectives. *Hydrology and Earth System Sciences*.

[K van der Wiel](#), N Wanders, FM Selten, MFP Bierkens: Added value of large ensemble simulations for assessing extreme river discharge in a 2 °C warmer world. *Geophysical Research Letters*.

### 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 CO<sub>2</sub> 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)

2019 | University of Reading • EGU general assembly (planned)

2018 | EGU general assembly • University of Exeter • SPARC General Assembly • University of Gothenburg

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

## PROPOSALS

2019 | ECMWF special project: 'European energy transition: energy security in a highly-renewable system'

## FURTHER ACTIVITIES

2017 – present | Core-team member for KNMI's 'klimaatbericht' service, contributed 20 messages.

2015 – present | Volunteer scientist in the 'Letters to a Pre-Scientist' program, [www.prescientist.org](http://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](http://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 • Proceedings of the National Academy of Sciences • 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

Available upon request.