Kate Saunders

POSTDOCTORAL RESEARCHER

Delft Institute of Applied Mathematics, TU Delft

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About me

- Current research is in statistical post-processing
- Core focus is on improving probabilistic forecasts of extreme weather events
- PhD research was in extreme value theory
- Core PhD focus was on modelling rainfall extremes in continuous space with dependence
- Applications considered in the thesis helped to improve our understanding of rainfall extremes in Australia
- Passionate about R programming and data visualisation

Employment

Posdoctoral Researcher
Deflt, Netherlands

DELFT UNIVERSITY OF TECHNOLOGY
Oct. 2018 - Present

- Collaborating on a joint project with Koninklijk Nederlands Meteorologisch Instituut (KNMI)
- Research Interests: Post-processing for extreme events, compound events, modelling extremal dependence using covariates

Graduate Researcher
Melbourne, Australia

COMMONWEALTH SCIENTIFIC INSTITUE OF TECHNOLOGY (CSIRO)
Feb. 2012 - Feb. 2014

- Research Interests: natural disaster modelling, floods, tsnumais, sea level rise, computational fluid dynamics

Education

Doctor of Philosophy
Melbourne, Australia

THE UNIVERSITY OF MELBOURNE
Mar. 2014 - Oct. 2018

- Thesis Advisors: Prof. Peter Taylor, Prof. David Karoly and Dr. Alec Stephenson
- Thesis Title: An Investigation of Australian Rainfall using Extreme Value Theory
- Research Interests: Extreme Value Theory, Statistics, Max-stable Processes, Rainfall Extremes, Extremal Dependence, Quality Control

Bachelor of Science (Honours I in Mathematics)
Brisbane, Australia

THE UNIVERSITY OF QUEENSLAND
Jul. 2010 - Jun. 2011

- Thesis advisors: Prof. Tony Roberts
- Thesis title: Mean first passage time for discrete periodic networks

Bachelor of Science
Brisbane, Australia

THE UNIVERSITY OF QUEENSLAND
Feb. 2007 - Jun. 2010

- Major in mathematics

Publications

A Regionalisation Approach for Rainfall based on Extremal Dependence
Extremes (in submission)

K.R. SAUNDERS, A.G. STEPHENSON, AG AND D.J. KAROLY
2019

- Preprint: https://arxiv.org/abs/1907.05750

An Investigation of Australian Rainfall Using Extreme Value Theory
PhD Thesis

K.R. SAUNDERS
2018

- Identifier: http://hdl.handle.net/11343/220318

The Winning Entry for the EVA2017 Competition for Spatiotemporal Prediction of Extreme Rainfall using Generalized Extreme Value Quantiles
Extremes

A.G. STEPHENSON, K. SAUNDERS AND L. TAFAKORI
2018

- DOI: 10.1007/s10687-018-0321-0

The Spatial Distribution of Rainfall Extremes and the Influence of El Niño Southern Oscillation
Weather and Climate Extremes

K. SAUNDERS, A.G. STEPHENSON, P.G. TAYLOR, AND D. KAROLY
2017

- DOI: 10.1016/j.wace.2017.10.001

Assessing Sea Level Rise Risks to Coastal Floodplains in the Kakadu Region, Northern Australia, using a tidally-driven hydrodynamic model
Marine and Freshwater Research

P. BAYLISS, K. SAUNDERS, L. DUTRA, L. MELO, J. HILTON, M. PRAKASH, F. WOOLARD
2016

- DOI: 10.1071/MF16049

Application of Smoothed Particle Hydrodynamics for Modelling Gated Spillway Flows *Applied Mathematical Modelling*

K. Saunders, M. Prakash, P.W. Cleary and M. Cordell *2014*

- DOI: 10.1016/j.apm.2014.05.008

Popular Science Articles

Is Usain Bolt the greatest athlete of all time? That's not what the numbers say *The Conversation*

K. Saunders and A.G. Stephenson *2017*

- Article statistics: 20,609 Readers, 275 Shares

Explainer: was the Sydney storm 'once-in-a-century'? *The Conversation*

K. Saunders, D. Karoly and P.G. Taylor *2015*

- Article statistics: 8591 Readers, 80 Shares

Scholarships and Awards

Laureate Fellowship Postgraduate Researcher Award *The University of Melbourne*

$30,000 AUD per annum *2014 – 2018*

- Awarded in lieu of the Australian Postgraduate Award ($25,000 AUD per annum)