Kate Saunders

Postdoctoral Researcher

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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 dependece 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

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