SAMANTHA FERRETT

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SKILLS

- 10 Years of experience in climate science, including Ph.D.
- Extensive experience working with large climate and weather datasets, including climate model ensemble data, using Python, R and Matlab.
- Experience of working in Unix environment, shell scripting etc.
- Knowledge of statistical methods, including experience with construction of a Bayesian hybrid dynamical-statistical forecast, regression analysis, assessment of model skill etc.
- Verbal and written communication skills – as demonstrated by publication record and communications record.

EMPLOYMENT

Research Scientist, *NCAS, University of Reading* **June 2023 – Present**

Research assessing skill of different forecasting methods at different timescales over Southeast Asia and developing new statistical forecasts of rainfall based on large scale weather conditions.

Postdoctoral Research Fellow, *University of Exeter* **October 2021 – June 2023**

Research assessing biases in cloud radiative feedbacks in current coupled climate models

Postdoctoral Research Associate, *University of Reading* **March 2018 – October 2021**

Working on three projects as part of the Met Office Weather and Climate Science for Service Partnership (WCSSP). Projects involved:

- Examination of the role of weather regimes, including atmospheric equatorial waves, in rainfall in Souteast Asia, and implications for improving rainfall numerical weather prediction (NWP) forecasts.
- Development of hybrid dynamical-statistical forecasts of rainfall conditioned on atmospheric equatorial waves.
- Assessment of skill of high-resolution and global ensemble NWP forecasts of rainfall probability and large-scale circulation in SE Asia.

Associate Research Fellow, *University of Exeter* **October 2014 – March 2018**

Research aimed to increase understanding of persistent coupled climate model biases in ocean-atmospheric processes, particularly those involving surface heat fluxes, that modulate El Niño-Southern Oscillation (ENSO) events.

RESEARCH FUNDING

2021 - Newton Fund FORSEA 8 month follow-on funding (Co-I) – awarded to University of Leeds, University of Reading and University of East Anglia.

EDUCATION

University of Exeter **September 2011 – May 2015**

Ph.D. Mathematics

Thesis: *El Niño-Southern Oscillation stability under global warming.*

University of Exeter **September 2006 – June 2010**

Master of Mathematics with Honours in Mathematics; Class I

PUBLICATIONS

Subselection of publications only. See https://samjferrett.github.io/publications.html for complete list.

Ferrett, S., J. Methven, S. J. Woolnough, G. Yang, C. E. Holloway, and G. Wolf (2023) Hybrid dynamical-statistical forecasts of the risk of rainfall in South East Asia dependent on Equatorial Waves. *Mon. Wea. Rev.*, doi: https://doi.org/10.1175/MWR-D-22-0300.1 In Press.

Gonzalez, P. L. M., Howard, E., **Ferrett, S.**, Frame, T.H.A., Martínez-Alvarado, O., Methven, J., et al. (2023) Weather patterns in Southeast Asia: Enhancing high-impact weather subseasonal forecast skill. *Quarterly Journal of the Royal Meteorological Society*, 149(750), 19– 39. doi: https://doi.org/10.1002/qj.4378

Ferrett, S., Frame, T. H. A, Methven, J., Holloway, C. E., Webster, S., Stein, T. H. M., and Cafaro, C. (2021) Evaluating convection-permitting ensemble forecasts of precipitation over Southeast Asia. *Weather and Forecasting,* doi: https://doi.org/10.1175/WAF-D-20-0216.1

Cafaro C., Woodhams, B., Stein, T. H. M., Birch, C., Webster, S., Bain, C., Hartley, A., Clarke, S., **Ferrett, S.**, and Hill, P. (2021) Do convection-permitting ensembles lead to more skilful short-range probabilistic rainfall forecasts over tropical East Africa? *Weather and Forecasting* doi: https://doi.org/10.1175/WAF-D-20-0172.1

Ferrett, S., Collins, M., Ren, H.-L., Wu, B. and Zhou, T. (2020) The role of tropical mean-state biases in modeled winter Northern Hemisphere El Niño teleconnections. *Journal of Climate*, 33 (11). ISSN 1520-0442 doi: https://doi.org/10.1175/JCLI-D-19-0668.1

Ferrett, S., Yang, G.-Y., Woolnough, S. J., Methven, J., Hodges, K. and Holloway, C. E. (2020) Linking extreme precipitation in Southeast Asia to equatorial waves. *Quarterly Journal of the Royal*

Meteorological Society, 146 (727). pp. 665-684. ISSN 1477-870X doi: https://doi.org/10.1002/qj.3699

Ferrett, S., & Collins, M. (2019). ENSO feedbacks and their relationships with the mean state in a flux adjusted ensemble. *Climate Dynamics*, DOI 10.1007/s00382-016-3270-9

Ferrett, S., Collins, M., & Ren, H. L. (2018). Diagnosing relationships between mean state biases and El Niño shortwave feedback in CMIP5 models. *Journal of Climate*. doi: 10.1175/JCLI-D-17-0331.1

Ferrett, S., Collins, M., & Ren, H. L. (2017). Understanding Bias in the Evaporative Damping of El Niño Southern Oscillation Events in CMIP5 Models. *Journal of Climate*. **30**, 6351-6370.

COMMUNICATIONS

(International and invited only)

S. Ferrett, J. Methven, G.-Y. Yang, C. Holloway, T, Frame, and S. Woolnough. *Hybrid dynamical-statistical forecasts of the risk of rainfall in SE Asia conditional on Equatorial Waves* [Invited Oral], University of East Anglia 2022

S. Ferrett, S. Woolnough, G.-Y. Yang, J. Methven, K. Hodges and C. Holloway. *Tropical wave compositing and analysis* [Oral] The 2nd WCSSP Southeast Asia Regional Science Workshop, Manila, Philippines 2019

S. Ferrett, S. Woolnough, G.-Y. Yang, J. Methven, K. Hodges and C. Holloway. *Linking extreme precipitation in Southeast Asia and equatorial waves* [Poster] The 2nd WCSSP Southeast Asia Regional Science Workshop, Manila, Philippines 2019

S. Ferrett, S. Woolnough, G.-Y. Yang, J. Methven, K. Hodges and C. Holloway. *Equatorial Waves and High Impact Weather in South East Asia* [Oral], AOGS, Singapore 2019

S. Ferrett, M. Collins and H.-L. Ren. *The Role of the Hydrological Cycle in ENSO Atmospheric Feedbacks* [Oral] AGU Fall Meeting, San Francisco, USA 2016

S. Ferrett, M. Collins and H.-L. Ren. *Atmospheric feedbacks in the ENSO cycle and the Role of the Hydrological Cycle* [Oral] The Second Science meeting of CSSP China, Nanjing, China 2015

S. Ferrett and M. Collins. *ENSO stability under climate change* [Poster] CLIVAR Workshop on ENSO extremes and diversity, Sydney, Australia 2015

S. Ferrett and M. Collins. *ENSO stability under climate change* [Oral] EGU General Assembly, Vienna, Austria 2014

SUPERVISION AND TEACHING

2020 - Supervision of MSc Meteorology group project – 'How atypical was the recent flooding in Indonesia?'

2018 - Co-Supervision of project of MSc Meteorology student, Zainab Ali - 'Cocoa & Climate'

2013 – 2015 - Demonstrating weekly Python practical workshops for the undergraduate module 'Programming for Mathematics and Business'

Other - Completion of Learning and Teaching in Higher Education (LTHE) Stage 1 course.
Maths tutoring of secondary school pupils