

Dr Shuai Wang

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EDUCATION **Imperial College London, UK**
2013 - 2017 Ph.D. in Atmospheric Physics

Ocean University of China, China
2011 - 2013 M.Sc. in Meteorology

Ocean University of China, China
2007 - 2011 B.Sc. in Atmospheric Science (1st class honours equiv.)

EMPLOYMENT **Imperial College London, UK**
2017 - Research Associate in Atmospheric Physics and Climate Service

SOAS University of London, UK
2018 - 2019 (joint appointment) Research Fellow in Environmental Management

RESEARCH INTERESTS Tropical cyclones, Climate modelling, Climate service

PUBLICATION **Wang, S.** and Toumi, R. (2020). [Recent Migration of Tropical Cyclones toward Coasts](#). *Science*, 371(6528), 514-517. (IF= 41.845) Free access: [Reprint \(PDF\)](#) or [Full text \(Web\)](#)

Wang, S., Rashid, T., Throp, H. and Toumi, R. (2020). [A shortening of the intensity life-cycle of major tropical cyclones](#). *Geophysical Research Letters*, 47, e2020GL088589. (IF= 4.58)

Bruneau, N., **Wang, S.** and Toumi, R. (2020). [Long memory impact of ocean mesoscale temperature anomalies on tropical cyclone size](#). *Geophysical Research Letters*, 47, e2019GL086165. (IF= 4.58)

Sparks, N., Hon, K., Chan, P., **Wang, S.**, Chan, J., Lee, T., and Toumi, R. (2019). [Aircraft Observations of Tropical Cyclone Boundary Layer Turbulence over the South China Sea](#). *Journal of the Atmospheric Science*, 76, 3773-3783. (IF= 3.159)

Wang, S. and Toumi, R. (2019) [Impact of dry midlevel air on the tropical cyclone outer circulation](#). *Journal of the Atmospheric Science*, 76, 1809-1826. (IF= 3.159)

Wang, S. and Toumi, R. (2018). [A historical analysis of the mature stage of tropical cyclones](#). *International Journal of Climatology*, 38, 2490-2505. (IF=3.609)

Wang, S. and Toumi, R. (2018). [Reduced sensitivity of tropical cyclones to sea surface temperature in a radiative-convective equilibrium environment](#). *Advances in Atmospheric Science*, 35, 981-993. (IF=1.869)

Bruneau, N., Toumi, R. and **Wang, S.** (2018) [Impact of wave white-capping on landfalling tropical cyclones](#). *Scientific Report*, 8, 652. (IF= 4.609)

Wang, S., Fu, G., and Pang, H. (2017). [Structure analyses of the explosive extratropical cyclone: A case study over the Northwestern Pacific in March 2007](#). *Oceanic and Coastal Sea Research*, 16,

933-944. (IF=0.569)

Wang, S. and Toumi, R. (2016). [On the relationship between hurricane cost and the integrated wind profile](#). *Environmental Research Letters*, 11, 114005. (IF=4.541)

Wang, S., Toumi, R., Czaja, A. and Van Kan, A. (2015). [An analytic model of tropical cyclone wind profiles](#). *Quarterly Journal of the Royal Meteorological Society*, 141, 3018-3029. (IF=2.978)

Li, P., Fu, G., Lu, C., Fu, D., and **Wang, S.** (2012) [The formation mechanism of a spring sea fog event over the yellow sea associated with a low-level jet](#). *Weather and Forecasting*, 27, 1538–1553. (IF= 2.276)

Fu, D., **Wang, S.**, Chen, D., Pang, H. and Li, P. (2012). [Comparison study between observation and simulation for sea fog over the Yellow Sea in May 2009](#). *Oceanic and Coastal Sea Research*, 11, 290-300. (IF=0.569)

MANUSCRIPT
UNDER REVIEW

Wang, S. and Toumi, R.. [An analytic model of tropical cyclone outer size](#). *Monthly Weather Review*. Under review.

Wang, S., Toumi, R., Ye, Q., Ke, Q., Bricker, J., Tian, Z. and Sun, L.. [Is the tropical cyclone surge in Shanghai more sensitive to landfall location or intensity change?](#) *Geophysical Research Letters*. Under review.

Ke, Q., Yin, J., Bricker, J., Buonomo, E., Ye, Q., Visser, P., Dong, G., **Wang, S.**, Tian, Z., Sun, L., Toumi, R. and Jonkman, S.. [Typhoon-induced flood hazard increases under climate change: a case study in Shanghai](#). *Natural Hazards*. Under review.

MANUSCRIPT IN
PREPARATION

Wang, S. and Toumi, R.. [Linking tropical cyclone lifetime maximum to landfall intensity](#). To be submitted.

Wang, S. and Toumi, R.. [Environmental constraints on the lifetime maximum intensity of tropical cyclones](#). To be submitted.

RESEARCH GRANT

European Space Agency, "Big data intelligent mining and coupling analysis of eddy and cyclone", Dragon 5 Cooperation, **Co-I**, 2020-2022

National Natural Science Foundation of China, "Seasonal typhoon activity and the associated risk prediction system—A dynamical downscaling approach", Young Scientist Fellowship, **PI**, 2017-2020

INVITED AND
CONFERENCE
PRESENTATIONS

UCL Institute of Risk and Disaster Reduction, University College London, London: "Estimating the destructive potential of tropical cyclones". Invited talk, Mar. 2019.

The 13th Conference on Mesoscale Convective Systems and High-Impact Weather in East Asia (ICMCS), Naha, Japan: "Impact of dry midlevel air on the tropical cyclone outer circulation". Oral presentation, Mar. 2019.

The 33rd Conference on Hurricanes and Tropical Meteorology (AMS), Florida, USA: "A historical analysis of the mature stage of tropical cyclones". Oral presentation, Apr. 2018.

The 33rd Conference on Hurricanes and Tropical Meteorology (AMS), Florida, USA: "Reduced sensitivity of tropical cyclone intensity and size to sea surface temperature in a radiative-convective equilibrium environment". Poster presentation, Apr. 2018.

The 32nd Conference on Hurricanes and Tropical Meteorology (AMS), San Juan, Puerto Rico: "Hurricane cost is largely controlled by the vertical wind shear". Oral presentation, Apr. 2016.

The Climate Science for Service Partnership (CSSP) China-UK Workshop, Nanjing, China: "Tropical cyclone damage and potential environmental factors". Oral presentation, Nov. 2015.

National Basic Research Program Annual Meeting, Guangzhou, China: "Factors on tropical cyclone destructive potential". Oral presentation, Nov. 2015.

European Geosciences Union Annual meeting, Vienna, Austria: "Factors that influence the size of tropical cyclones". Oral presentation, Apr. 2015.

Korea-China Joint Workshop on Marine Environment Forecasting System for the Yellow Sea and East China Sea, Seoul, South Korea: "Explosive Extra-tropical Cyclogenesis over the Yellow Sea". Oral presentation, Apr. 2012.

TEACHING
EXPERIENCE

Instructor First-year postgraduate lectures (Climate Modelling), Imperial College, 2019-

Demonstrator First-year undergraduate physics laboratory, Imperial College, 2014-2017

Guest Lecturer Graduate course (Tropical Ocean-Atmosphere Interaction), Ocean University of China , 2012

SUPERVISING
EXPERIENCE

2020, Morgane Lardennois, M.Sc., "Investigating the shape of tropical cyclone eye"

2020, Rosemary Colaert, M.Sc., "Rapid growth of tropical cyclone size"

2019, Theo Rashid, M.Sci., "Changes in the intensity life-cycle of tropical cyclones"

2019, Henry Throp, M.Sci., "Typhoon size life cycle analysis"

2018, Lin Qiao, Final B.Sc. project, "Investigating tropical cyclone's damage and its physical properties"

2016, Qiaoqiao Fu, M.Sc. project, "Temporal and spatial influence on the physics properties of typhoons"

2016, Matthew Castro, physics 1st year undergraduate project, "A simple mountain wave numerical simulation with Python"

2016, Jon Vanderpuye, physics 1st year undergraduate project, "A simple mountain wave numerical simulation with Matlab"

2016, Theo Rashid, physics 1st year undergraduate project, "Idealised steady-state tropical cyclone modelling in Python"

2016, Henry Throp, physics 1st year undergraduate project, "Tropical cyclone and sea surface temperature"

2015, Binsheng Chen, physics 1st year undergraduate project, "Mountain wave modelling: vertical propagating division"

2015, Duan Yi Ong, physics 1st year undergraduate project, "Mountain wave modelling: horizontal propagating division"

HONORS AND
AWARDS

2016 Postgraduate Research Symposium Prize for the best overall performance (Imperial College London, UK)

2012 Gold Medal in the National Competition for Innovation in Natural Sciences (Ministry of

Education, China)

2013 and 2008 National scholarship (Ministry of Education, China)

2011 The Pace Setters Award (awarded to the top eight undergraduates of all disciplines at the Ocean University of China)

PROFESSIONAL
SERVICE

Reviewer for *Journal of Geophysical Research*, *Journal of Hydrometeorology*, *Environmental Research Letters*, *Environmental Research Communication*, *International Journal of Climatology*, *Journal of Meteorological Research*, *Atmosphere*, *Advances in Space Research*

PROGRAMMING
SKILLS

Python, FORTRAN, Shell, Matlab, GrADS, R