CURRICULUM VITAE

XIAOMING SHI

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Academic Qualifications

2013 – 2015	Ph.D. Atmospheric Sciences	University of Washington, USA
	Advisor: Dale Durran	
	Dissertation: *Studies of Climate Dynamics with Innovative Global-Model Simulations*	
2010 – 2013	M.S. Atmospheric Sciences	University of Washington, USA
	Advisor: Dale Durran	
	Thesis: *Estimating the Response of Mid-latitude Orographic Precipitation to Global Warming*	
2005 – 2009	B.S. Atmospheric Sciences	Lanzhou University, China

Previous Academic Positions

2015 Sep – 2018 Aug Postdoctoral Scholar
Department of Civil and Environmental Engineering
University of California, Berkeley, USA
Advisor: Fotini Katopodes Chow & Robert L. Street

Present Academic Positions

2024 July – present Associate Professor
2018 Sep – 2024 June Assistant Professor
Division of Environment and Sustainability
The Hong Kong University of Science and Technology
Hong Kong S.A.R.

Selected Research Projects

RGC HKUST- 16309025	Developing a Scale-Adaptive Cumulus Parameterization for Simulating Tropical Convection Across Scales (2026-2028)	PI
RGC HKUST-16307323	Estimating Tropical Cyclone Changes Due to Global Warming with Smart Dynamical Downscaling and Convection-Permitting Simulations (2024-2026)	PI
RGC HKUST-16301322	Large Eddy Simulation Code in JAX: An Accelerated and Differentiable Atmospheric Model for Turbulence Parameterization Development (2023-2025)	PI
QNLM QNLM20SC01-F	The Impact of Wave-State Dependent Sea-Surface flux on the Regional Climate of East Asia in Climate System	

	Simulations (2022-2024)	PI
RGC HKUST-16301721	The Representation of Turbulence and Convection in the Gray Zones of Orographic Precipitation (2022-2024)	PI
RGC HKUST-26305720	Quantifying and Understanding the Response of Extreme Convective Rainfall to Global Warming (2020-2023)	PI

Selected Publications [∗ *supervised students and postdocs*]

[1] Wang*, Y., H. Li, X. Shi, J. Fung, 2025: Assessing the Impact of Cumulus Convection and Turbulence Parameterizations on Typhoon Precipitation Forecast, *Geophys. Res. Lett.*, 52, e2024GL112075.

[2] Shi, X., Y. Liu, J. Chen*, H. Chen*, Y. Wang*, Z. Lu, R.Q. Wang, J. Fung, C. W.W. Ng, 2024: Escalating Tropical Cyclone Precipitation Extremes and Landslide Hazards in South China under Global Warming. *npj Climate and Atmospheric Science*, 7, 107.

[3] Chen*, J., and X. Shi, 2023: Quantifying Global Warming Response of the Orographic Precipitation in a Typhoon Environment with Large-Eddy Simulations. *J. Climate*, 36, 6951–6966.

[4] Shi, X., Fan*, Y., 2021: Modulation of the bifurcation in radiative-convective equilibrium by gray-zone cloud and turbulence parameterizations. *J. Adv. Model. Earth Syst*., 13, e2021MS002632. https://doi.org/10.1029/2021MS002632.

[5] Fan*, Y., Chung*, Y. T., Shi, X., 2021: The Essential Role of Cloud-Radiation Interaction in Nonrotating Convective Self-Aggregation., *Geophys. Res. Lett*., 48, e2021GL095102. https://doi.org/10.1029/2021GL095102

[6] Shi, X., 2020: Enabling Smart Dynamical Downscaling of Extreme Precipitation Events With Machine Learning, *Geophys. Res. Lett*., 47, e2020GL090309, https://doi.org/10.1029/2020GL090309.

[7] Shi, X., H. L. Hagen*, F. K. Chow, R. L. Street, G. H. Bryan, 2018: Large-Eddy Simulation of Stratocumulus-Capped Boundary Layer with Explicit Filtering and Reconstruction Turbulence Modeling. *J. Atmos. Sci*., 75, 611–637.

[8] Shi, X. & D. R. Durran, 2016: Sensitivities of Extreme Precipitation to Global Warming Are Lower over Mountains than over Oceans and Plains. *J. Climate*, 4779-4791.

[9] Shi, X. & D. R. Durran, 2015: Estimating the Response of Extreme Precipitation Over Mid-latitude Mountains to Global Warming. *J. Climate*, 28, 4246-4262.

[10] Shi, X. & C. S. Bretherton, 2014: Large Scale Character of an Atmosphere in Rotating Radiative-Convective Equilibrium. *J. Adv. Model. Earth Syst*., 06.

Other Information

- Heywood Young Scientist Award (2022)
- Executive Committee, Hong Kong Meteorology Society (2021-)
- Scientific Steering Committee, World Meteorological Society's Aviation Research and Development Project Phase 2 (AvRDP2) (2022-2025)