Kelly Yi-Chun Huang

yhuang68@uh.edu
atlas-uh.github.io

Assistant Professor in Mechanical Engineering, University of Houston

Jul 2021	Ph.D.	Mechanical and Aerospace Engineering	Princeton University
Jan 2018	M.A.	Mechanical and Aerospace Engineering	Princeton University
Dec 2015	B.S.	Mechanical Engineering	Cornell University

Research Interests

Environmental Fluid Mechanics ▪ Turbulence ▪ Sensing Techniques ▪ Surface-Atmosphere Interactions ▪ Boundary-Layer Meteorology ▪ Experiments

Professional Appointments

2018 — 2019	Postdoctoral Researcher (Supervisor: Prof. Harindra J. S. Fernando)	*University of Notre Dame*

Honors and Awards

2020	Engineering Council's Excellence in Teaching Award	*Princeton*
2019	The Luigi Crocco Award for Teaching Excellence	*Princeton*
2017	National Defense Science and Engineering Graduate Fellowship	*DoD*
2016	Francis Robbins Upton Fellowship in Engineering	*Princeton*
2015	Undergraduate Student of the Year	*Cornell Diversity Programs in Engineering*

Invited Presentations

2023 — National Taiwan University, Taiwan — Hydrotech Research Institute
Measuring, Modeling, and Mimicking Atmospheric Turbulent Processes.

2023 — National Central University, Taiwan — Department of Civil Engineering
Measuring, Modeling, and Mimicking Atmospheric Turbulent Processes.

2021 — University of Notre Dame, USA — Environmental Fluid Dynamics Seminar
Experimental Methods for Understanding Turbulence in the Lower Atmosphere.

2021 — University of California, Davis, USA — Environmental Dynamics Lab Seminar
Experimental Methods for Studying Turbulence in the Lower Atmosphere.

2020 — Cooper Union, USA — Albert Nerken School of Engineering Invited Lecture
From Mosquitos to Weather Models — Understanding Turbulence in the Lower Atmosphere.

Publications

In Preparation

K. Y. Huang, T. J. Hintz, and H. J. S. Fernando, "Turbulent equilibrium radius in fog droplet formation," (in prep).

T. J. Hintz, K. Y. Huang, S. W. Hoch, J. Ruiz-Plancarte, and H. J. S. Fernando, "A mechanism for coastal fog genesis at evening transition," *Quarterly Journal of the Royal Meteorological Society* (under review).

Peer-Reviewed

K. Y. Huang, G. G. Katul, T. J. Hintz, J. Ruiz-Plancarte, and H. J. S. Fernando, "Fog intermittency and critical behavior", *Atmosphere* (2023).

H. J. S. Fernando, S. Wang, K. Y. Huang, and E. Creegan, "Fog-laden density staircases in marine atmospheric boundary layer", *Environmental Fluid Mechanics* (2023).

K. Y. Huang, M. K. Fu, C. P. Byers, A. D. Bragg, and G. G. Katul, "Logarithmic scaling of higher-order temperature moments in the atmospheric surface layer", *International Journal of Heat and Fluid Flow.*

K. Y. Huang and G. G. Katul, "Profiles of high-order moments of longitudinal velocity explained by the random sweeping decorrelation hypothesis", *Physical Review Fluids* (2022).

K. Y. Huang, C. E. Brunner, M. K. Fu, K. Kokmanian, T. Morrison, A. O. Perelet, M. Calaf, E. Pardyjak, and M. Hultmark, "Investigation of the Atmospheric Surface Layer Using a Novel High-resolution Sensor Array", *Experiments in Fluids* (2021).

K. Y. Huang, G. G. Katul, and M. Hultmark, "Velocity and temperature dissimilarity in the surface layer uncovered by the telegraph approximation", *Boundary-Layer Meteorology* (2021).

Conference Proceedings

K. Y. Huang, M. K. Fu, C. P. Byers, and G. G. Katul, "Logarithmic scaling of higher-order temperature moments in the atmospheric surface layer", *12th Int. Symp. on Turbulence and Shear Flow Phenomena, Osaka, Japan* (2022).

Teaching

Princeton University

2017 — 2021 Graduate Coordinator for the McGraw Learning and Tutoring Center

Assistant in Instruction

- Fall 2019 MAE 305/MAT 391 – Mathematics in Engineering I
- Spring 2019 MAE 222 – Introduction to Fluid Mechanics
- Spring 2018 MAE 224 – Integrated Engineering Science Laboratory
- Fall 2017 MAE 335 – Fluid Dynamics

Guest Lecturer

- Fall 2022 MAE 551 — Fluid Dynamics
- Spring 2022 MAE 553 — Turbulence

Cornell University

Undergraduate Teaching Assistant

- Fall 2015 MAE 3230 – Introduction to Fluid Mechanics
- Fall 2015 MAE 6510 – Advanced Heat Transfer
- Spring 2015 MAE 2250 – Mechanical Synthesis
- Fall 2014 ENGRD 2020 – Statics and Mechanics of Solids

University of Notre Dame

Guest Lecturer

- Fall 2021 & 2022 CE/AME 40465/60465 — Mechanics of Environmental Motions
- Fall 2021 — Spr 2023 CE 62400 — Environmental Fluid Dynamics Practicum
- Spring 2023 CE 60430 — Fundamentals of Turbulence Theory