

Faculty Name:

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Lab:

Environmental Flow Physics Laboratory

Project Title:

Atmospheric Sensing for Urban Sustainability

Description:

By 2050, a staggering 68% of the global population will reside in cities. To foster cities that will not only accommodate such vast numbers but also ensure a secure, healthful future for their inhabitants, we must focus on constructing urban areas that are sustainable, equitable, and resilient against extreme natural events. To contribute to this vision, the Environmental Flow Physics Laboratory has recently equipped itself with cutting-edge meteorological instrumentation, including meteorological stations, wind lidars, and drone-based sensing devices. This new collection of instruments will allow us to take in-situ atmospheric measurements, capturing quantities such as wind speed, temperature, relative humidity, airborne particulate matter, and incoming solar radiation. The mission behind this initiative, generously sponsored by the US Army, is to enhance our comprehension and ability to model heat, moisture, and pollution transfer between the urban surface and the atmosphere.

We plan to deploy a network of weather stations (similar to the ones shown in the figure above) at selected sites in New York State and use measurements to develop new theories and numerical models for the aforementioned processes.

To push this project to fruition, we're opening three Summer research positions. These roles will involve supporting the field deployment and/or developing algorithms to interpret the data. Participants in this project will gain invaluable experience in sensing technology, the physics of fluids, field deployments, and computational methods.

Location of Research:

On Site

of hrs/week:

35

Department/Program:

Civil Engineering & Engineering Mechanics

Eligibility:

BS, First Year, BS, Second Year, BS, Third Year, BS, Fourth Year

To apply, please contact:

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