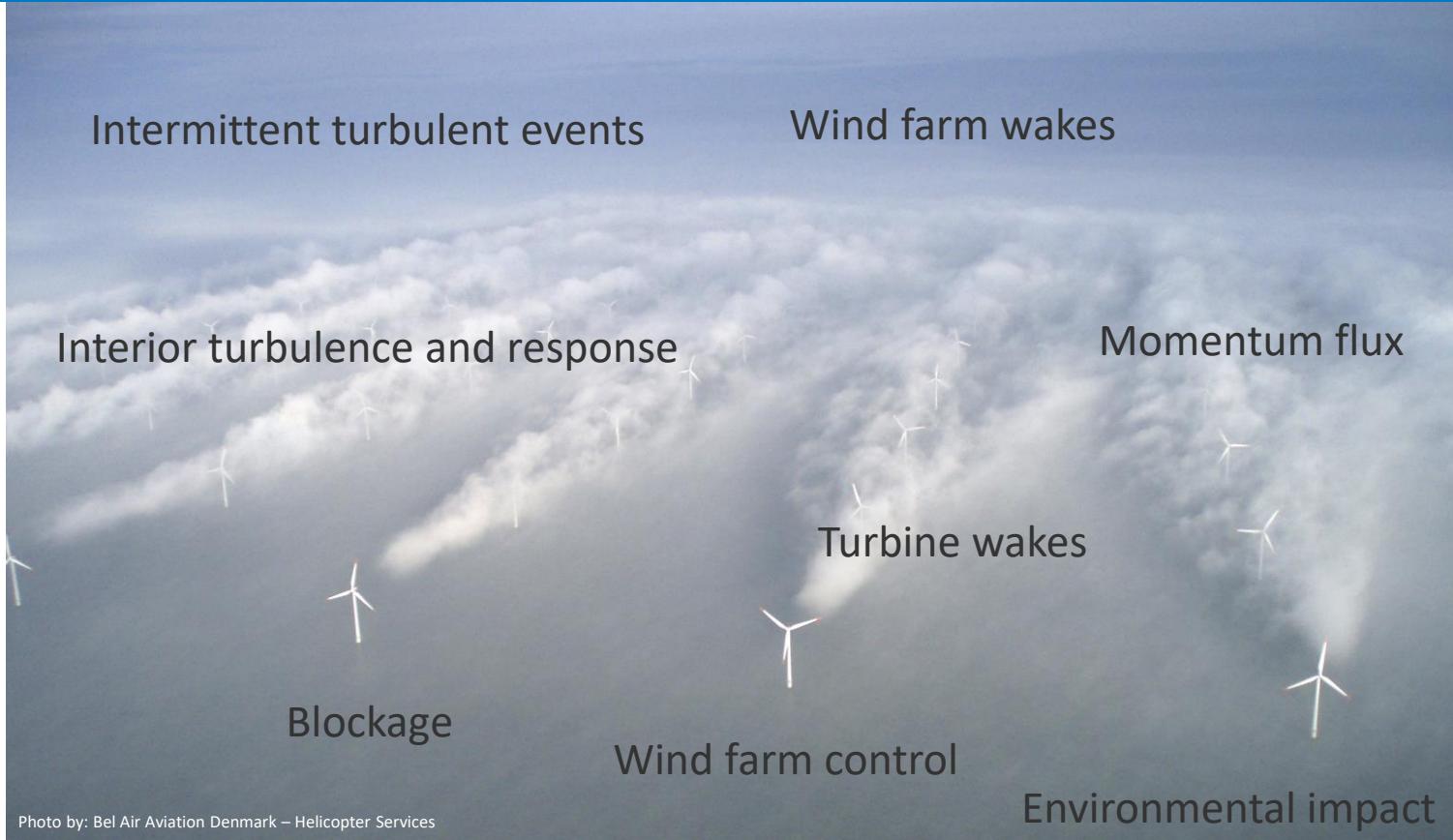




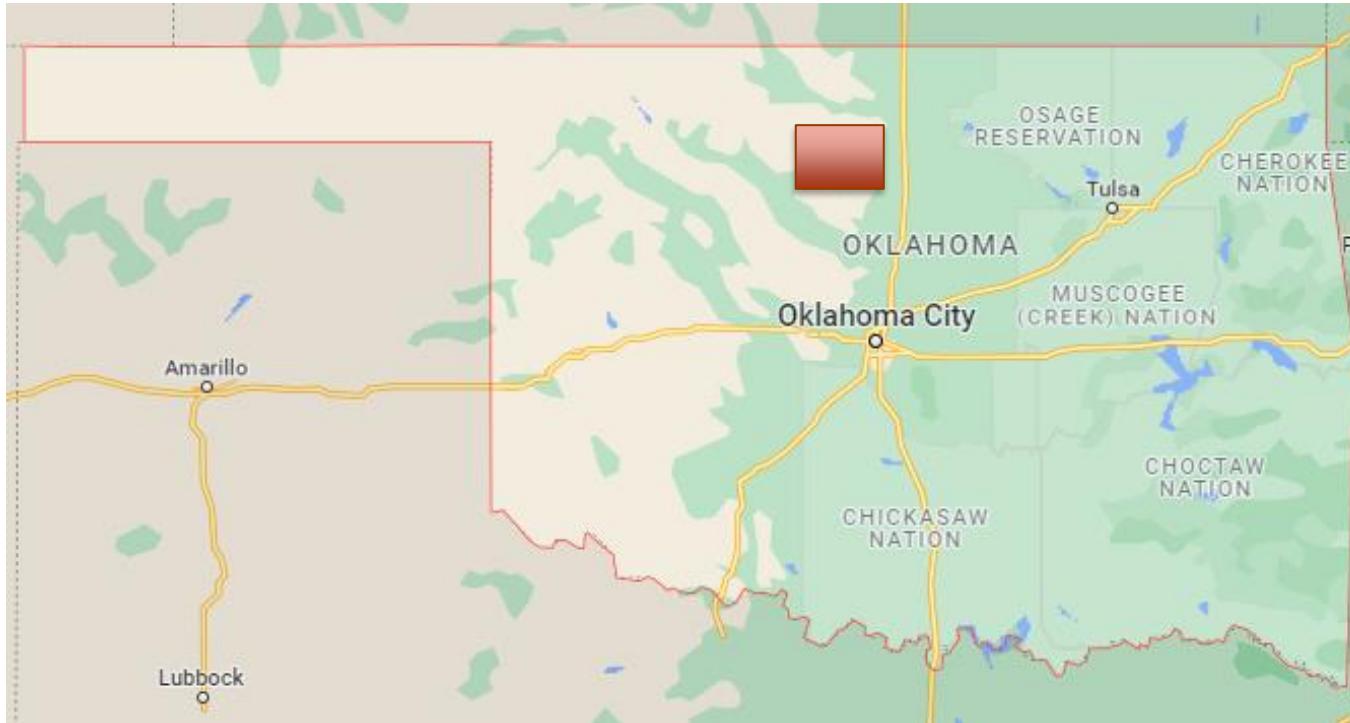
Overview of the American Wake Experiment (AWAKEN)

Patrick Moriarty
August 9, 2023

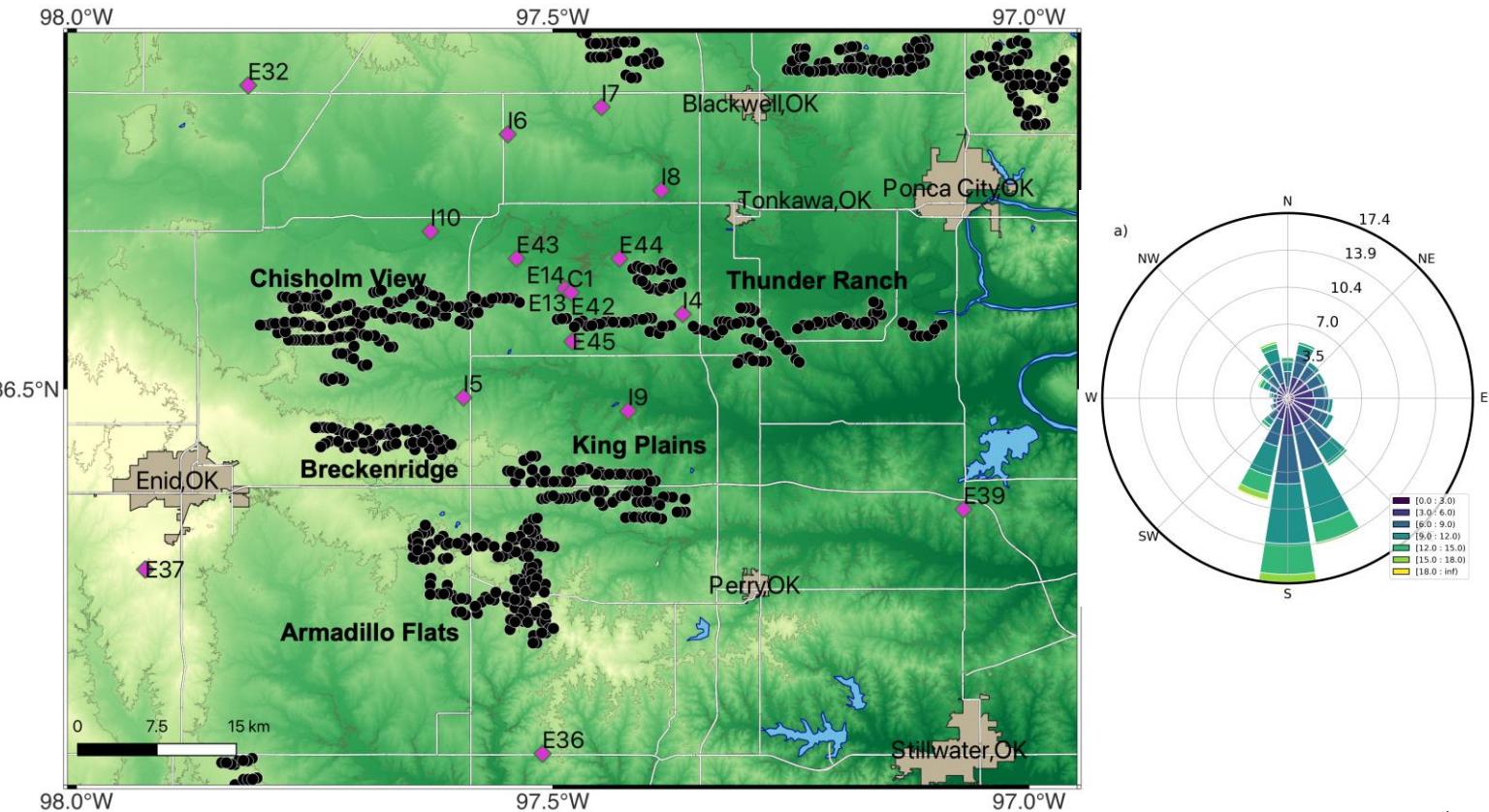
Wind Farm Atmosphere Interactions



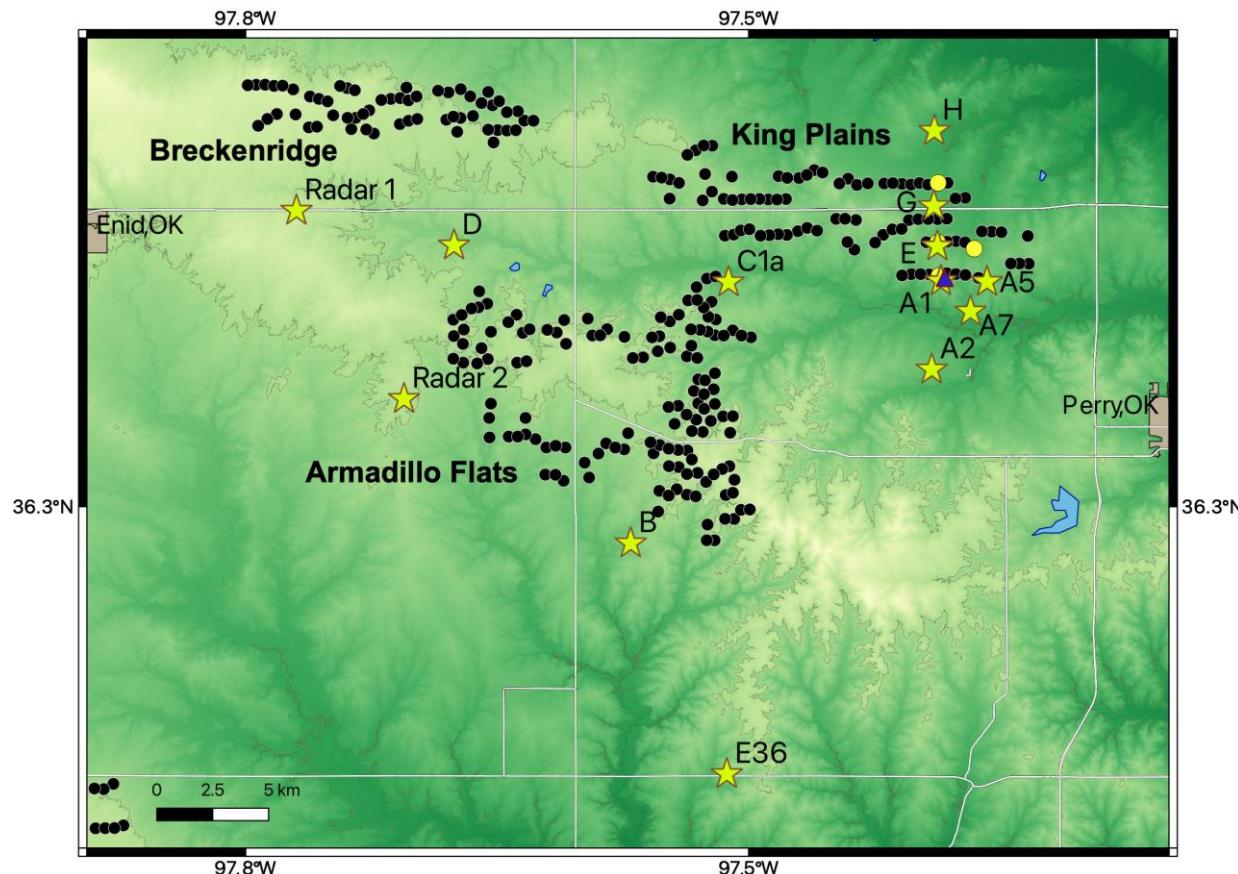
Location



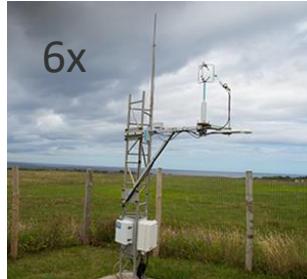
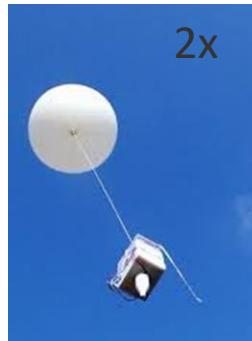
DOE Atmospheric and Radiation Measurement Program (ARM)



DOE AWAKEN Instrument Sites

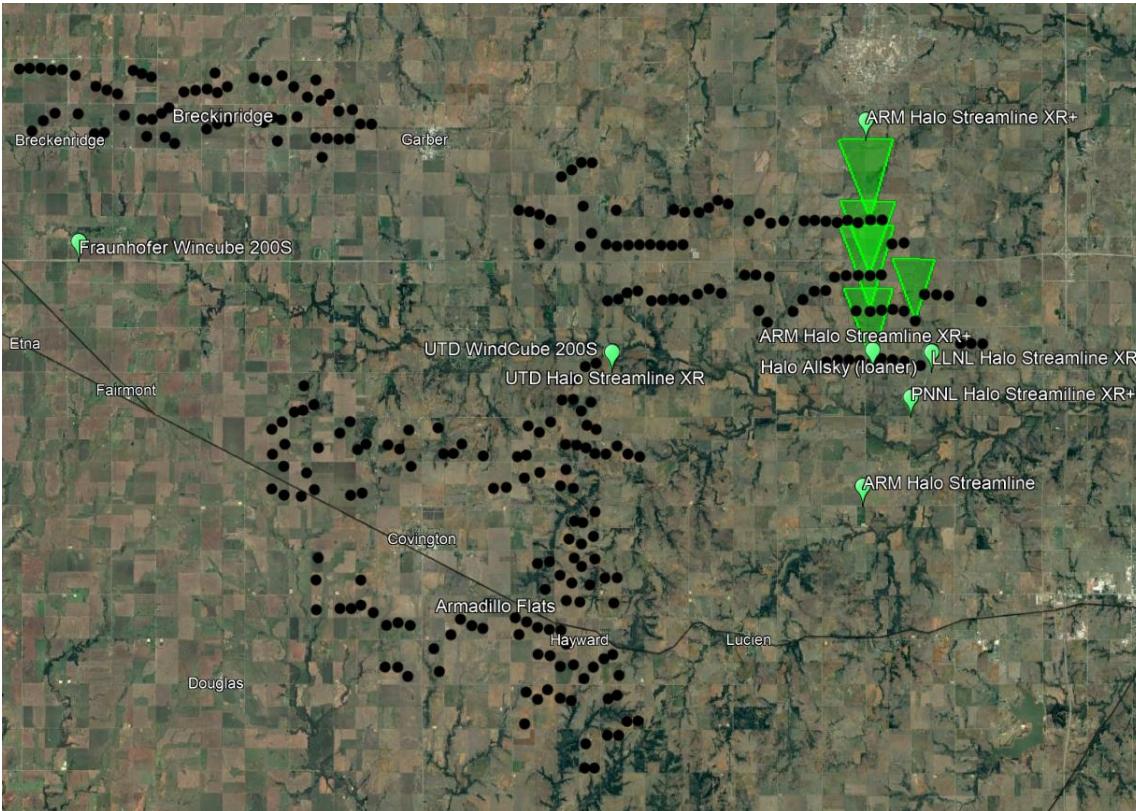


Instruments



- > 50 instrument systems
- SCADA data from 558 wind turbines
- 3 highly instrumented turbines

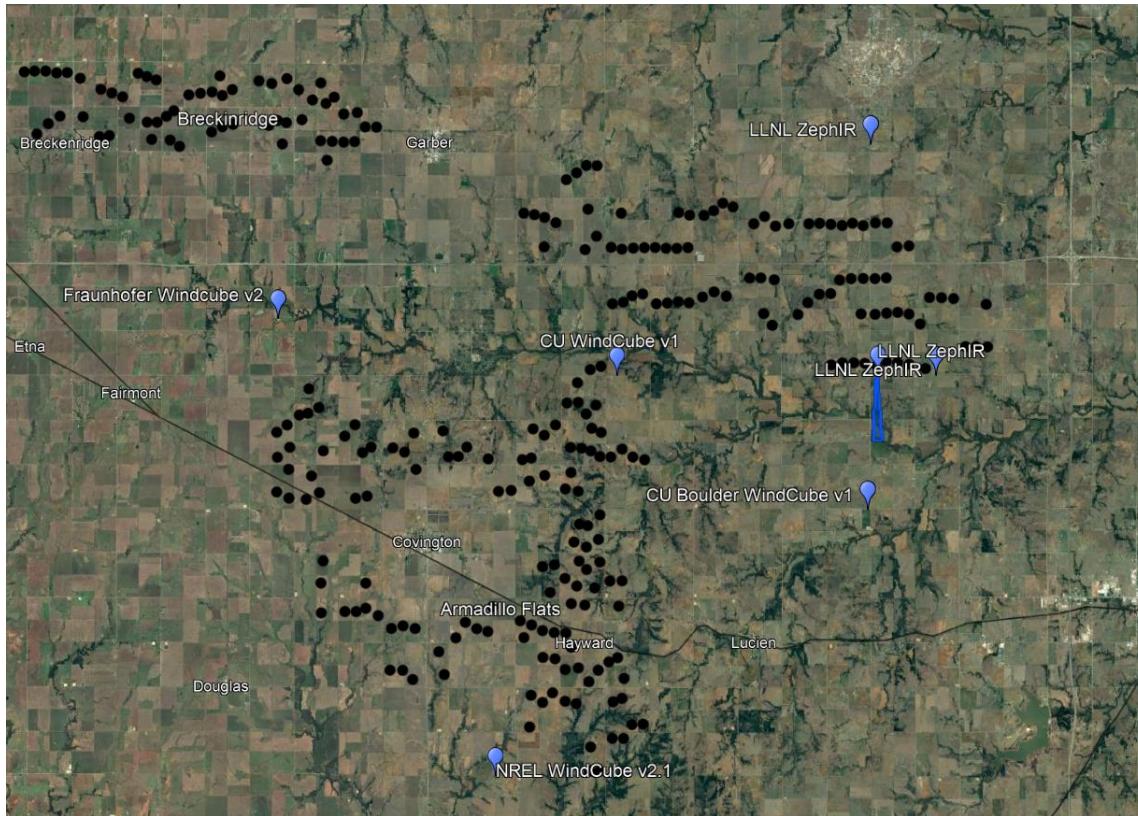
Scanning Lidars



- 14 scanning lidars



Profiling Lidars



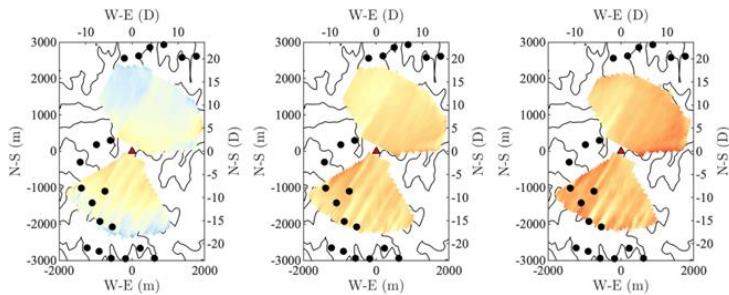
- 8 profiling/fixed beam lidars



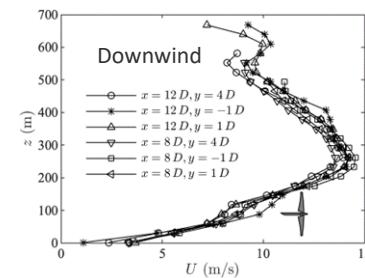
Turbine Wake Observations



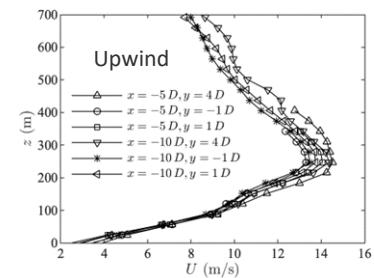
Site C1_a near King Plains with two UT Dallas scanning lidars



Horizontal (PPI) lidar scans



Vertical velocity profiles



International Team

Department of Energy Laboratories



...plus many others

...project partners





A large, semi-transparent blue rectangular overlay is positioned in the upper right quadrant of the image. It contains the text "Thank You" in white, bold, sans-serif font at the top, and the website address "www.nrel.gov" in white, bold, sans-serif font below it.

Thank You

www.nrel.gov

