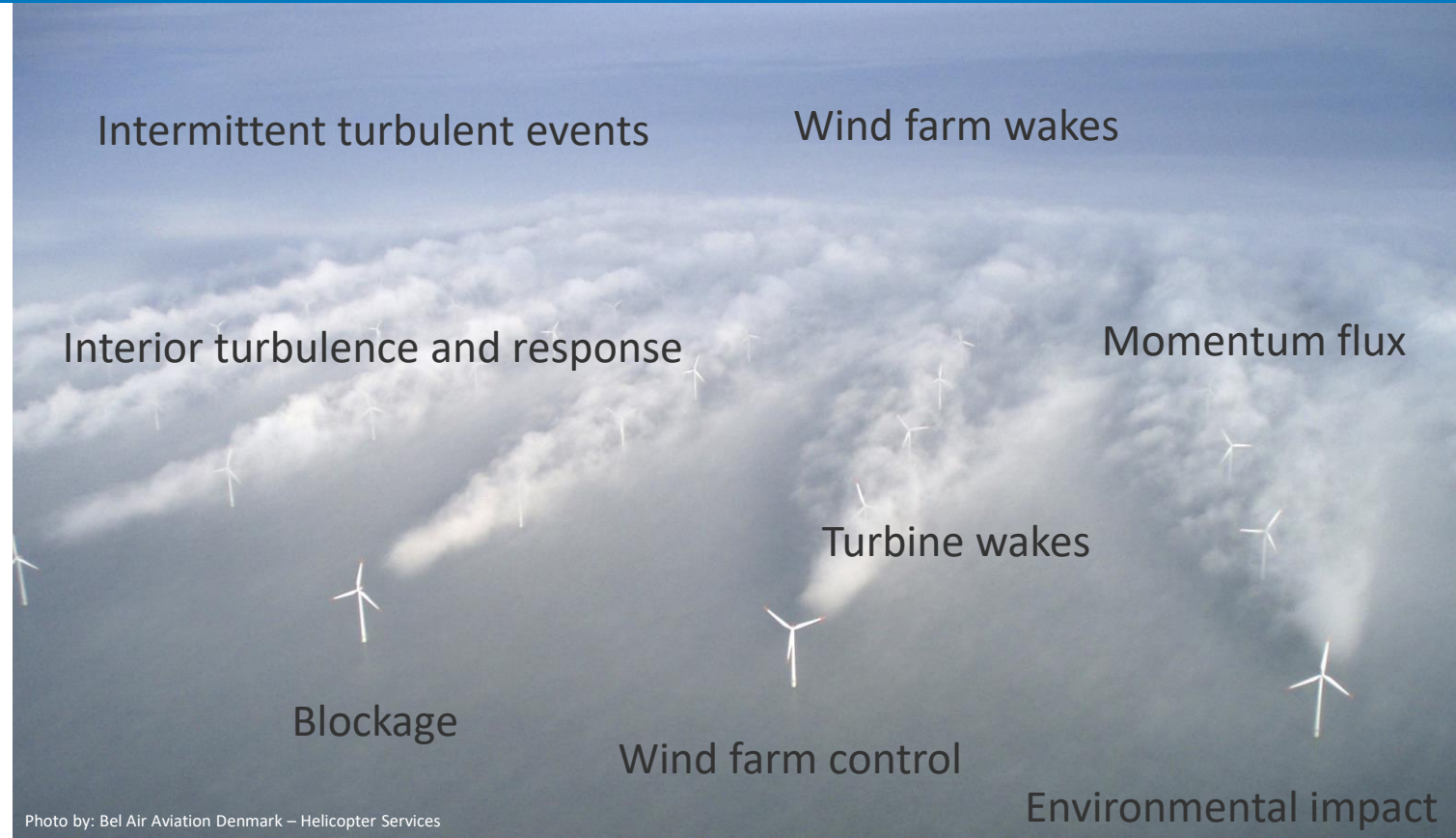


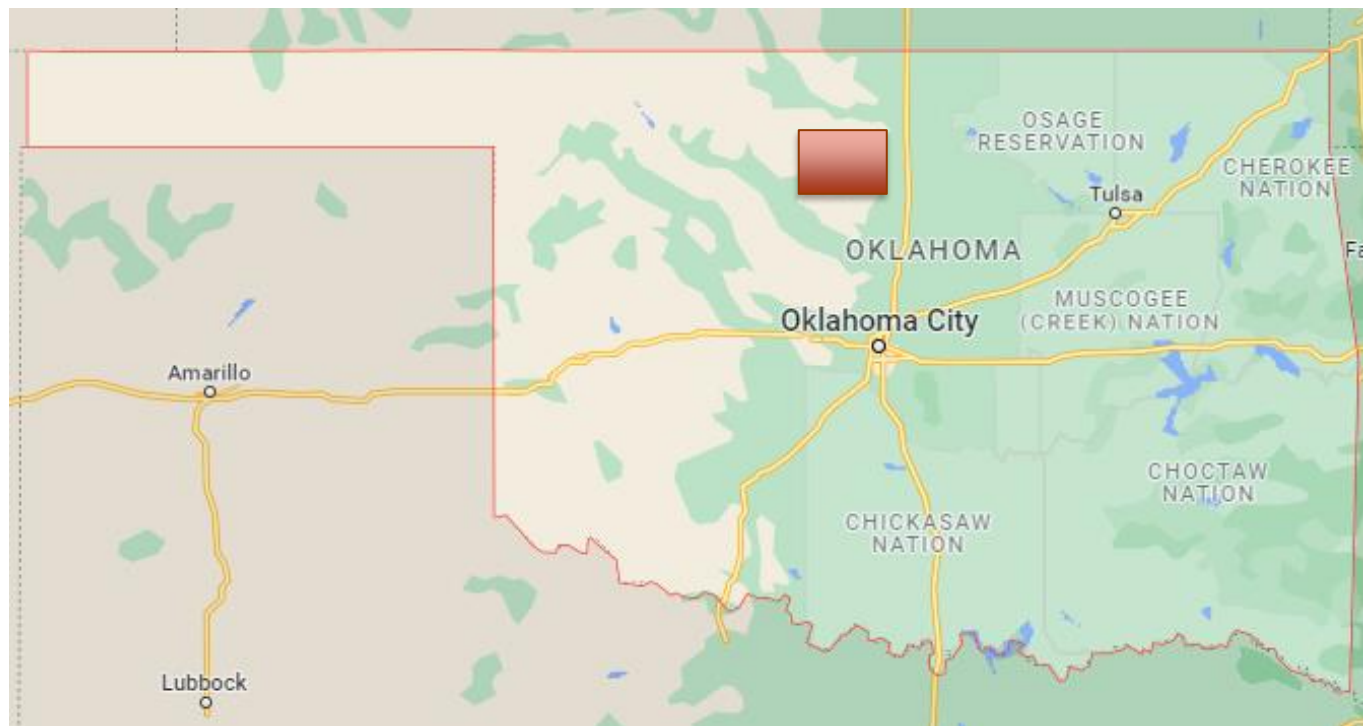
Overview of the American Wake Experiment (AWAKEN)

Patrick Moriarty
August 9, 2023

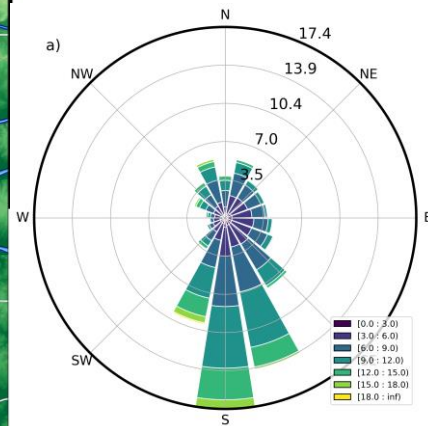
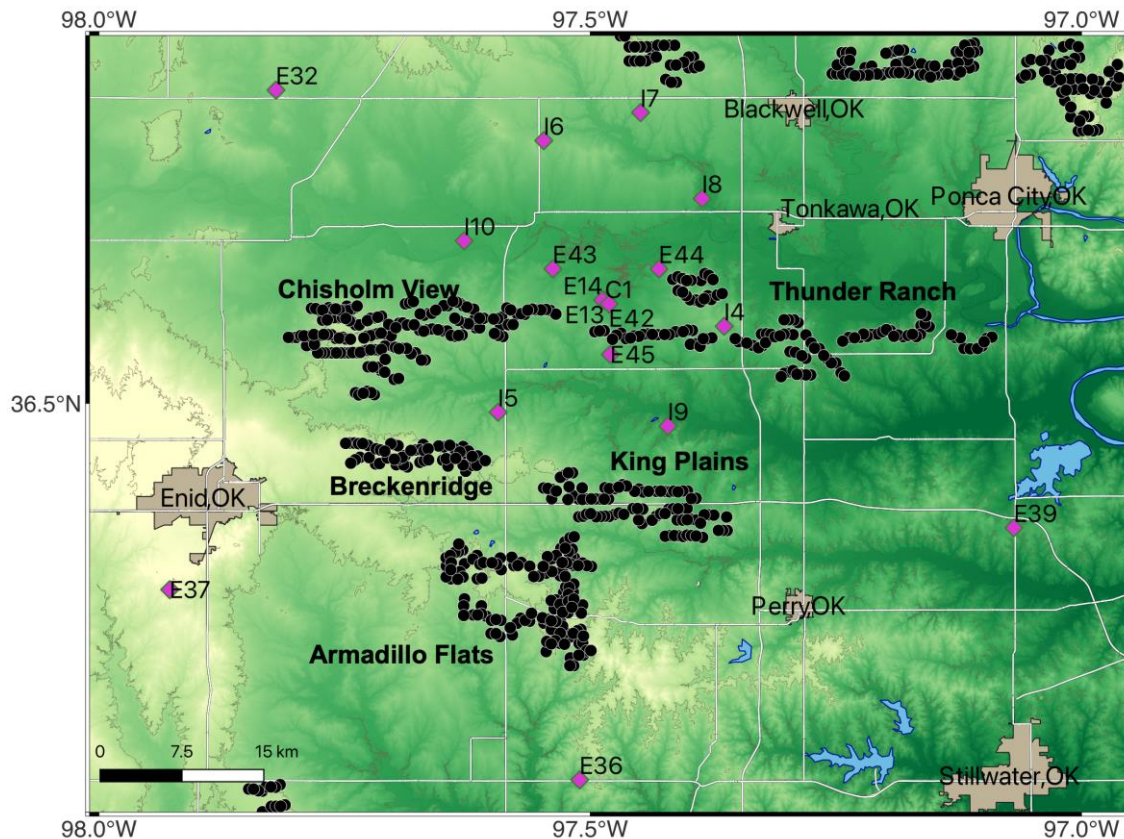
Wind Farm Atmosphere Interactions



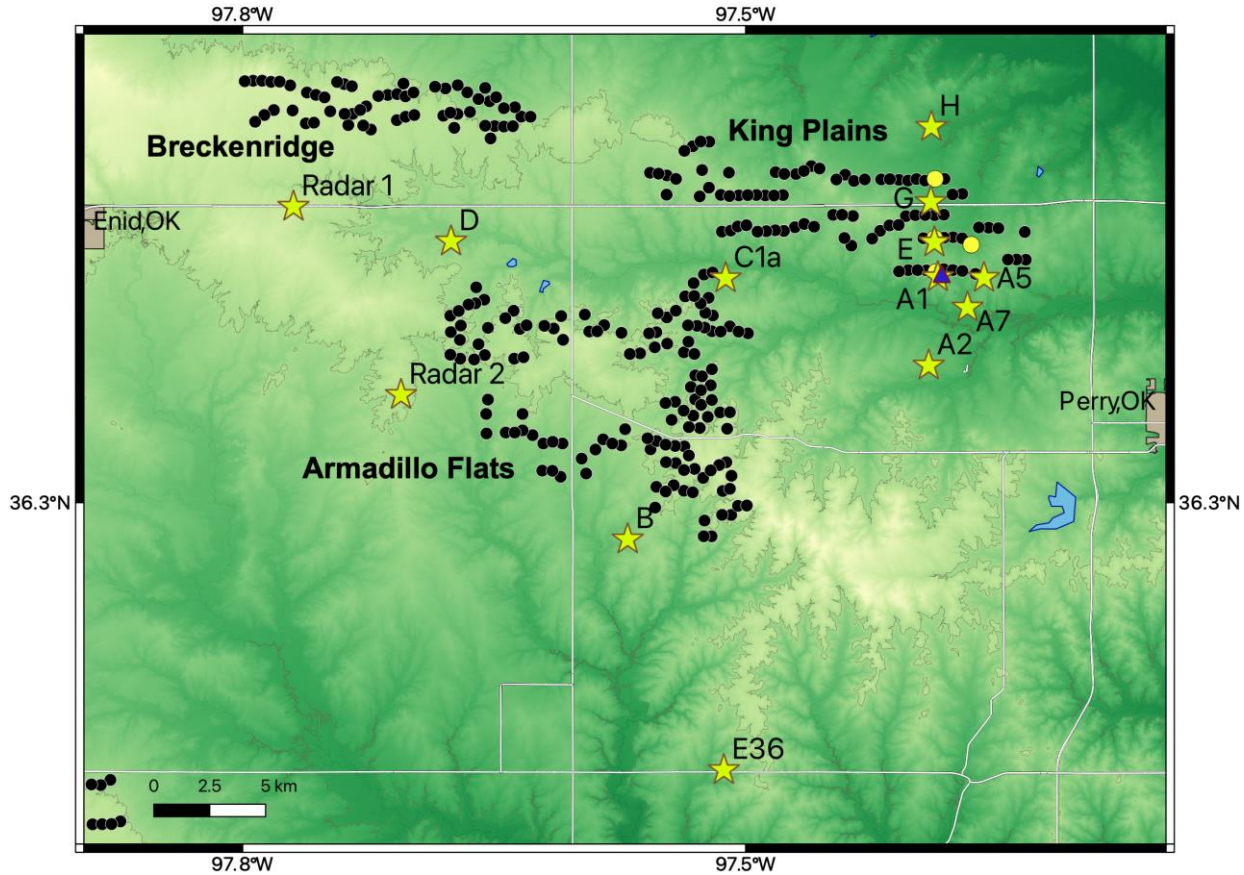
Location



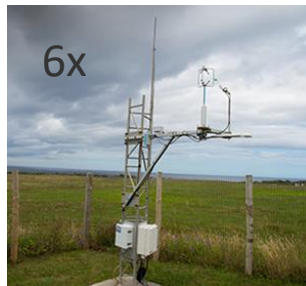
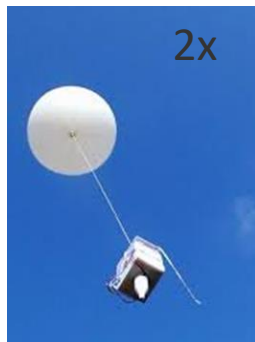
DOE Atmospheric and Radiation Measurement Program (ARM)



DOE AWAKEN Instrument Sites

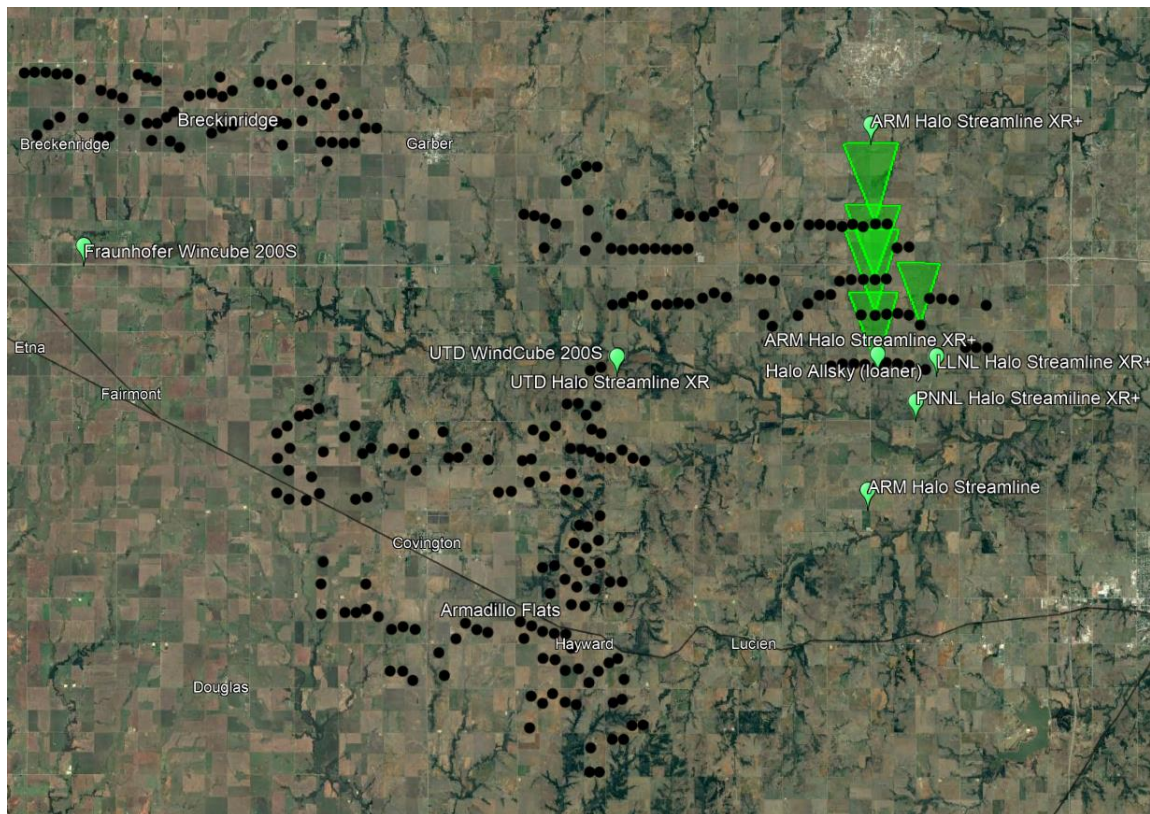


Instruments



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

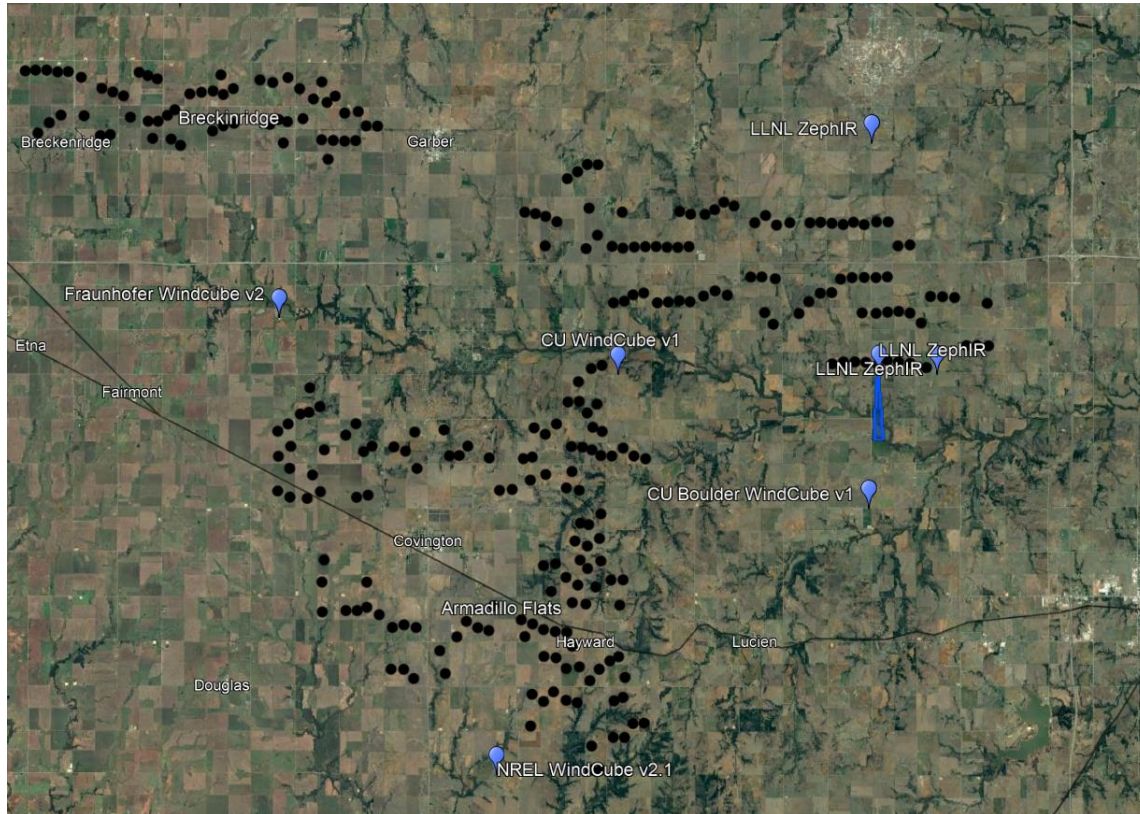
Scanning Lidars



- 14 scanning lidars



Profiling Lidars



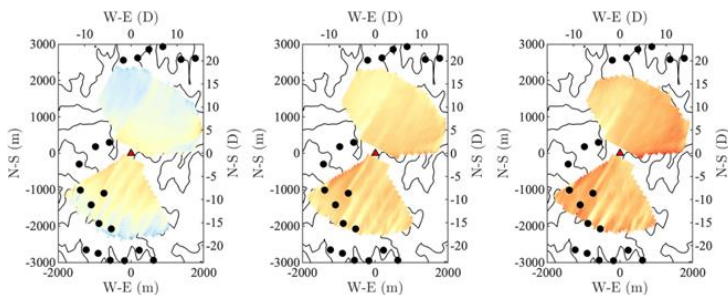
- 8 profiling/fixed beam lidars



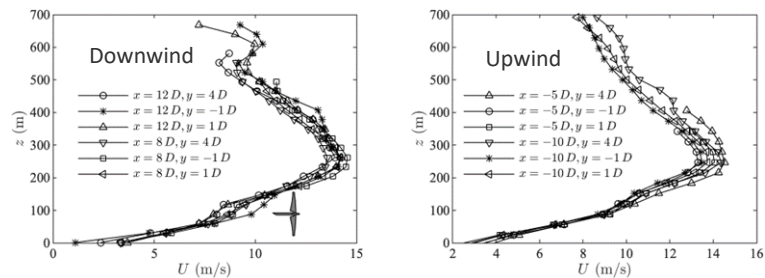
Turbine Wake Observations



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



...project partners



Windscape AI



Fraunhofer



...plus many others



Thank You

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