

# Physics Department Seminar

11 am March 1, Science Building Room 250



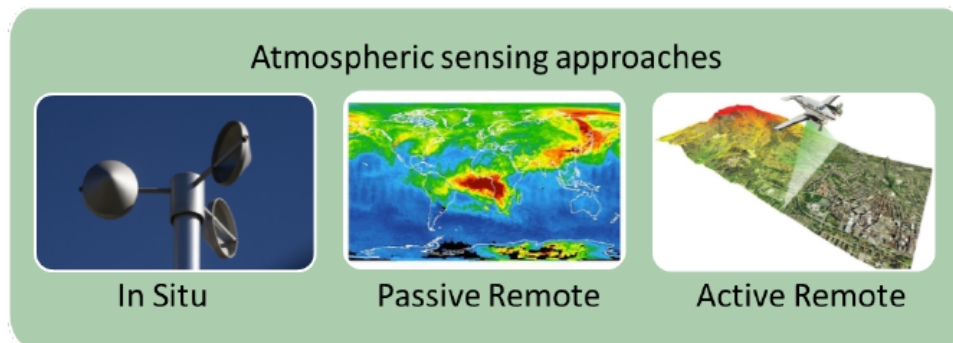
Zoom link

## Touching the Wind:

An overview of the Physics, Engineering, and Atmospheric Science in Doppler Wind Lidar

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In-situ and passive, space-based instruments provide the bulk of observations used in atmospheric studies and weather forecasting, while less-common active sensing systems (i.e., radars and lidars) provide unique observations that anchor the others. Lidars send pulses of light to interact with the atmosphere, and the light that scatters back from each layer carries information about that layer - such as the quantity of aerosols present, water vapor content, and/or wind speed. Successful design, build, and

application of these unique systems requires taking a "mission systems engineering" approach, with knowledge of physics, engineering, and atmospheric science. In this seminar we will touch on some important aspects of atmospheric science that are enhanced by lidar observations, briefly review lidar fundamentals, and then explore aspects of the systems and subsystems engineering it takes to build and use lidars in atmospheric studies, with a focus on Doppler wind lidar (DWL) systems for measuring wind speed.