A new approach to characterize coherent structures in the atmospheric surface layer

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“Exploring coherent structures using dual-Doppler lidar systems”

**The Importance of Coherent Structures in Atmospheric Turbulence**

- **LES with background wind**
- **LES with no background wind**

**Model-based Feasibility Studies**

- LES Modell
- Doppler Lidar Simulator
- Virtual Doppler Lidar Measurements

**Experimental Approach**

Implementation of a Dual Doppler System, which is able to measure:
- at every point in the upper hemisphere in a radius of ~ 10 km
- highly synchronized
- with real-time adaption to atmospheric conditions