

Investigation of backscatter/wind correlations using an airborne 2-um coherent Doppler wind lidar

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Abstract

As we plan for a future space-based wind lidar, there are several data product issues that are only resolvable with airborne downward scanning lidars. The US Navy has developed an airborne coherent Doppler lidar that allow us to perform a number of experiments to address some of these issues. During field programs in 2002 and 2003, flights over the ocean near Monterey, California revealed the frequent existence of organized circulations that contained correlations between the aerosol backscatter and the variations in the wind field. This paper discusses the instrument and some of the data that were collected in the presence of organized large eddies in the marine boundary layer.