

In-flight Visualization of Airborne Doppler Wind Lidar Data Using KML and Google Earth

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Abstract

The Keyhole Markup Language (KML) and Google Earth (GE) are utilized together for real-time in-flight visualization of wind, aerosol and turbulence data taken by an airborne Doppler Wind Lidar (DWL). Among the DWL products that can be displayed within GE are vertical profiles, cross-sections, and raster volume scans. External user interfaces are added to enhance GE capabilities and usability in the airborne environment. Additional information including gridded mesoscale model output is also superimposed in GE for comparison studies and flight experiment planning. The system architecture supports real-time feedback for in-flight experiment plan modification, and reprogramming of the scanning DWL sampling pattern. Various DWL products are demonstrated in post-flight analysis mode using GE for several topographic environments.

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