Doppler Lidar Wind Measurements Around Hurricane Maria and Hurricane Lane during NOAA Hurricane Reconnaissance Programs

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Introduction

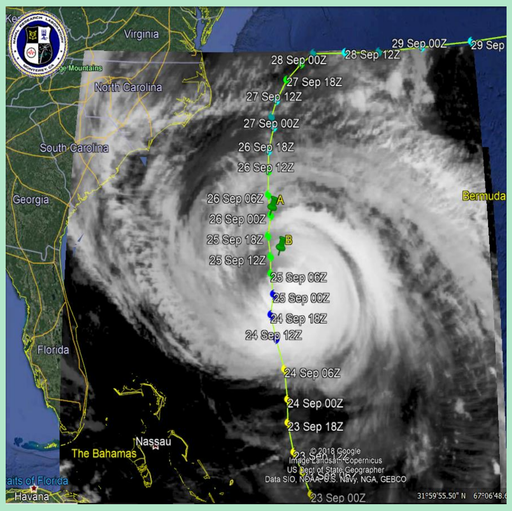
Although there are still issues such as cost, size and availability, after over thirty-five years of development, the Airborne Doppler Wind Lidar (ADWL) is now mature enough to be called operational. Over the past fifteen years, Simpson Weather Associates (SWA) has participated in numerous ADWL missions and field campaigns that have allowed us to measure and investigate the 3-dimensional wind circulations of the lower troposphere and planetary boundary layer (PBL) and to compare with other observations (Profilers, dropsondes). In 2017 and 2018, the ADWL was flown on the NOAA Hurricane Reconnaissance P3 aircraft making DWL wind profile measurements around Hurricane Maria and Hurricane Lane, respectively.

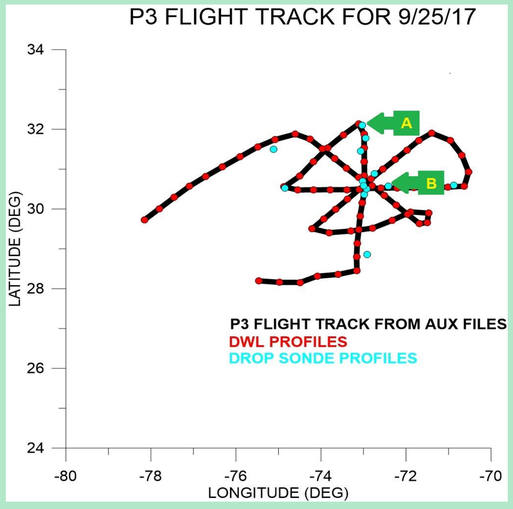
Airborne Doppler Lidar on the P3

The ADWL was successfully operated on a NOAA-P3 aircraft to measure winds in the lower atmosphere environment and near the center of a hurricane

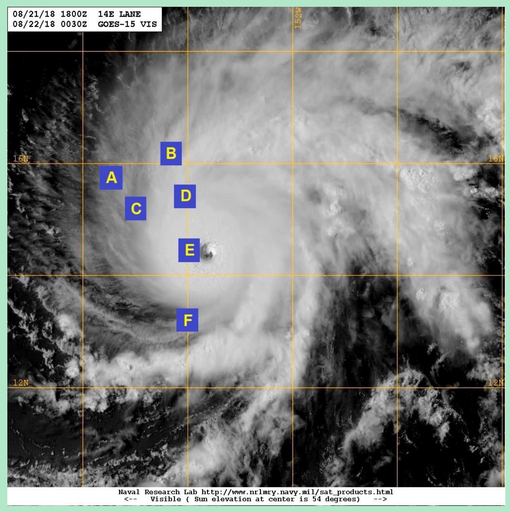
1.6 um coherent CTI wind Tracer (LM)
Side mounter 10 cm bi-axis scanner (NASA LaRC)

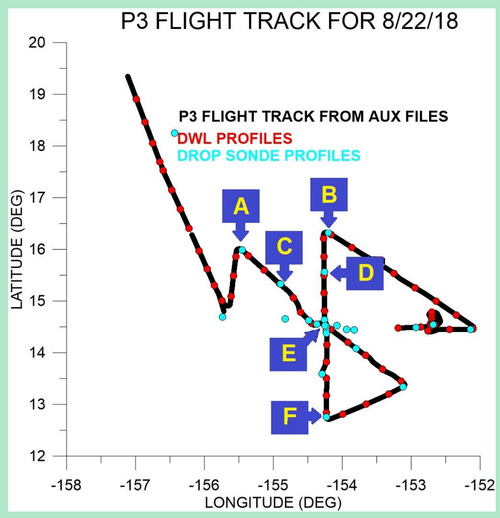
P3-DWL Hurricane Maria Investigation 9/17-25/17

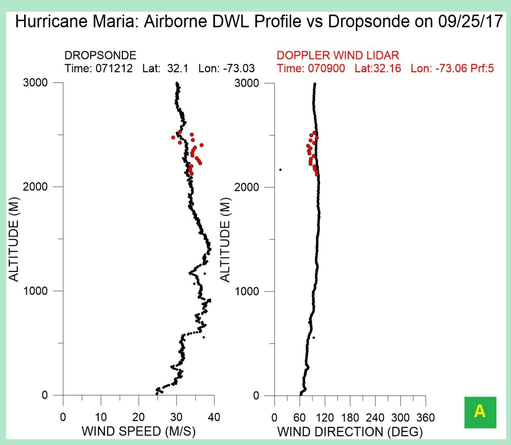


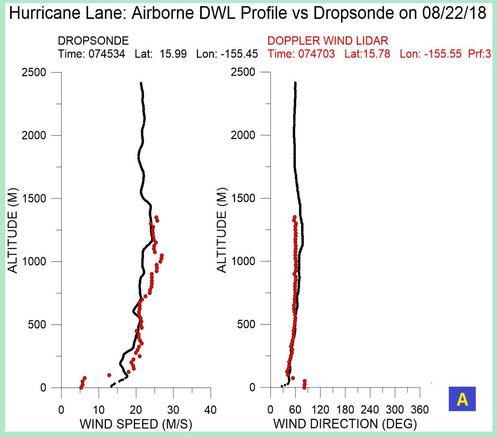


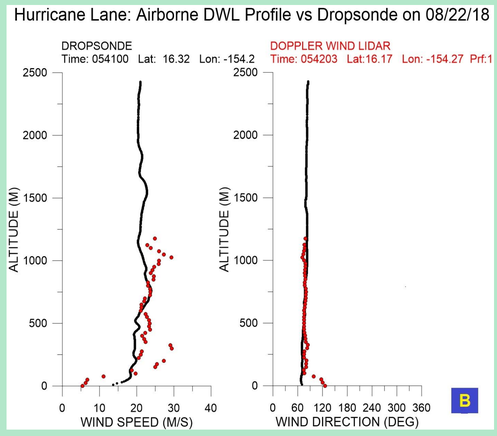
P3-DWL Hurricane Lane Investigation 8/19-22/2018

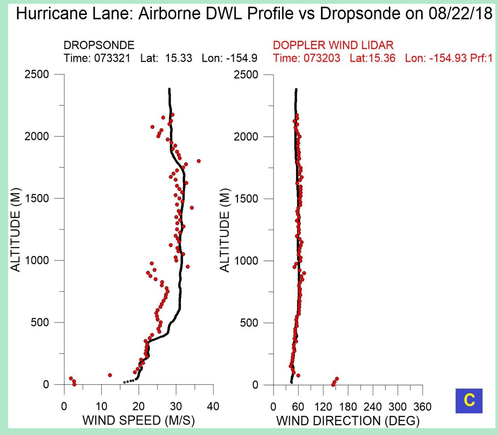


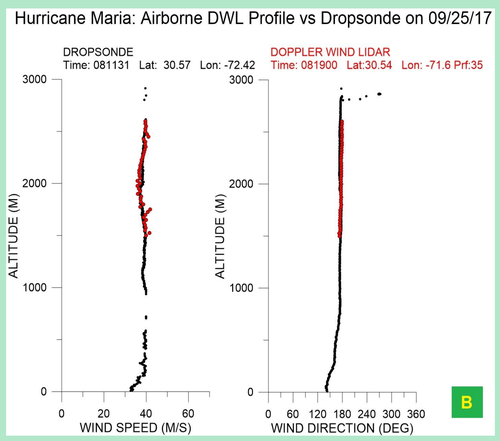


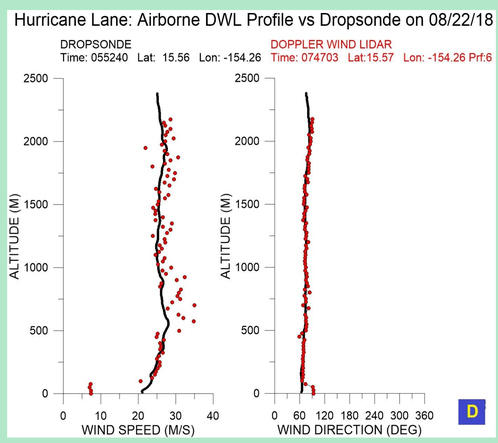


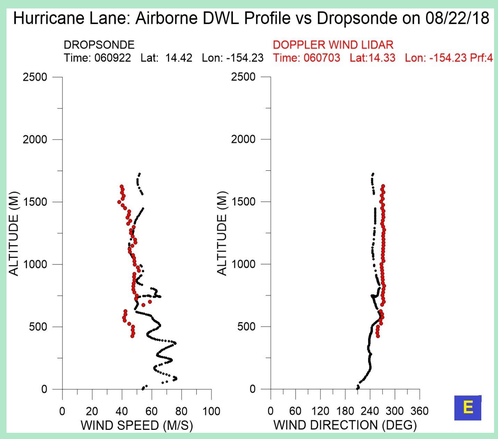


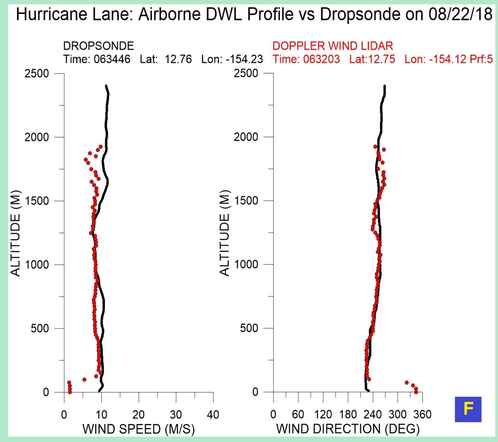












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