

Hybrid Doppler Wind Lidar: Focus on Tropics and Tropical Cyclones

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This presentation discussed the concept for a Hybrid DWL, with focus on the tropics and tropical cyclones as requirements drivers, such as the transition of African Easterly waves to hurricanes, but which can't be seen in temperature, humidity, or cloud fields. Also, local convergence and precipitation are more tightly coupled in tropics, and there are lots of clouds with a bimodal distribution of high cirrus and low stratus. OSSEs show the need for BOTH high and lower tropospheric winds. Mission parameters for the Hybrid call for a 400 km orbit (which lets pulse energy fall by factor of five relative to an NPOESS orbit and also a smaller telescope can be used). Staring and accumulation are critical for the concept instrument.

Note

Oliver Reitebuch noted the hurricane emphasis, and commented that this ignores the needs of the Western U.S. as well as Europe. Emmitt replied that the hurricane emphasis was for a demo/science mission prior to an operational mission.