



Oceanic Weather Decision Support for Unmanned Global Hawk Science Missions into Hurricanes with Tailored Satellite Derived Products

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The purpose of this presentation is to identify in-flight hazards to high-altitude aircraft, namely the Global Hawk. The Global Hawk was used during Septembers 2012-2016 as part of two NASA funded Hurricane Sentinel-3 field campaigns to over-fly hurricanes in the Atlantic Ocean. This talk identifies the cause of severe turbulence experienced over Hurricane Emily (2005) and how a combination of NOAA funded GOES-R algorithm derived cloud top heights/tropical overshooting tops using GOES-13/SEVIRI imager radiances, and lightning information are used to identify areas of potential turbulence for near real-time navigation decision support. Several examples will demonstrate how the Global Hawk pilots remotely received and used real-time satellite derived cloud and lightning detection information to keep the aircraft safely above clouds and avoid regions of potential turbulence.