

Impact of Global Hawk Data from the SHOUT-ENRR 2016 Field Campaign on an Atmospheric River in the Central North Pacific

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Sensing Hazards with Operational Unmanned Technology (SHOUT), a key project within the National Oceanic and Atmospheric Administration (NOAA) Unmanned Aircraft Systems (UAS) Program, uses Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs) to test the impact of real and simulated UAS data on weather forecasts of tropical cyclones and high impact extratropical storms over the United States. Furthermore, the project investigates how much UAS data can mitigate for a potential gap in satellite observations. The SHOUT team contributed to NOAA's El Niño Rapid Response (ENRR) mission, which was conducted between January and March 2016 to study this year's particularly strong El Niño, by investigating key mechanisms involved between tropical-extratropical interactions and 1-3 day weather forecasts of winter storms along the U.S. West Coast. First, we discuss a targeted observing strategy to determine areas of sensitivity for potential observations. Next, we evaluate the impact of targeted Global Hawk (GH) dropsonde data on a winter storm in the central North Pacific during ENRR, which was fueled by an Atmospheric River. Finally, we discuss ongoing work to assimilate microwave temperature and humidity data from the High Altitude MMIC Sounding Radiometer (HAMSR) on the Global Hawk payload as a further compliment to targeted observing.