

Abstract Submitted
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CLOUD-MAP Field Campaign Measurements of the Earth's Lower Boundary Layer NICHOLAS FOSTER, ALYSSA AVERY, JAMEY JACOB, Oklahoma State University — CLOUD-MAP (Collaboration Leading Operational UAS Development for Meteorology and Atmospheric Physics) is a 4 year, 4 university collaboration to develop capabilities that will allow meteorologists and atmospheric scientists to use unmanned aircraft as a common, useful everyday tool. Currently, we know that systems can be used for meteorological measurements, but they are far from being practical or robust for everyday field diagnostics by the average meteorologist or scientist. In particular, UAS are well suited for the lower atmosphere, namely the lower boundary layer that has a large impact on the atmosphere and where much of the weather phenomena begin. A sensor set called MDASS (Meteorological Data Acquisition Sonde System) was developed and used to collect and transmit live data necessary for developing such forecasts as well as be usable on multiple platforms ranging from fixed-wing and multi-rotor UAVs to rockets. The data transmitted from MDASS is viewed and stored on a ground control station via LabVIEW in a program developed for real-time data analysis. Results from the first CLOUD-MAP are presented. The campaign resulted in nearly 250 unmanned aircraft flights of 12 separate platforms over a 3 day period, collecting meteorological data at 3 different sites.

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