



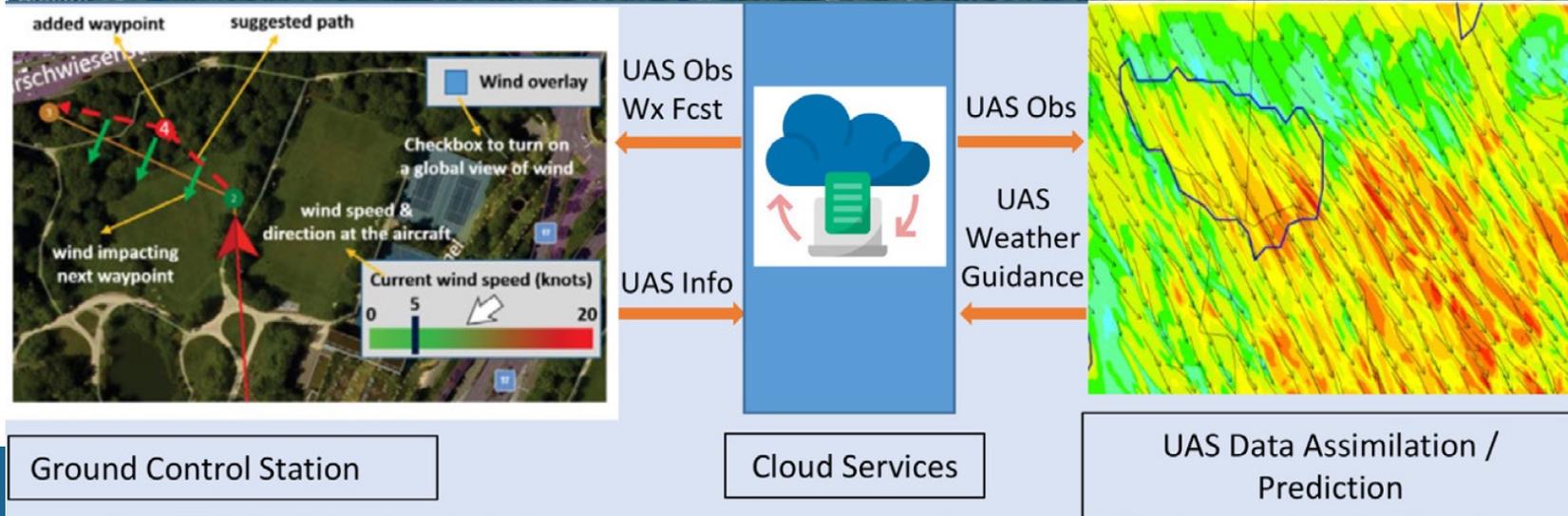
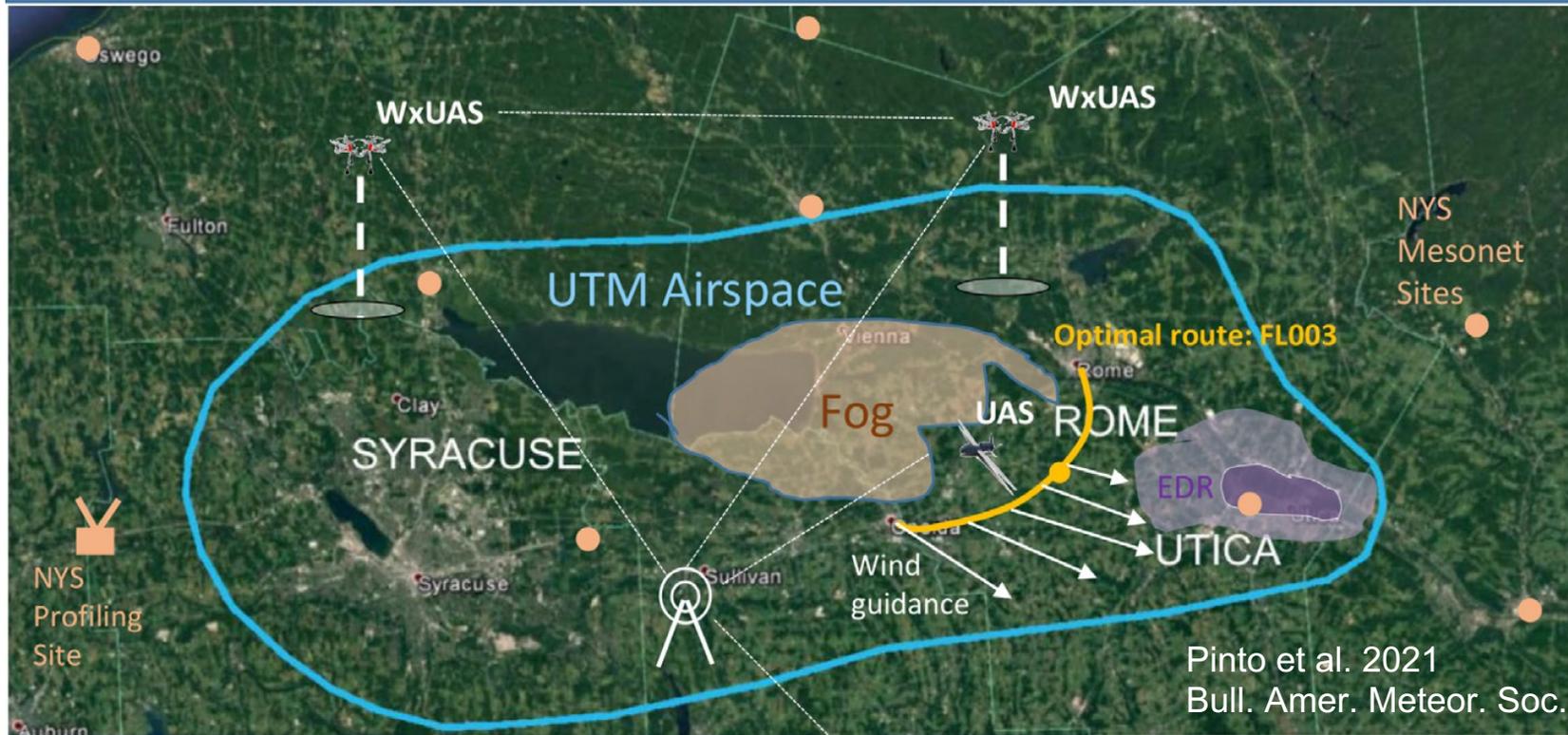
# UAS weather data sharing for enhanced safety and efficiency of Advanced Aerial Mobility

**James Pinto**

*NSF NCAR/Research Applications Lab*

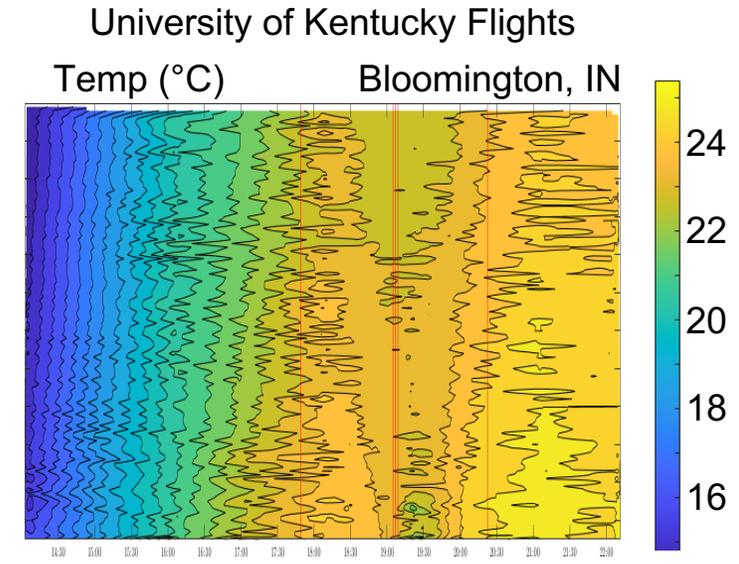
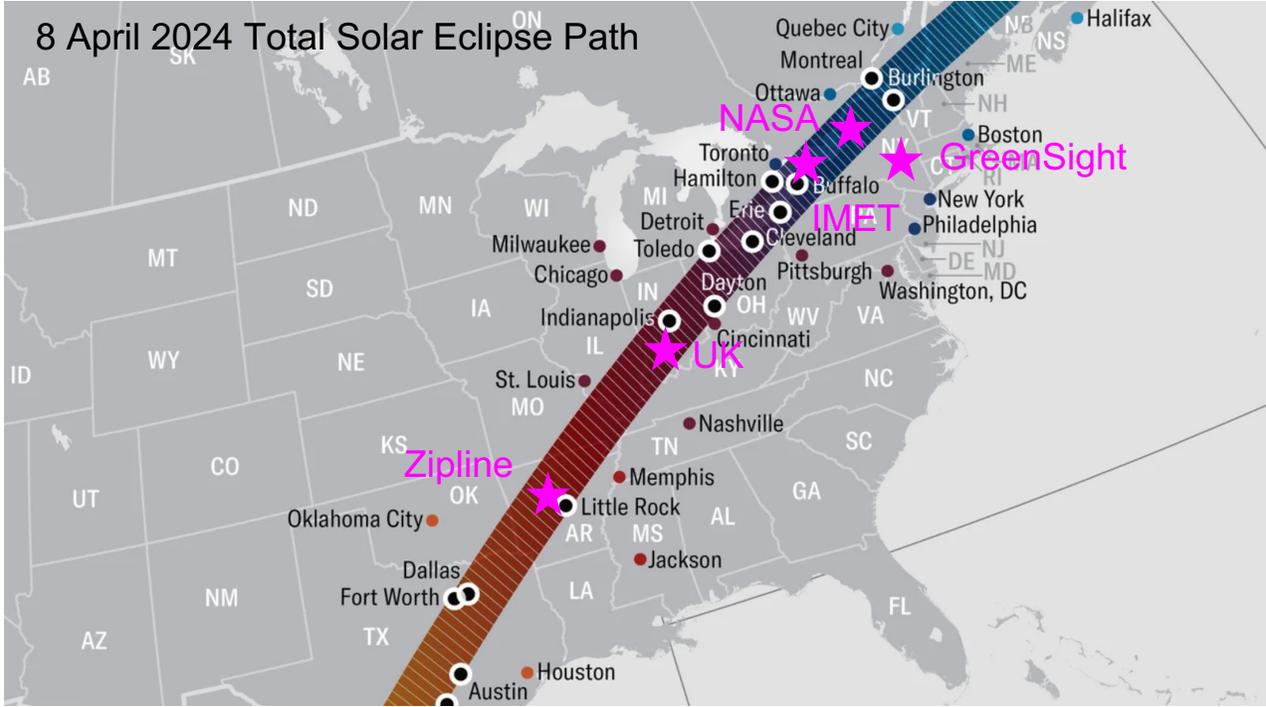
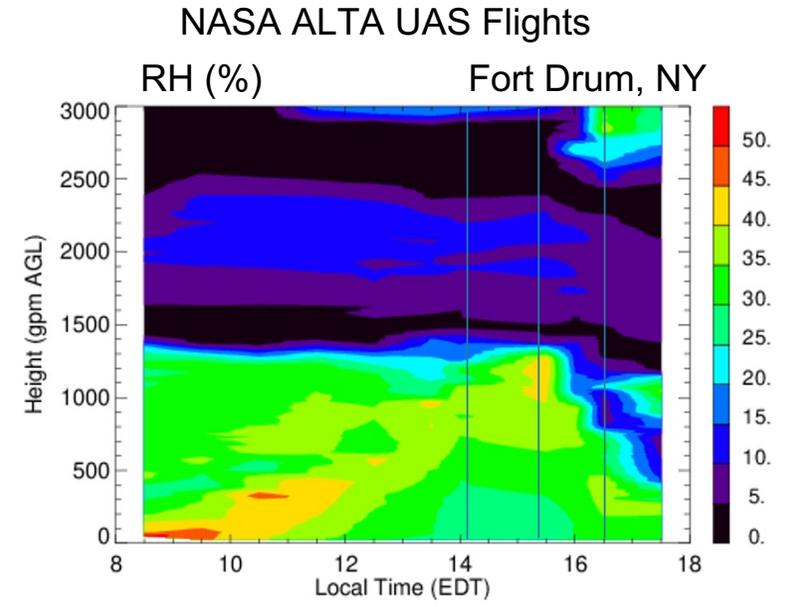
UAS Weather Forum  
<https://ral.ucar.edu/uaswf>  
Monday, 22 April 2024

# WEATHER-AWARE UAS TRAFFIC MANAGEMENT SYSTEM



# 2024 WMO UAS Demonstration Campaign

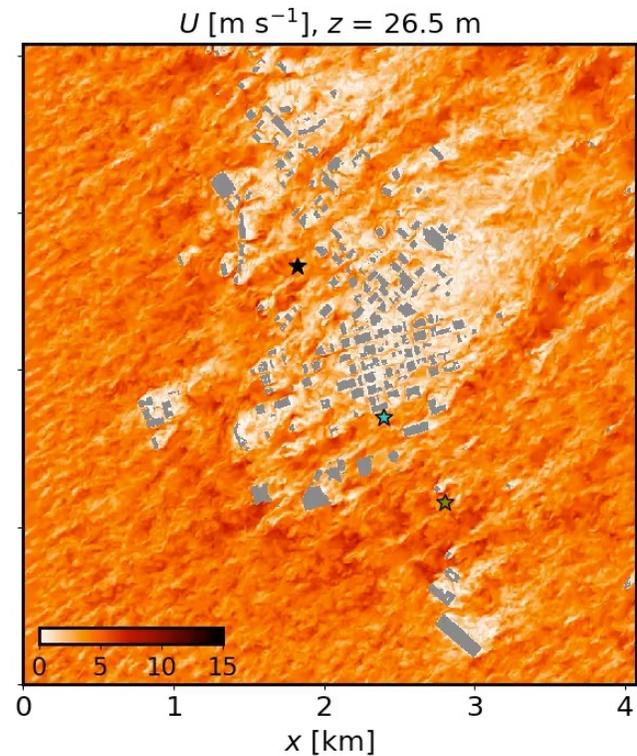
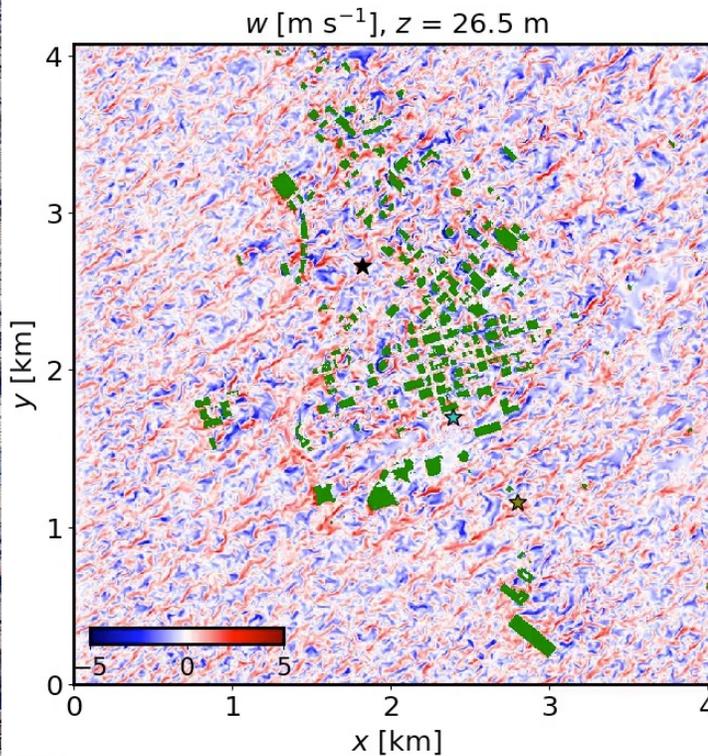
- 1st Intensive Observation Period 1<sup>st</sup> week of April (Eclipse flights)
- 2nd IOP : Sept 2024 (ISARRA Flight Week = Tulsa SCALES)  
<https://go.okstate.edu/aerospace/isarra-flight-week-objectives.html>
- Over 1000 profiles uploaded to cloud already
- Commercial, government agencies, universities, international
- Some WxUS collecting observations up to 10,000 ft
- Data being made available to modeling centers in realtime.



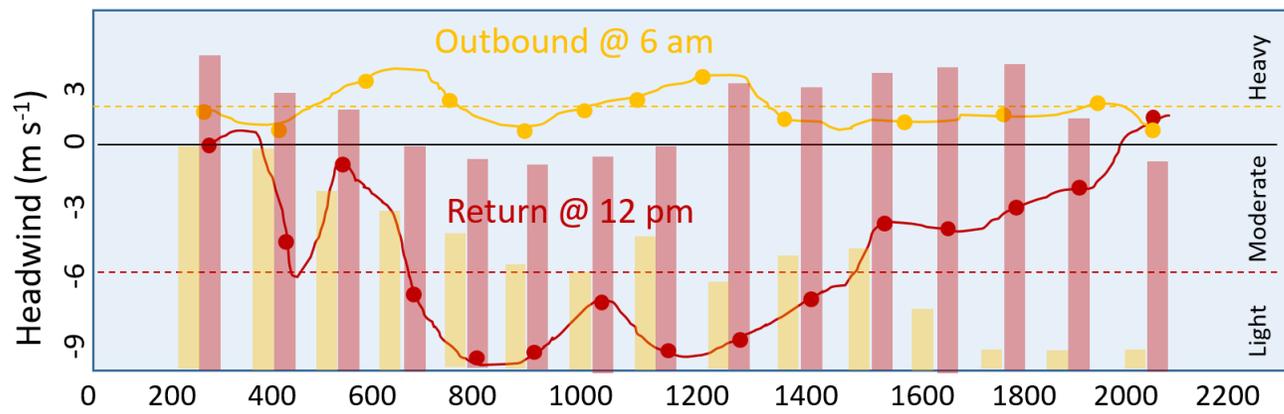
<https://community.wmo.int/en/uas-demonstration>

# Optimizing Flights in Urban Landscapes

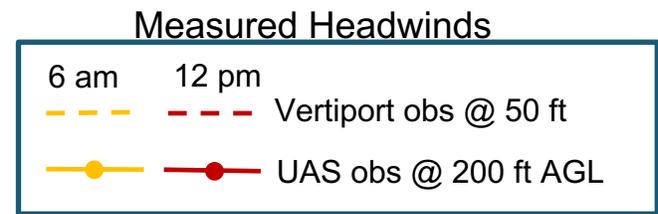
# Building-Resolving Wind Simulation (DFW)



5 m resolution FastEddy LES Output



Turbulence Intensity (bars)



Distance along trajectory (m)



# Agenda

Introduction to the 2024 UAS Weather Forum

**Dr. James Pinto**, NSF NCAR

Sampling Real Weather with Delivery UAS Right Now!

**John Celenza**, Zipline

Sharing UAS Weather Data via a Centralized Repository

**Elizabeth Wilson**, Synoptic PBC

ASTM Weather Information Provider and Data Sharing Standards for UAS Observations

**Dr. Chris Zarzar**, TrueWeather Solutions

**\*\*break\*\***

Flying to Better Forecasts: Estimating the Potential Impact of UAS Weather Observations

**Dr. Shawn Murdzek**, Cooperative Institute for Research in Environmental Sciences at CU Boulder

Integrating Wind and Weather Hazard Data into Airspace Management and UTM Systems

**Kraettli L. Epperson**, Vigilant Aerospace Systems, Inc.

Benefits of More Accurate Wind Information to UAS and AAM operations

**Mike Robinson**, MITRE Corporation