



Plans for:

CPEX-CV Analyses

and

Conferences, Reports, Journal Articles

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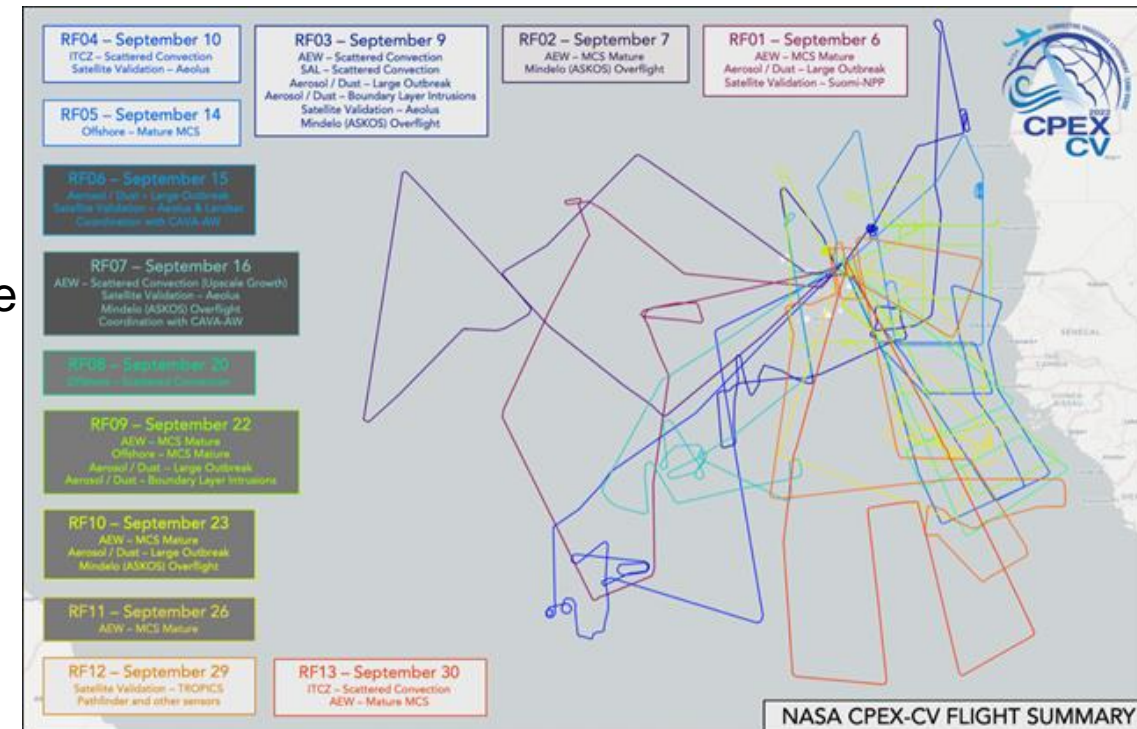
HIWC-2022 Special Topics Meeting
November 29-30, 2023 – Boulder, CO

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HIWC-2022 Addendum: NASA's Convective Processes Experiment – Cabo Verde (CPEX-CV)



- CPEX-CV flew the NASA DC-8 aircraft equipped with a suite of remote sensors and dropsonde-launch capability to measure tropospheric aerosols, winds, temperature, water vapor, and precipitation.
 - 13 research flights were conducted out of Sal Island, Cabo Verde between September 6-30, 2022.
- HIWC piggybacked on CPEX-CV with a reduced instrument suite (ICD on nose, Nagoya Univ aerosol instruments, NASA LaRC Radar-IWC)
 - Provides TWC data from another region of the globe for comparison to previous HIWC flight campaigns



CPEX-CV Analyses Plans



- TWC from nose ICD
 - Correlations developed from IKP to nose ICD from three last flights in HIWC conditions in 2022 in order to approximate freestream IWC during MCS traverses during CPEX-CV
 - » ICD elements were damaged during HIWC-2022 flights in graupel so correlation of IKP to ICD changed over course of 10 HIWC flights. No visual changes to nose ICD elements during CPEX-CV – described in Chen Aviation 2024
 - TWC data from CPEX-CV to be used in conjunction with Strapp et. al. Aviation 2024 paper to assess short distance scale statistics
- Pitot Anomalies
 - TWC and temperature data associated with timeframe when ADC1, ADC2 and MMS pitot probe anomaly occurred on 16 September will be analyzed and included in Ratvasky et. al. Aviation 2024 report
- Possible 1-2 cases examined for aerosols by NU. Validation data is not available. Can validate aerosols from global aerosol models.

Conference, Reports, Journal Article Plans



- Conference Reports:
 - Strapp, et. al., Summary of Additional In-situ Cloud Data in High Ice Water Content Conditions from Three Recent Flight Campaigns, AIAA Aviation 2024
 - Ratvasky, et. al., Air Data Probe Anomalies in Flight through Measured High Ice Water Content Conditions, AIAA Aviation 2024
 - Chen, et. al., Relating Ice Water Content Measurements Near Pitot Probes to Freestream in High Ice Water Content Conditions, AIAA Aviation 2024
- Reports
 - Ratvasky, et. al., Summary and Preliminary Findings from the 2022 NASA/FAA High Ice Water Content and Aerosols Flight Campaign, NASA Technical Memorandum [target June 2024 publication]
 - » Summary from this workshop to be included in this report
 - Bansemer – talk or poster at ICCP 2024
 - Masataka/Narihiro/post-doc: posters at ICCP 2024
 - AIAA report 2025 or beyond on to build on ARAC report in relation to the use of modification to App D for graupel
- Journal Article
 - Masataka/Narihiro plan for journal articles in 2026?