

NRC Convair-580 ESCAPE preliminary data distribution disclaimer - 8-Jul-2022

For the project, the NRC Convair is configured with over 40 in-situ and remote sensing sensors. The data that are included in this preliminary release were computed in real-time or during the field campaign. The package also contains quick looks from the sensors that are identified as core. It is possible for any given flight the core sensor performance would be worse than the sensor identified as secondary, but no attempt was made during the campaign to substitute sensors. NRC will provide a note of the overall performances of the core sensors few months after the campaign.

1. Real-time data

All of the parameters calculated in real time may potentially contain erroneous data, and should be referred to with caution.

Generally it is not recommended to use real-time data for any quantitative analysis. The package contains

- Aircraft state parameters
 - Latitude
 - Longitude
 - Pressure-Altitude
 - GPS-Altitude
 - Ground-Speed
 - Heading
 - TAS
- Atmospheric state parameters
 - Ambient-Temp
 - Dew-Point
 - TAT
 - Ps
 - Pd
 - Windspeed
 - Wind-Direction
 - Vertical-Windspeed
- Cloud microphysics
 - CDP LWC
 - CDP MVD
 - MSO-FREQ (Goodrich Icing Detector)
 - Vibration frequency of the rod drops below the default values of 40 kHz when it has ice accreted on it. Tripping frequency indicates icing conditions.
 - LWC and TWC (Nevzorov)
 - king-type approach (estimation of dry term from ambient parameters) is used to calculate water content, possibly causing a bias
 - real-time calculations may be affected by issues in pressure, temperature or TAS
 - collection efficiency is assumed to be 1 for all particles.
 - All of the three Nevzorov sensors that NRC brought to the field were damaged by the end of the ESCAPE campaign so for three of the flights there is no Nz TWC data

3. It is noted that post-flight quicklooks are not necessarily quality-controlled, and will be superseded with corrected & quality-controlled data deliverables post-campaign.

4. These preliminary data shouldn't be shared with other groups without authorization by the ESCAPE PIs and NRC.

5. NRC intends to publish the quality controlled data and assign DOIs.