

Co-locating ACTIVATE measurements from King Air, Falcon, and Dropsondes

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What is it and which data are currently available?

- A dataset based on ACTIVATE data coming from Falcon, King Air and dropsondes. It includes distances between aircraft, and between dropsondes and both aircraft to co-locate measurements among them.

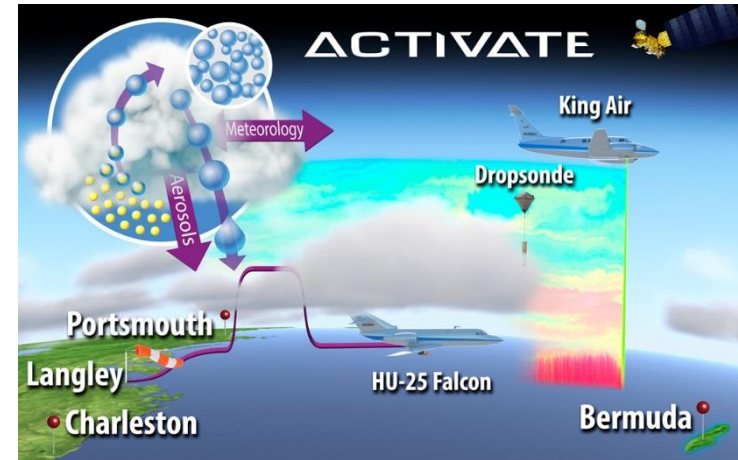
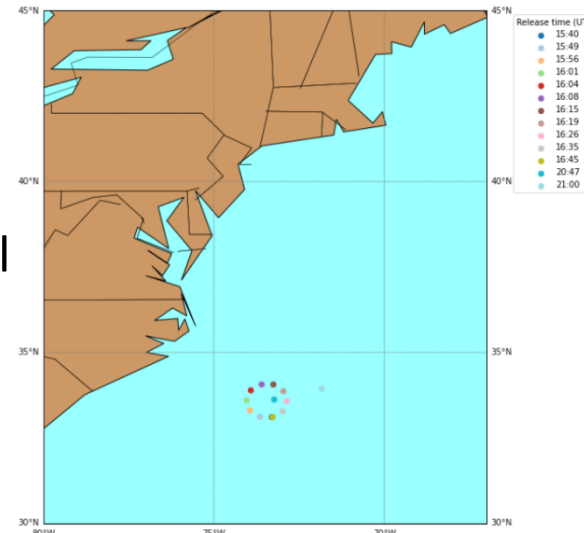


Image: NASA

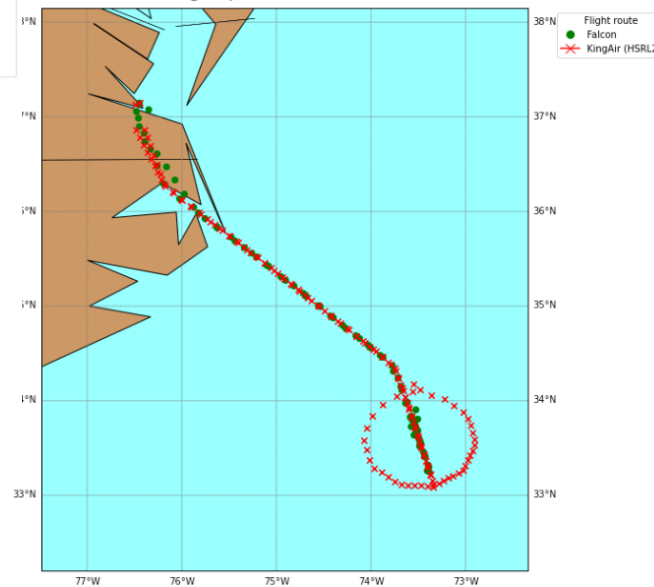
- Which data are ready to use? For 2020 field campaign:

- Level 1C: measurements with direct meteorological meaning (i.e., temperature from dropsondes, cloud droplet number concentrations from Falcon)
- Level 2B: measurements with indirect meteorological meaning (i.e., backscattering from King Air's HRSL2).
- Single temporal basis (same time coordinate) and resolution (1s) for dropsondes and Falcon.
- Single temporal basis (same time coordinate), mixed time resolution for King Air data (remote sensing).

Dropsonde launch locations
2020-02-28

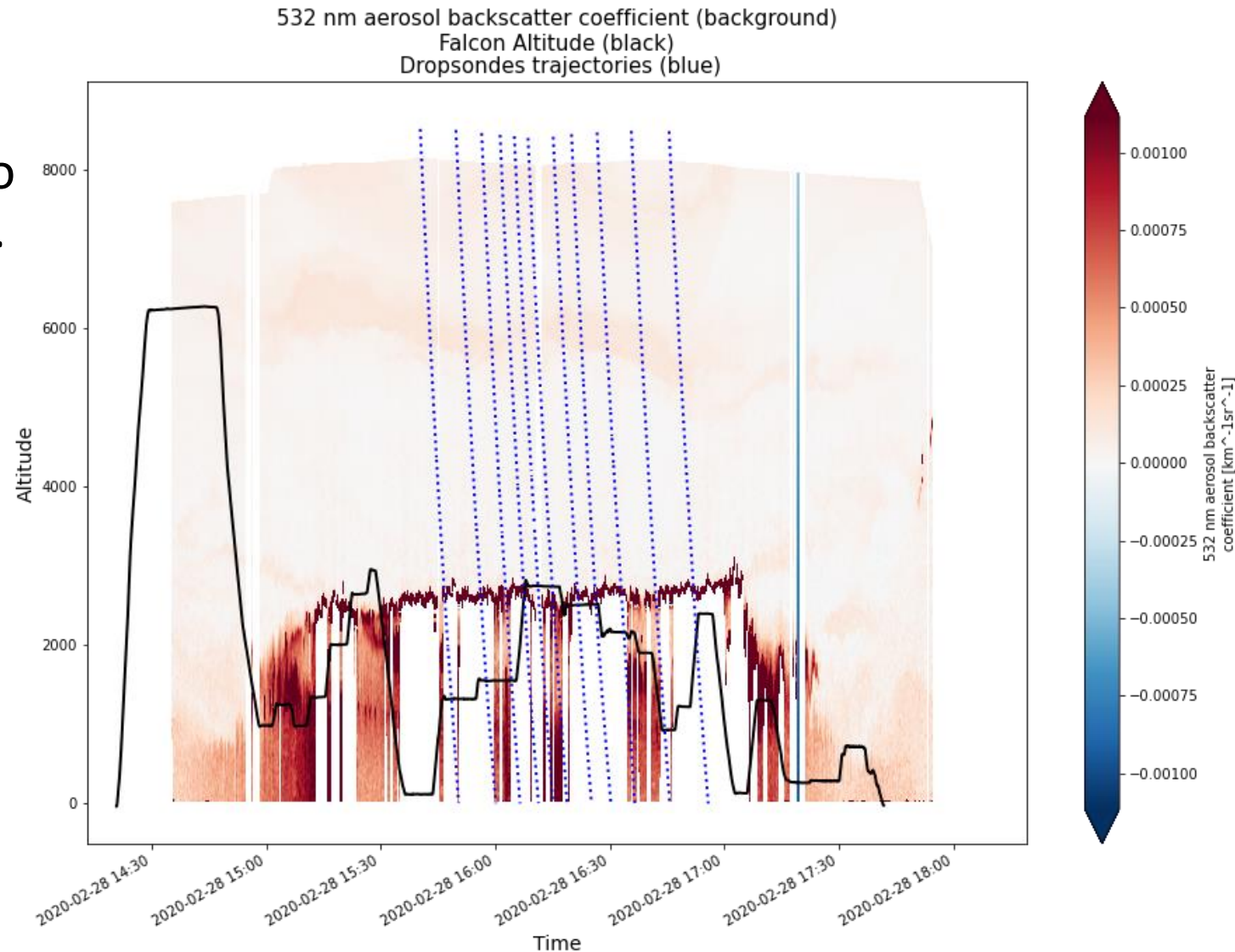


Flight path 2020-02-28 L1



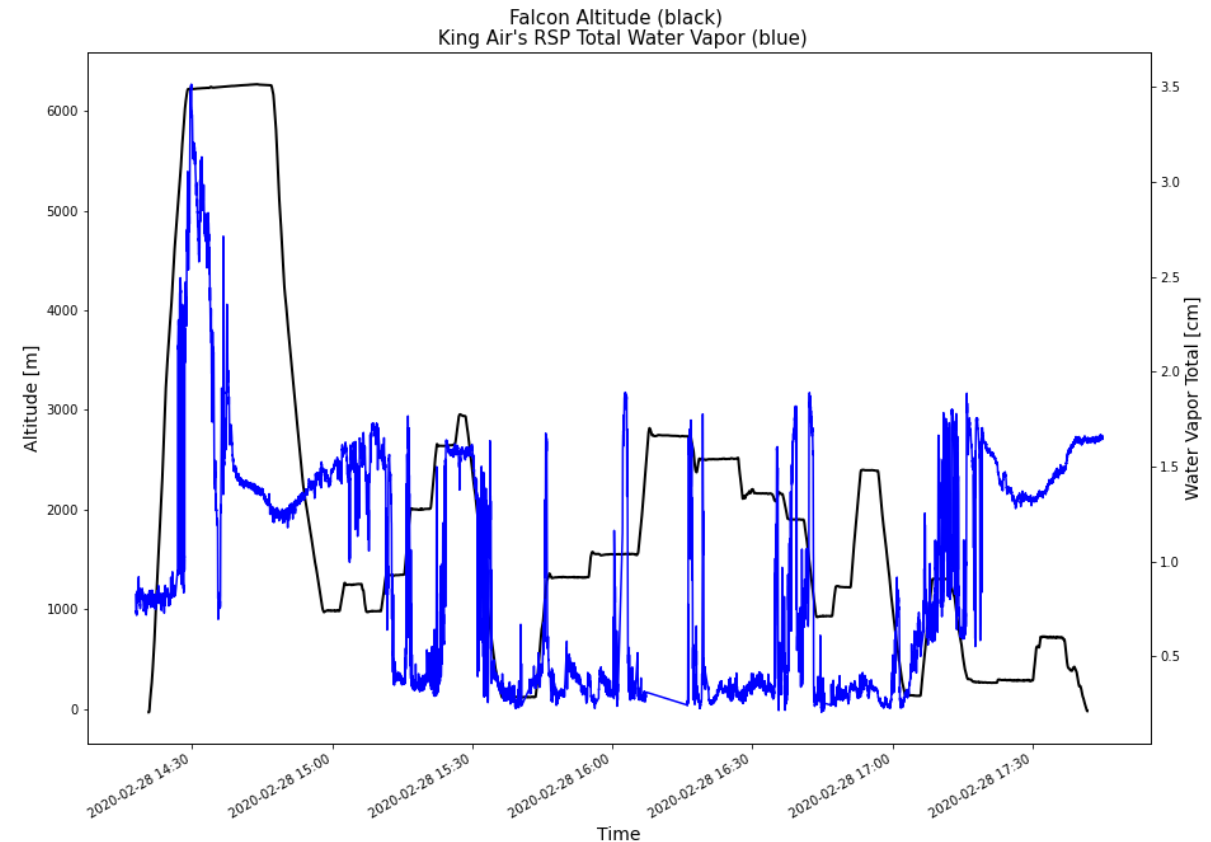
What can be done with the dataset?

- Merge, analyze, and visualize data coming from different sources, thanks to the common time base in an easier way. The plot on the right side took 25 lines of code to create (including formatting).
- The objective is to foster the use of this valuable data and to take advantage of multiple measurements happening at the same time (and often at the same place).



Why should people use this dataset and what is next?

- Improvements to the original dataset:
 - Common format across all measurements included (netCDF).
 - Same time (scale and type) and location reference across measurements.
 - Time references follow CF Conventions.
 - Metadata standardization (including traceability).
 - Distances among different aircrafts is provided.
- The dataset will be available in the ACTIVATE repository.
- Coming soon:
 - Period-based measurements (i.e., tracers)
 - Level 3 data (gridded dataset): 0.01-, 0.1- and 1-degree resolution, aimed to be compared with model and satellite data.



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