
A33A-07: Outcomes of 7 years of airborne trace gas measurements over California and Nevada: The Alpha Jet Atmospheric eXperiment (AJAX)

Wednesday, 12 December 2018

15:10 - 15:25

📍 *Walter E Washington Convention Center - 151B*

The Alpha Jet Atmospheric eXperiment (AJAX) has been flying a scientific payload since January 2011 measuring ozone, carbon dioxide, methane, formaldehyde and meteorological parameters up to 9 km. AJAX is located and operated from the San Francisco Bay Area and has flown a total of 229 flights, on a regular basis (approx. 3 per month) over all seasons cataloguing a long-term record of trace gas concentrations over California and Nevada. The AJAX project focuses on science questions which benefit from routine, frequent observations with flexible scheduling. This presentation will provide an overview of AJAX activities including a discussion of airborne measurements for:

- Long range transport (LRT) and Stratosphere-to-Troposphere Transport (STT). Regular sampling by AJAX has aided identification of LRT and evidence of STT, which during spring and summer months are visible as elevated O₃ laminae within airborne profiles. Some laminae have the ability to impact surface level air quality.
- Satellite validation. Regular AJAX missions include flights to Railroad Valley, NV in coordination with GOSAT and OCO-2 observations, and more recently to provide coincident measurements under TROPOMI.
- The AJAX project is uniquely flexible to incorporate specialized flights with limited planning notice, such as sampling emissions from California wildfires. 9 wildfires have been sampled, with some more than once allowing to observe emission changes as the fire progresses.
- Pandora validation. Future work will include development of flight strategies for validation of ground based Pandora spectrometers.

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