

- AGU Fall Meeting – Caroline Parworth

- Title of the talk: **Characterization of Wildfire Emissions in California: Analysis of Airborne Measurements of Trace Gases from 2013 to 2016**

- Abstract (500 words or less): Biomass burning, which includes wildfires, prescribed, and agricultural fires, is an important source of trace gases and particles, and can influence air quality on a local, regional, and global scale. Biomass burning emissions are an important source of several key trace gases including carbon dioxide (CO₂) and methane (CH₄). With the threat of wildfire events increasing due to changes in land use, increasing population, and climate change, the importance of characterizing wildfire emissions is vital. In this work we characterize trace gas emissions from 9 wildfire events in California between 2013 – 2016, in some cases with multiple measurements performed during different burn periods of a specific wildfire. During this period airborne measurements of CO₂, CH₄, water vapor (H₂O), ozone (O₃), and formaldehyde (HCHO) were made by the Alpha Jet Atmospheric eXperiment (AJAX). Located in the Bay Area of California, AJAX is a joint effort between NASA Ames Research Center and H211, LLC. AJAX makes in-situ airborne measurements of trace gases 2-4 times per month, resulting in 229 flights to date since 2011. Results presented include emission ratios (ER) of trace gases measured by AJAX during fire flights, and comparisons of ERs are made for each fire, which differ in time, location, burning intensity, and fuel type. We also use our airborne measurements to compare with photochemical grid model results to assess model approximations of plume transport and chemical evolution from select wildfires.

- Authors (and their affiliations):

Caroline L. Parworth¹, Josette E. Marrero², Emma L. Yates¹, Ju-Mee Ryoo¹, Laura T. Iraci¹

- Conference Dates: December 10 – 14, 2018
- Date of presentation, December 11, 2018
- Website (if applicable)

Thank You,

--

Caroline Parworth, Ph.D.
NASA Ames Research Center

Mail Stop 245-5
Moffett Field, CA 94035
ph: 650-604-0713