

## 6.078 Convective Influence on Methanol (CH<sub>3</sub>OH) in the Tropical Upper Troposphere.

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Abstract:

Long-term measurements of methanol (CH<sub>3</sub>OH) from the Atmospheric Chemistry Experiment Fourier transform spectrometer (ACE-FTS) together with *in-situ* measurements from the DC3 (2012) and SEAC<sup>4</sup>RS (2013) field campaigns conducted over North America are used to better understand its variability in the upper troposphere. The main objective of this study is to investigate the influence of surface biogenic emissions and convective transport on methanol distributions over different regions and season. Simulations of methanol from the Community Atmosphere Model with Chemistry (CAM-chem) global chemistry model are also used to evaluate the model with a focus on Asian vs. North American summer monsoons. The results show overall agreement in the shape of the vertical distributions of methanol from the measurements and the model, reflecting the transport of directly emitted methanol to the upper troposphere. Differences in the magnitudes of the model simulations and satellite measurements are due to an underestimate of emissions, as supported by model evaluation with the aircraft observations.