



CAFS partial ozone column data for in-flight validation of the AURA ozone products.

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A comprehensive dataset of partial ozone columns was collected during Polar 2005, Houston 2005 and Costa-Rica 2006 Aura Validation Experiments (AVE). The spectrally resolved UV and visible actinic flux measurements were taken by the CCD Actinic Flux Spectrometer (CAFS) instrument on board of the DC-8 and WB-57 aircrafts. The algorithm to derive partial ozone columns from CAFS data was field-tested against ozone balloon measurements, as well as in-situ and remote-sensing measurements collected from the WB-57 aircraft platform, including ozone mixing ratio, ice content information and temperature measurements. An elaborate data set of partial ozone columns was provided for the first-round of Aura satellite validation. Prior to the June 2005 AVE campaign the CAFS design was modified to reduce sensitivity to the variability of scattered light over inhomogeneous background. As a result, CAFS observations have become more sensitive to the aircraft roll and pitch movements. We will also discuss sensitivity of the CAFS product to the partial cloud scenes. Co-located Aura-MLS ozone profiles have been derived for the AVE campaigns. MLS ozone profiles integrated above the aircraft altitude were compared against CAFS partial ozone columns. Results indicate that MLS and CAFS agree within 3 %. Detailed analysis of the altitude-dependent bias between MLS and CAFS data will be presented and discussed. We also plan to discuss the CAFS and MLS uncertainty estimates. Contingent on public release of the OMI ozone profiles, we will present comparisons between co-located CAFS and OMI partial ozone column above the aircraft levels along the AURA satellite tracks.