



Analysis of the Summer 2004 Ozone Budget over the U.S. using IONS-04 Observations and MOZART-4.

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During the Intercontinental Transport Experiment (INTEX-A) in summer 2004 an ozone sonde network (IONS-04) was assembled over North America to complement the set of aircraft and satellite observations. This dataset forms the basis of the presented study in which we examine the origin of ozone over the summertime US. We estimate the budget by using the global chemistry transport model MOZART-4 with synthetic tracers that keep track of the ozone produced from selected sources (stratosphere, lightning, Asian and US anthropogenic emissions, and North American boreal fires). This budget estimate is analyzed in conjunction with a laminae analysis (Thompson et al., 2007) that is a more empirical approach to extracting information about contributions from stratospheric-tropospheric exchange, advection and convection. Combining these two independent approaches allows us to determine the factors controlling summertime ozone in greater detail and also to evaluate the strength and weaknesses of the individual methods.