**The Red Butte Canyon Ozone Network: monitoring background concentrations, canyon flows and stratospheric oxidant exchange in a pristine mountain canyon adjacent to Salt Lake City, UT**

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Ozone (O3) is as a key pollutant that contributes to poor air quality during the summer and winter seasons in Utah. Despite the importance of O3 as a pollutant and an oxidant, many questions remain regarding its formation, transport and its role in secondary chemical reactions. In particular, the role that the complex topography of the Wasatch mountains and its canyons play in the chemical processes and transport of O3 remains poorly understood. In an effort to address these outstanding questions, we developed a transect of three O3 monitoring stations distributed throughout Red Butte Canyon, a United States Forest Service Research Natural Area adjacent to the University of Utah. Red Butte Canyon has multiple existing environmental and climate monitoring stations that complement these O3 monitoring efforts. The results of this combined network is a dataset designed to investigate multiple questions including: (a) the role of canyon flows in the transport of O3 during stratospheric injections in the summer, (b) examining the exchange of O3 from the free troposphere with stagnant air during persistent cold air pools in the winter, (c) the potential for using mountain sites to understand and monitor background O3 concentrations, and (d) examining how transported precursor pollutants from the nearby urbanized area affect O3 formation in the Wasatch mountains. A better understanding of these processes is central in the implementation of successful O3 mitigation policies. In this presentation we will describe the deployment of the network and present several case studies that are being used to address the objectives of the project.