



## Glyoxal: A BVOC oxidation tracer with high sensitivity to OH

Andrew Huisman, Frank Keutsch, and the BEARPEX, CABINEX and BEACHON-ROCS Team  
University of Wisconsin-Madison, Department of Chemistry, Madison, United States (keutsch@wisc.edu)

Glyoxal is a secondary product of the OH-initiated oxidation of primary biogenic volatile organic compounds (BVOCs) such as isoprene, MBO and methyl chavicol. With only a handful of BVOC precursors and a short lifetime of ca. 1 hour, glyoxal is ideal as a local tracer of BVOC oxidation chemistry in rural forested regions. We present measurements of glyoxal from three forests in the continental U.S. and compare these results with observationally-constrained models of BVOC oxidation chemistry. Sensitivity studies show that glyoxal model concentrations are very sensitive (more than linear) to model OH concentrations. The observed model behavior stems from two details of the underlying chemical mechanism: 1) reaction with OH is not the major glyoxal loss channel, and 2) glyoxal is largely a higher-generation product of BVOC oxidation. We propose that glyoxal is an ideal tracer for BVOC oxidation studies aimed at investigating OH-driven chemistry.