

# VOC Measurements during DC3: Source Characterization and Vertical Transport

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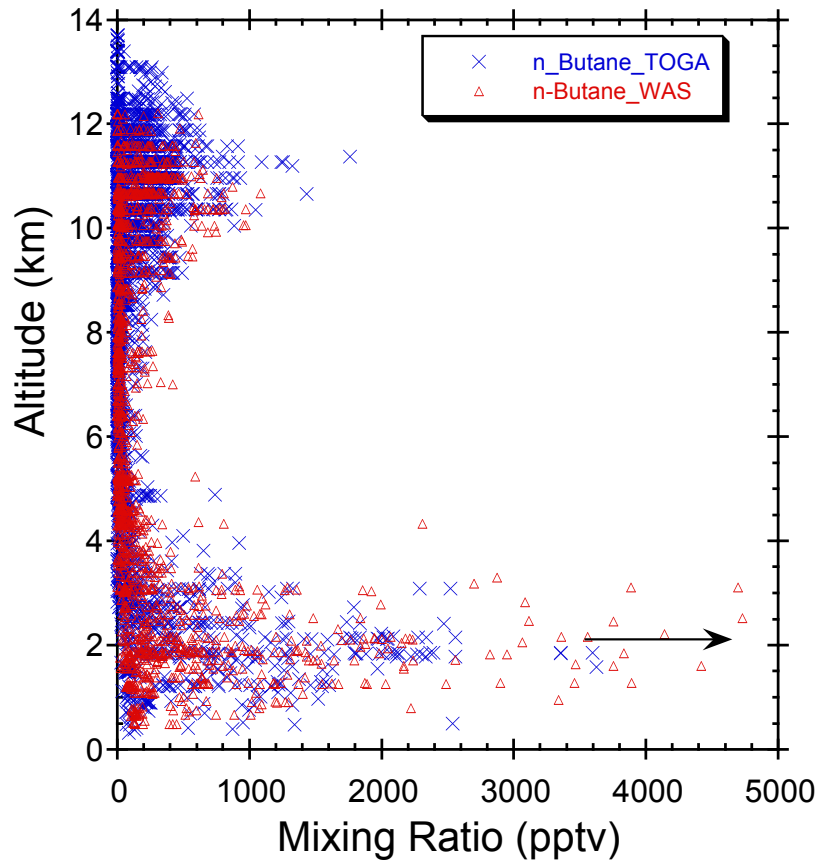
Glen Diskin – LaRC

Greg Huey – Georgia Tech

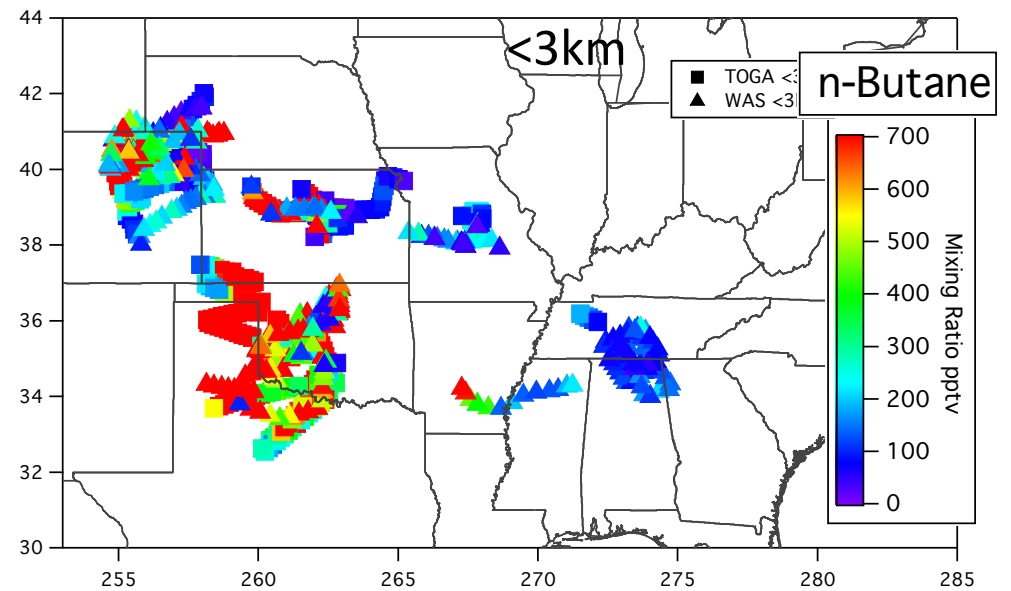
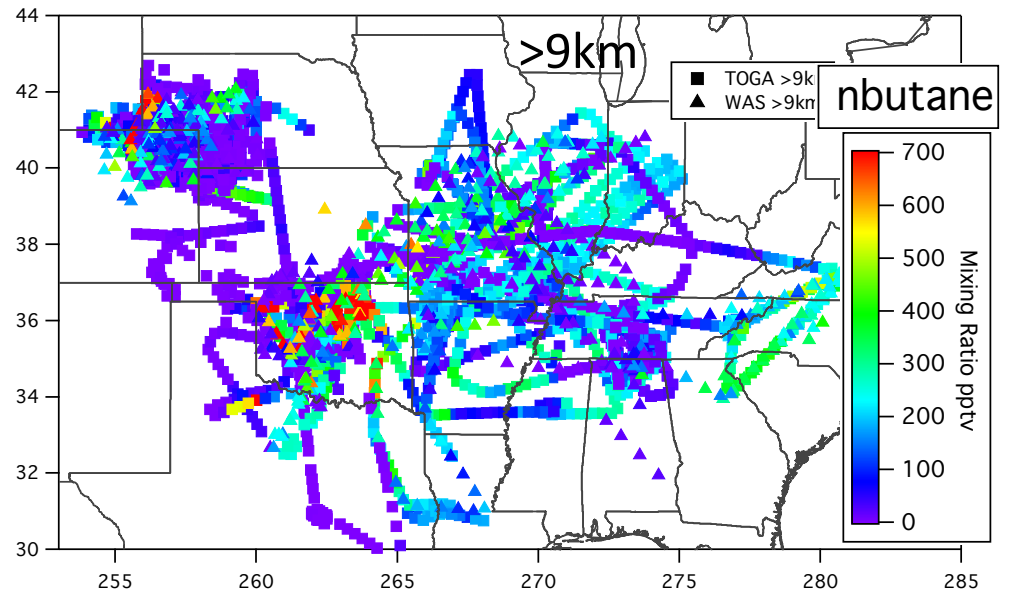
Ron Cohen – UC Berkeley

DC3 Science Team

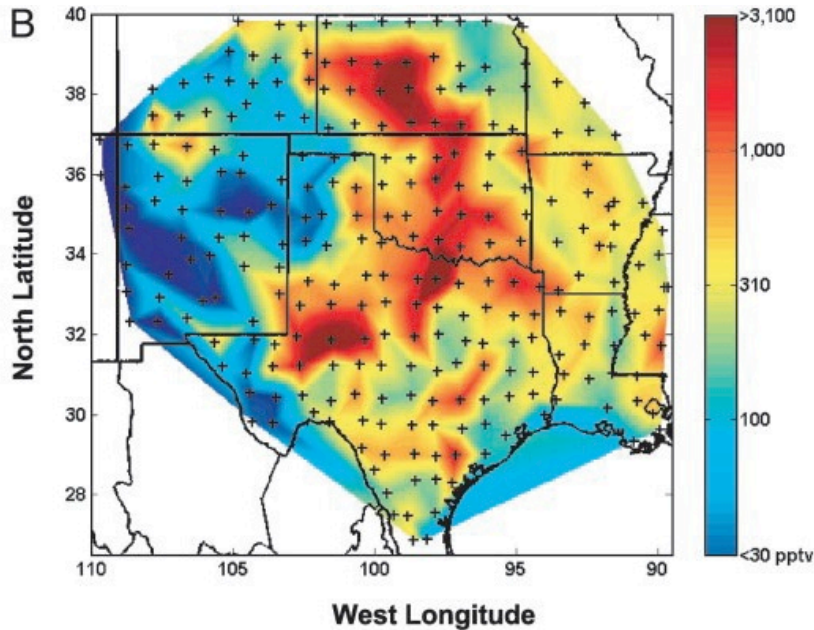
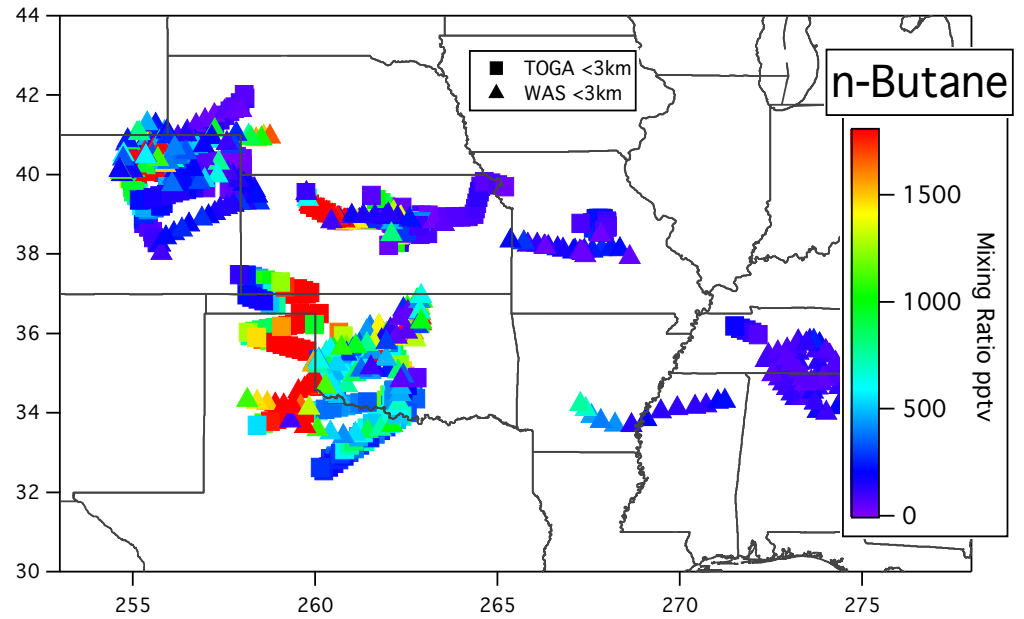
# n-Butane: Oil and gas tracer



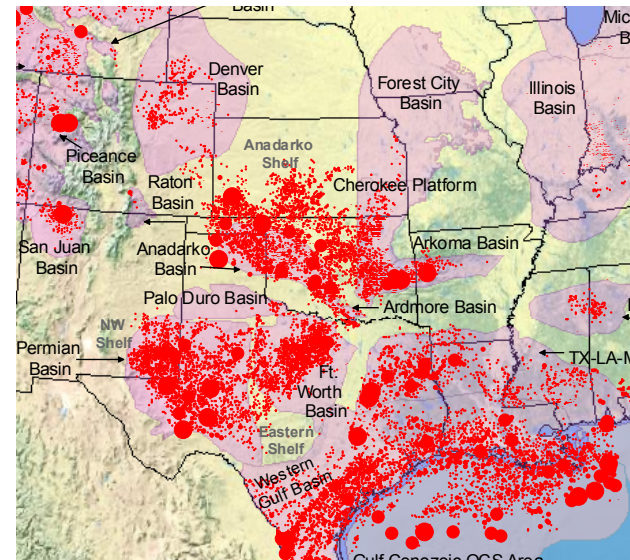
Lots of activity in the TX/OK and CO regions made this a good tracer for vertical convection during DC3



TOGA (GV) & WAS (DC-8)  
 Palt <3km  
 n-Butane

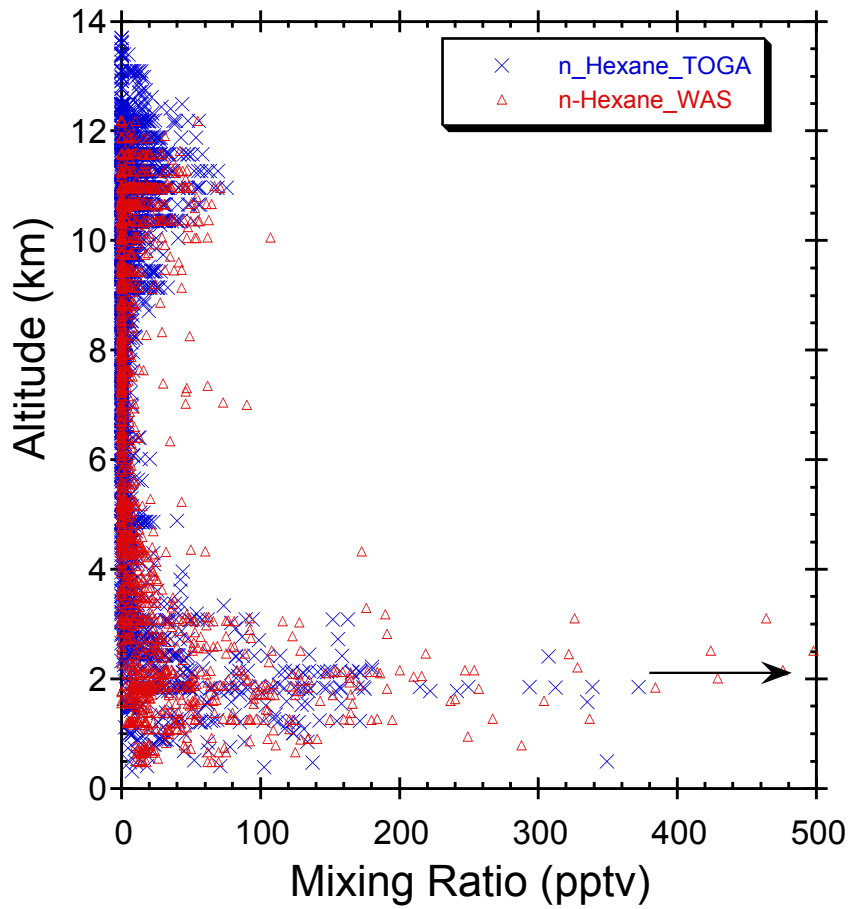


n-Butane (Katzenstein et al.)

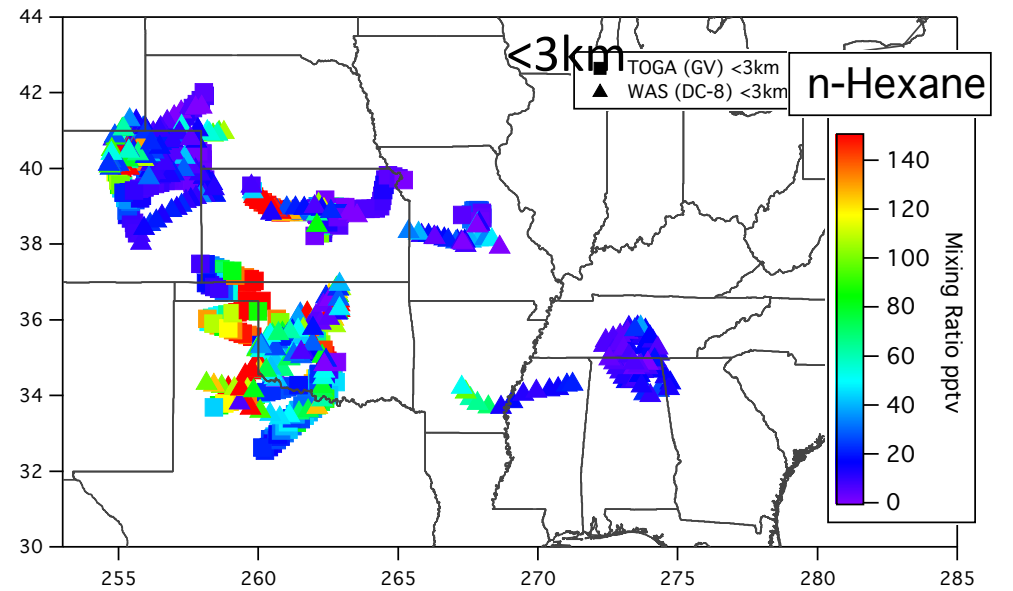
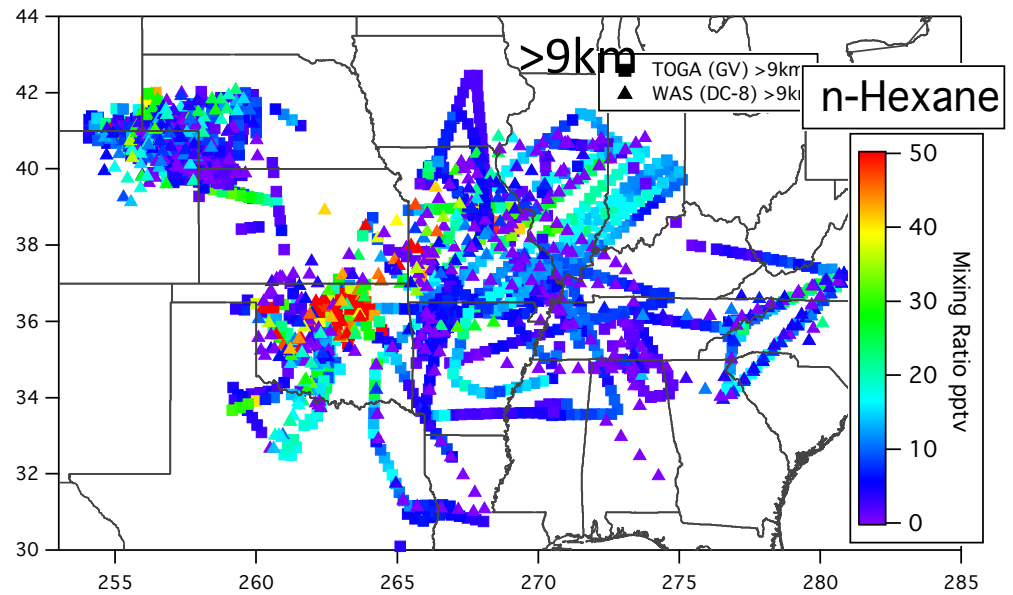


Gas Production in Conventional Fields (EIA)

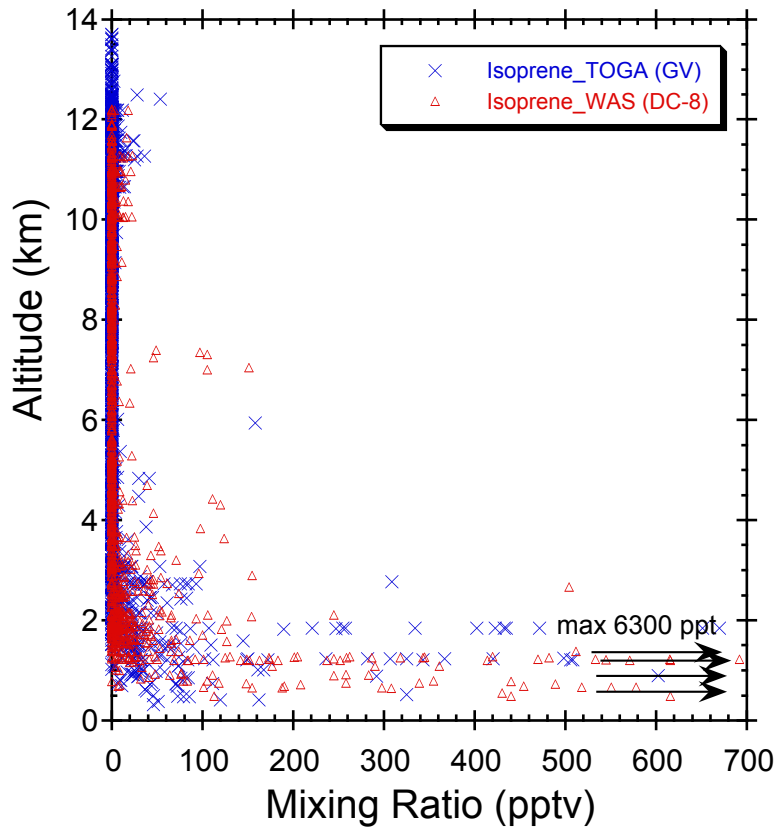
# N-Hexane: Short-lived Oil and Gas tracer



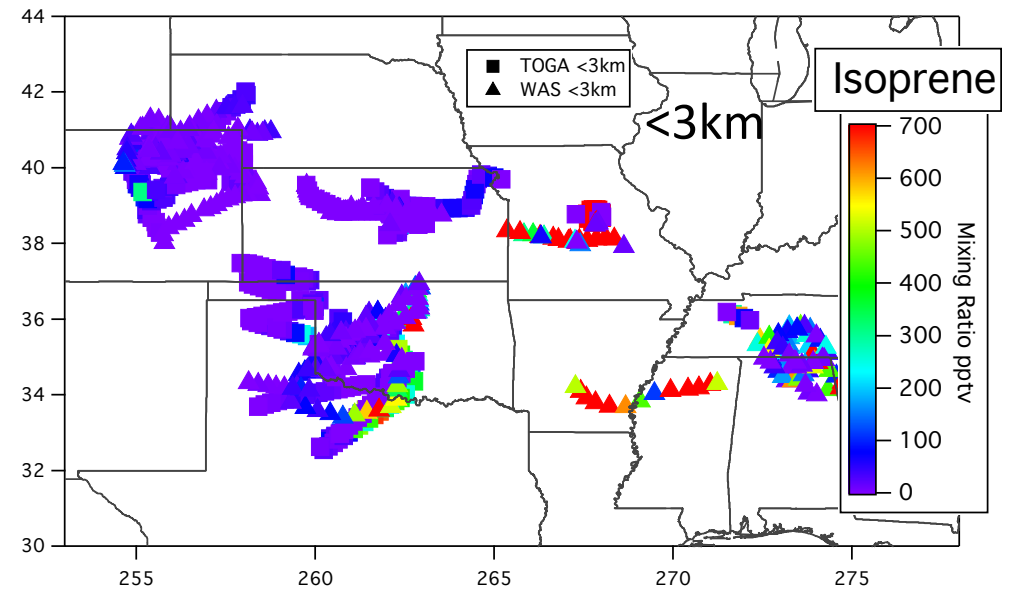
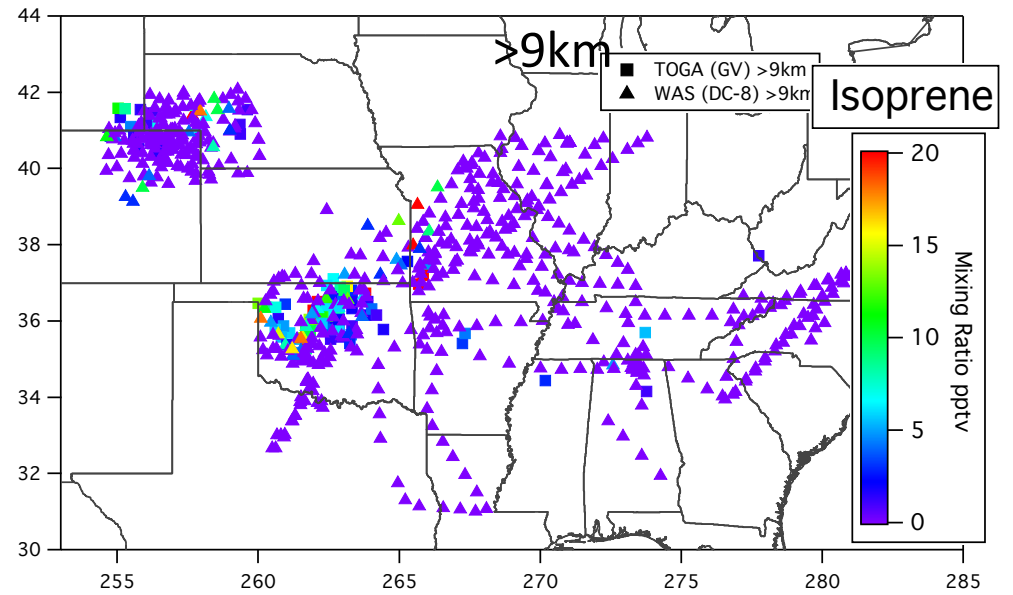
Short lifetime makes it a good indicator of very fresh convection



Isoprene: Very short-lived - Emitted from vegetation

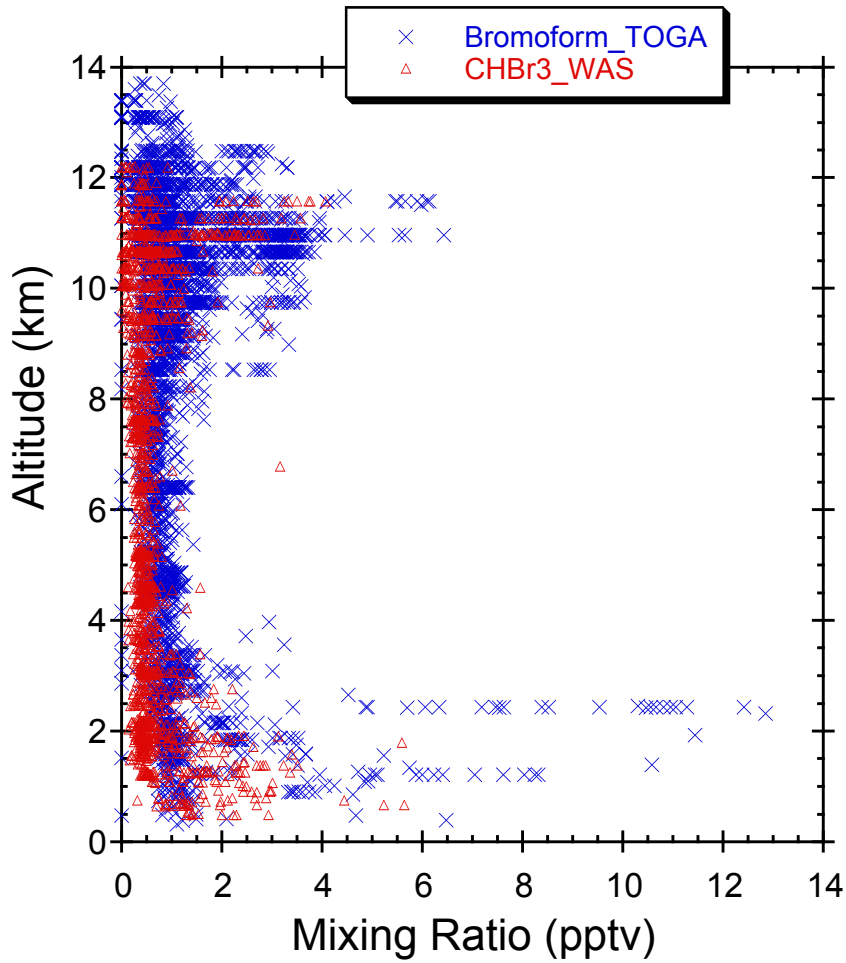


Short lifetime makes it a good indicator of very fresh convection

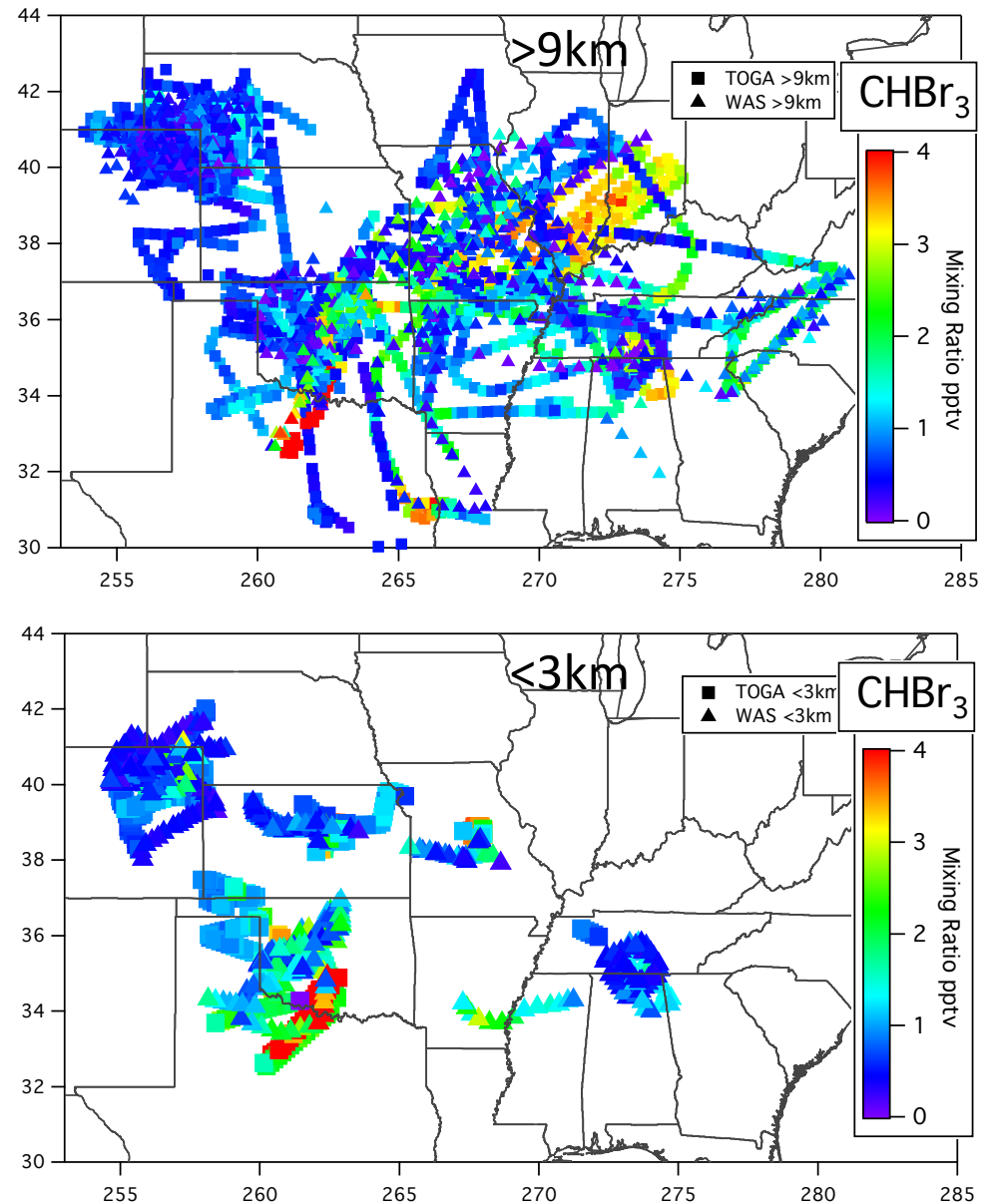


Note: Different MR scales

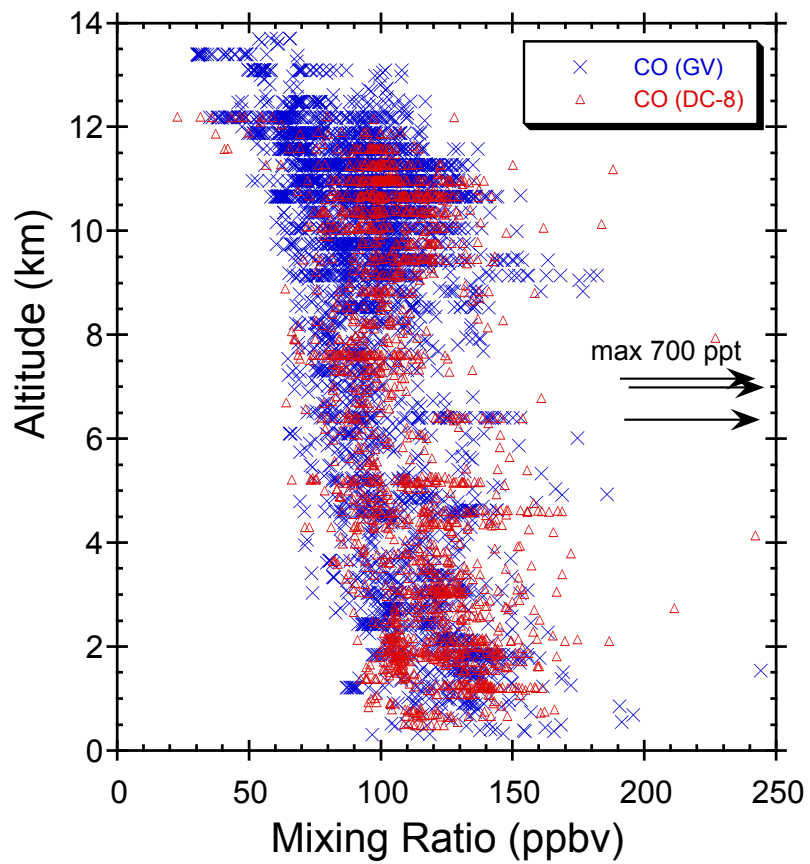
Bromoform: Natural sources – usually associated with oceanic emissions but also peat.



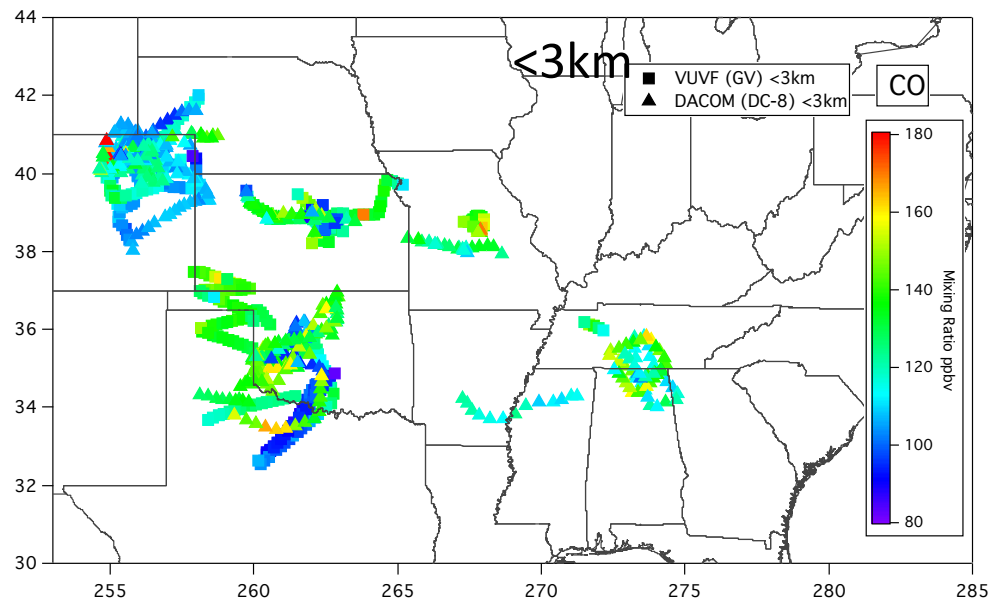
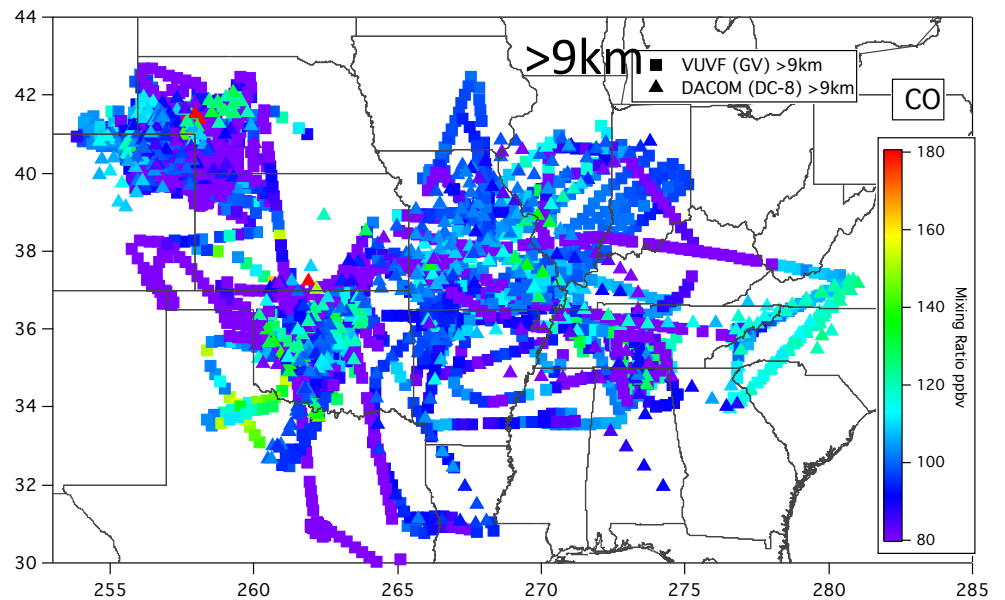
Thought to be a major source of Br to the UT/LS.  
Continental sources not well-defined



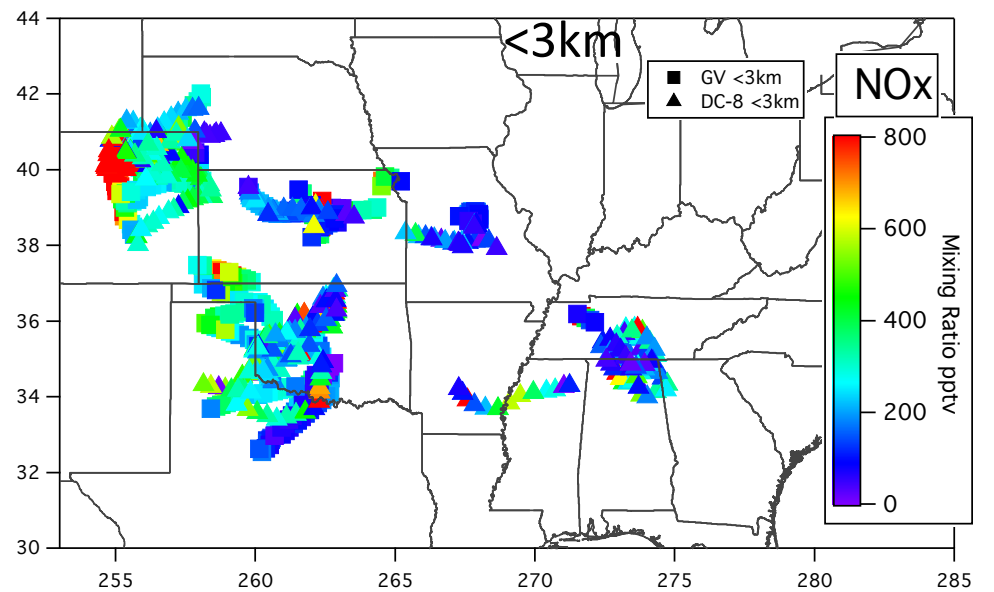
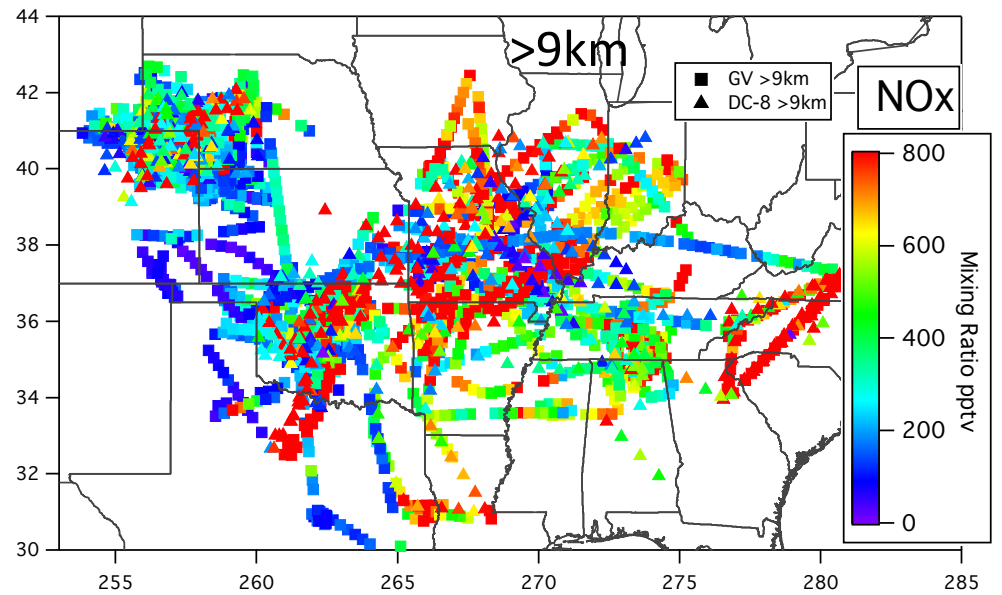
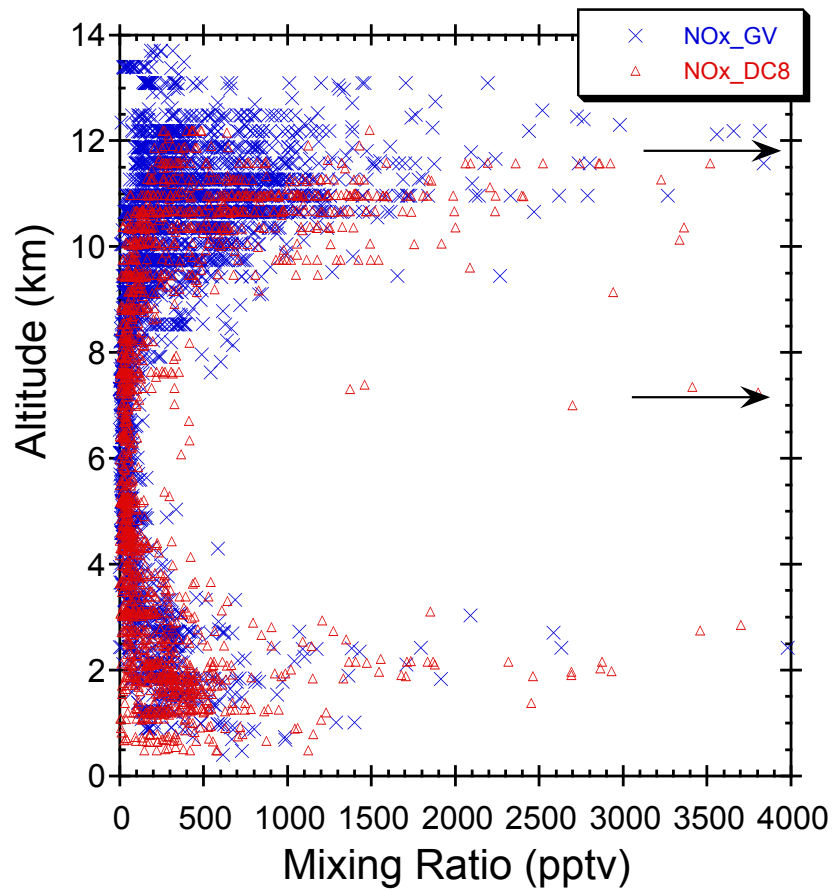
# Carbon Monoxide: Long-lived Combustion Tracer



– not very variable during DC3 so not a great tracer for vertical transport

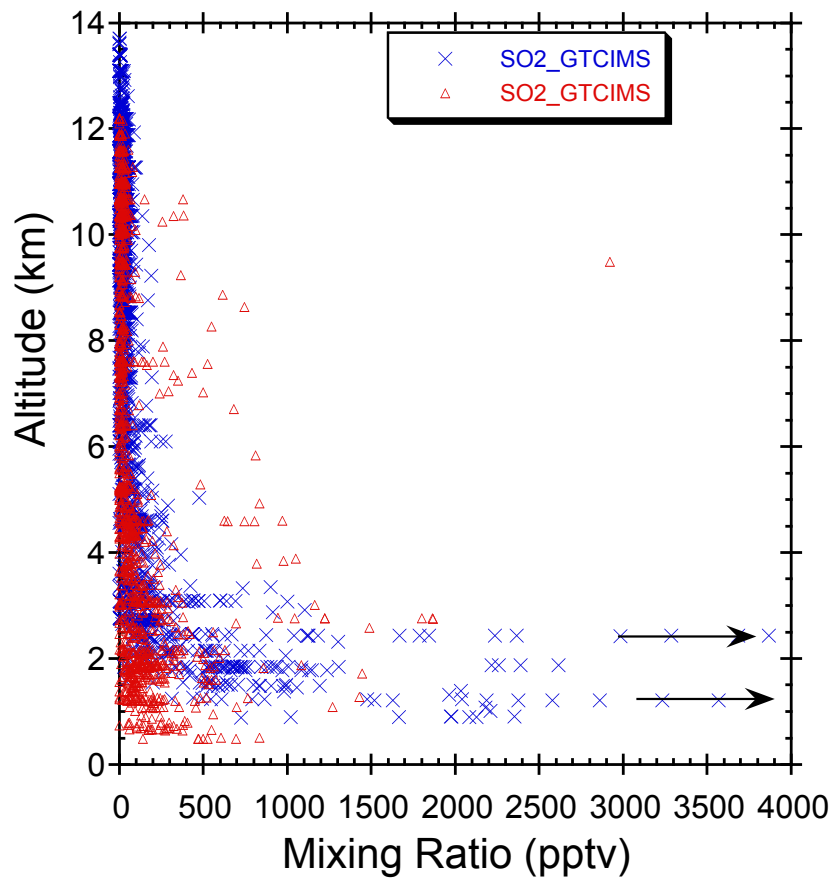


# NO<sub>x</sub>: Combustion and lightning tracers





# Sulfur Dioxide: Soluble Industrial Tracer



Wet convection is a sink

