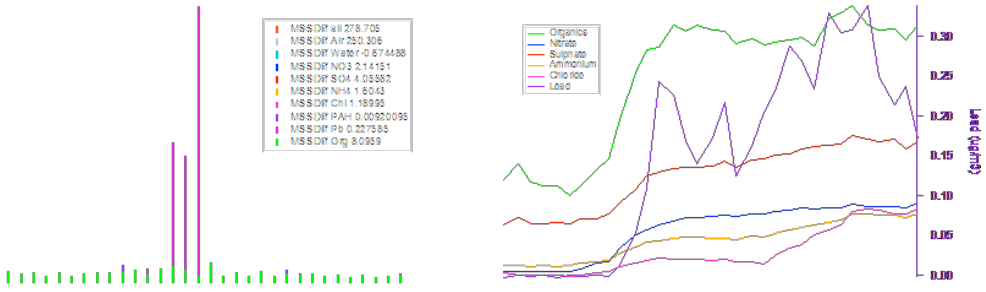
ARI Mobile Lab Update (3-26-06)
(reported by Tim Onasch)

The team made it through one (hopefully) last night sitting the truck for 24 hours in Santa Ana last night. The winds were weak in the morning, but from the north, so we stuck around. Around 11 AM, the rain clouds gathered and the winds shifted S. The SO2 instrument was shifted to a non-backgrounding inlet for the Tula job. Our work in Santa Ana was over. A bit of foresight kept the CPCs dry during this time and thus active for the drive north. A slow walk back through town put our departure at ~2PM from Santa Ana. We drove 4-5 hours through traffic, rain, and more traffic heading north. Instruments worked well. The clouds and rain kept the truck cool enough that heat was not a major issue. The traffic was thick, but provided a good diversity of light duty and heavy duty vehicles at slow, accelerating, decelerating, and highway paces. We managed to shoe-horn in several good chase sequences on several diesel vehicles. The additional information from the photoacoustic instrument will be very interesting to correlate with the TOFAMS and MAAP data for the diesel vs gasoline engines. The fractal mode on the TOFAMS was strong and well separated from the background accumulation mode. Good omen for the soot experiments to come next week.

We found Gustavo after a minor detour and parked the ML into the prevailing wind (despite the anemometers protests to the other direction). Twenty minutes of Berk-time had our 3 leg 220V power issue nicely chopped up into digestible 125V lines and we were off generator again.

All systems were up and running in short order, including the PTR-MS which survived a wetting of the flow controller. A quick tour of the ambient conditions for Gustavo turned up the results shown below. I ran across this signature in the outflow of an incinerator, but never in ambient data. The signal came and went with a shift in wind, so further analysis is pending. A nearby cement plant is a potential source candidate.

Flexpart forecasts refinery plume hits this evening as well as next.



We plan on moving back to T0 on Monday.