**CHEM5151 Atmospheric Instrument Demo 4/15/2013**

*- All computers – Thermo labtop, SMPS laptop, AMS projected on wall with LCD projector one-by-one as discussing)*

*- Run all instruments for 16 hours sampling outside air (AMS/SMPS roof inlet, gas outside window PFA)*

**Gas Analyzers** (SO2, O3, NO/NOx, Picarro is being repaired):

* 3 Thermo Analyzers, all running and plotting Thermo software on Labtop
* Discuss principle operation incl sampling (briefly)
* Look at time series from last 16 hours (sampling outside air)
* Look at realtime concentrations (sampling outside air)

**SMPS:**

* Running and plotting TSI software on labtop
* Discuss principle operation incl sampling (briefly)
* Flip through size distributions from last 16 hours (sampling outside air)
* Look at realtime concentrations (sampling outside air)
* Show Image plot of d(N,V)dLogDp for BEACHON and associated integrated time series

**AMS:**

* Running and plotting AMS DAQ
* Discuss principle operation incl sampling (briefly)
* Look at time series from last 16 hours (sampling outside air)
* Look at realtime concentrations (sampling outside air). Look at:
  + Sticks mass spectrum
  + Raw mass spectrum
  + PtoF
  + MS time series
  + Triangle plots

**Smoke sampling:**

* Switch gas and aerosol to sampling enclosed container.
* Then light a match and extinguish, close and sample smoke.
* Look at AMS spectrum, PToF, MS time series, triangle plots, SMPS distributions, gas species

Other:

* Could produce aerosol with atomizers and sample PSLs and size selected NH4NO3 and look at distributions on AMS but probably not time for this.

Notes on how things worked:

* Generally covered all I hoped too (but quickly)
* Need to encourage to get in closer (as I did but keep in mind in future b/c lab loud)
* Could use 45+ minutes in order to go little slower, discuss, answer/ask questions (for demonstrator and thought questions for group)
* Maybe show size distribution of a match and/or atmosphere averaged from Squirrel to throw up on a powerpoint (like did for SMPS time series - this time from BEACHON)
* Better display for Thermos (Igor real-time, this is in the works for near future)
* If more time, could also put schematics of each instrument up on screen while explain them, especially the gas instruments – SMPS, AMS a little easier to point out parts as explain)