The Volkamer Group from the University of Colorado was using Multi-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) to measure tropospheric trace gases on the VOCALS-REx 2008 campaign. The specific gases that will be analyzed include; glyoxal ((CHO)2), NO2, O3, O4, H2O, BrO, OClO, IO, SO2, and possibly a few others. Unfortunately, profiles of only a few of these will be available here due to the set-up for the real-time evaluation tool. Also, data is currently only available for the time period between 11/14/2008-12/1/2008 due to problems with the operating software at the beginning of the campaign. Profiles for all of the species during the entire campaign will be available at a later date, once post-processing can be completed. In order to obtain this information please contact volkamer-group@lists.colorado.edu, let us know what it is you are interested in and we would be happy to help.

These text files contain the results from the analysis of one of our spectrometers using a specific DOAS retrieval program, WinDOAS. The spectrometer being analyzed covered the wavelength range from 416-522 nm and the analysis produced rough slant column densities for glyoxal, NO2, O3, O4, and H2O. This particular tool was set up to give a very rough estimation of these trace gases, so the values contained in the text files are by no means final products. WinDOAS should have produced a results line for every spectrum that was taken by the specified spectrometer, which should end up being every 30 seconds while data is being recorded. Also, it should be noted that since this is a passive technique, using solar straylight from the sun, measurements were not taken during the night. Any further questions should be directed to the above email.

The text file format is column oriented and the column name is found in the first line of the text file.

The format of analysis results column names is: analysis procedure name.value(trace gas).

Example: chocho.SlCol(O4) = this column was produced from the glyoxal analysis procedure, the value is the slant column density, and the trace gas is O4

Also, since this was only designed to give rough estimations some of the columns can be disregarded, those will be listed at the bottom of the list.

Some of the columns are self explanitory and a quick explanation of the ones that aren’t is provided next.

Seconds\_Midnight are the number of seconds since midnight

File is the name of the raw spectrum

Solar Z.A. is the solar zenith angle

Average, Minimum, and Maximum are the number of counts (# photons collected) for the raw spectrum

Scans is number of scans

Tint is integration time, all should have values around 30 seconds

Name is the elevation angle that the spectrum was collected at

RMS is the root mean square of the analysis

Slant column densities(SlCol) are in molecules/cm2

Error (SlErr) is the standard deviation for the selected species

Disregard SZA, Best shift, anything dealing with Offset, Ring, RefZm, and Fluxes 450