Reviewer 3

This is an excellent paper presenting detailed and extensive Raman lidar backscatter measurements of the atmosphere. The results are important and novel to the atmospheric community. The authors do a good job in detailing the backscatter parameters, field data, and calculated optical and concentration values. My only suggested changes are to add to the general usefulness of the paper and include these optional changes:

Thank you for your kind words and your careful reading. Please find our comments below: (All new text in the manuscript is in blue color, with exception of a new Appendix C)

(1) Under Instruments....sentence with "1064 nm with 50MHz vertically " does not make sense....is this the bandwidth or linewidth;

Thank you, the sentence was misleading (The “Mega” in MHz was wrong) and has been corrected. (It should read …. “Laser with 50 Hz / 200mJ per pulse and color …

(2) Might give some of the basic laser/optics parameters in the paper (as opposed to "see Ref. 18");

Thanks, some more information is added, See the new text in blue color.

(3) detail the laser wavelengths, Raman emission wavelengths and from what species;

Thanks, the species (N2 and H2O) are named.

(4) maybe Indicate more parameter values and quantified findings in the Abstract (maybe 3 or 4 values, such as those in the Conclusions)....also say in the first sentence of the abstract....three wavelength Raman Lidar (.355, .532, 1.06 microns).

Thank you! All new text is in blue color.