

Atmos. Chem. Phys. Discuss., referee comment RC1 https://doi.org/10.5194/acp-2021-1017-RC1, 2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on acp-2021-1017

Anonymous Referee #1

Referee comment on "Fluorescence lidar observations of wildfire smoke inside cirrus: a contribution to smoke-cirrus interaction research" by Igor Veselovskii et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-1017-RC1, 2021

The manuscript "Fluorescence lidar observations of wildfire smoke inside cirrus: A contribution to smoke-cirrus – interaction research" is very well written and presents a novel apprach to combine Flourescence and Multiwavelength Raman Lidar to better isolate vertically profiled smoke characteristics both in the free atmosphere as well as in cirrus clouds. The approach is quite empirical and intersting and should provide a uselfull tool in exploring a number of aerosol - cloud interctions and how smoke can mix and be modified in cloudy backround enironments. One issue is that it is not clear what kind of quantitative errors we are propogating into the Flouresence retreivals (both Flourescence Backscatter and Smoke Microphysical). In particular, estimates of plausible errors are not shown in Tables 1 or 2 whereas the aerosol parameter errors are estimated.