

Interactive comment on “Springtime aerosol load as observed from ground-based and airborne lidars over Northern Norway” by Patrick Chazette et al.

Anonymous Referee #3

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The article is novel and interesting, it has a sufficient impact and adds to the knowledge base of the long-range transport of anthropogenic and biomass burning aerosols over the Arctic region. This work presents an original dataset of remote sensing measurements performed with ground-based and airborne lidars over the North of Norway (Hammerfest) during almost three weeks in May 2016. The ground based lidar measurements along with satellite and model data (FLEXPART-WRF) highlighted 3 interesting cases of long range transported aerosol over Norway, from strong forest fires that occurred in the area of Fort McMurray, in Canada. The authors specifically focus on the measurements both from ground and air borne then enhance the work by proving the coherence on the aerosol optical thickness, coherence on the vertical profiles

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and investigating the origin of the aerosol layers. This topic is of high importance for both the lidar research community and satellite. The planning and implementation of the campaign is well done and a great example for other campaigns (e.g. for calibration/validation of satellites missions) The paper is written well and logically organized. The findings are supported by clear and well-presented analyses. Overall, I consider this manuscript easy to be read with important findings and therefore I recommend the publication.

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