

Interactive comment on “A technical description of the Balloon Lidar Experiment BOLIDE” by Bernd Kaifler et al.

Anonymous Referee #3

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This paper describes the BOLIDE balloon-borne lidar experiment for the detection of polar mesospheric clouds. The advantage of being on a balloon is a signal gain due to the shorter distance between the lidar and the clouds, the guarantee of always having clear sky conditions and the reduction of background light during the day. This lidar is built to be installed on a balloon pod with other instruments to fly in the Arctic or Antarctic. It flew for 6 days in the Arctic region during the PMC turbo campaign in July 2018. A troubling point is that the document only describes the project to fly the lidar from Mac Murdo in Antarctica but it flew from Kiruna in the Arctic. This change of flight location needs to be explained. The document is more of a technical report describing the instrument and its performance than a scientific document. For example, the description of the lidar subsystems in section 3 is very long and rather technical. I

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suggest that we limit ourselves to the essential elements of the document and move the detailed description to the appendix. There are almost no scientific results presented in the document. Some results from BOLIDE lidar during the PMC-Turbo campaign were presented in Fritts et al (2019) but it would be useful for readers to show some examples of observations of polar mesospheric clouds and Rayleigh temperature.

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