

## ***Interactive comment on “Ice Crystal Characterization in Cirrus Clouds II: Radiometric Characterization of HaloCam for the Quantitative Analysis of Halo Displays” by Linda Forster et al.***

### **Anonymous Referee #1**

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This paper describes the radiometric calibration of a surface-based camera designed to detect and characterize halos near the solar disk caused by ice crystals in clouds. It accompanies the early paper by Forster et al. (2017) that introduced a version of the camera. It is a highly technical paper, but also includes a short section on the application of the calibrated halo camera. The paper is very well written. The figures are very clear. I have only two minor suggestions for improvement, as described below. The paper can be accepted after addressing these comments.

1) The introduction is a bit short and lacks a good motivation for such a camera. Please elaborate more on why a calibrated halo camera is useful for cloud, atmospheric and

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climate physics.

2) The application described in section 5 assumes randomly oriented crystals only. Please state this in the text. Please add some discussion on how this type of analysis would possibly be affected by the presence of oriented crystals. In particular, parts of the supralateral arc by oriented columns are very close to the 46-degree halo. Thus, the analysis might be biased if a supralateral arc is present instead of the more rare 46-degree halo. The distinction between the 46-degree halo and supralateral arc is discussed on this website: <https://www.atoptics.co.uk/halo/46orsup.htm> Moreover, I am wondering whether the camera has the resolution and accuracy to, in principle, detect and distinguish other arcs caused by oriented crystals (many are described on the atoptics website).

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