

## ***Interactive comment on “The Aerosol Characterization from Polarimeter and Lidar (ACEPOL) airborne field campaign” by Kirk Knobelspiesse et al.***

### **Anonymous Referee #2**

Received and published: 28 May 2020

**General Comments** This paper describes the ACEPOL campaign in order to test six observation instruments and new developed algorithms for accurate measurements of cloud and aerosol optical properties. The flight campaign and the data provided are useful for reducing aerosol-cloud climate forcing uncertainty. I believe this paper is suitable for publication to Earth System Science Data after considering comments as below.

**Specific comments 1.** The data provided by the ACEPOL campaign are important for this paper, so it's better to describe the specific data types, such as aerosol AOD, or vertical profile of cloud, in Table 3.

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2. The five instruments and the corresponding data was calibrated except AirMSPI, does this instrument need radiometric calibration?

3. Section “Conclusions” should summarize more information about the data archived, including specific data type, spatial resolution, temporal resolution, etc.

**Technical corrections** Line 87 The sentence is difficult to be understood: “It is, perhaps, the closest an airborne instrument can get to a space deployment.” Please rewrite this sentence.

Line 146 “. . . designed characterization of ”-> “designed for characterization of”

Line 164 “mission due to launch in 2022”->” mission due to be launched in 2022”

Line 386 Remove “Flight tracks for the ACEPOL field campaign.” from the sentence “Figure 10 Flight tracks for the ACEPOL field campaign.is a graphical illustration of ACEPOL flight tracks.”

**Reference** Please make the format consistent for all references. For example, some references have DOI link, while some have no DOI.

Line 826 “angle produce a full pushbroom image”->“angle produces a full pushbroom image”

Figure 4(d) Lacks label for y-axis, i.e. “Latitude”

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