Review of: "Challenges and Prospects of Aerosol-Cloud-Precipitation Studies Over Africa"

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Potential competing interests: No potential competing interests to declare.

Review

The subject of this paper is very pertinent and worth exploring in the climate change scenario and in the context of complex terrain patterns over Africa. This is wonderfully well written in some sections, like “Aerosol-Cloud-Precipitation Measurement Techniques and Modelling.” Please give some focus to the regions of Africa vulnerable to climate change and give a special focus on upcoming policies, if any, to support this type of work in Africa. We look forward to further major improvement of the paper considering the readership requirements.

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Abstract: This section should be much more focused on the objective of the work.

Introduction:

- Please check the grammar of the sentence or rewrite the sentence for better understanding: “Aerosols are one of the most important influences on precipitation.”
- This section should be much more elaborative. According to the reviewer, a separate paragraph should be written with more relevant references for 1. Aerosol-Cloud interaction and implication in general. 2. Use case of it in the context of Tropical climate. 3. Use case of it in the context of African climate.
- Authors are requested to check the recent manuscript **Sensitivity of low-level clouds and precipitation to anthropogenic aerosol emission in southern West Africa: a DACCIWA case study** by Adrien Deroubaix, Laurent Menut, Cyrille Flamant, Peter Knippertz, Andreas H. Fink, Anneke Batenburg, Joel Brito, Cyrielle Denjean, Cheikh Dione, Régis Dupuy, Valerian Hahn, Norbert Kalthoff, Fabienne Lohou, Alfons Schwarzenboeck, Guillaume Siour, Paolo Tuccella, and Christiane Voigt” for projecting categorical analysis of cloud with Aerosol.

Field campaigns:

This section is very important in this paper. Please include a table mentioning the field campaign outcomes and limitations in a separate column.

Key Challenges for Aerosol-Cloud-Precipitation Studies:

Please write a review making one paragraph over the challenges on:

- Dynamic nature of the atmosphere,
- The vast geographical scales involved, especially for different rain climatic regions
- The complex interactions between various atmospheric components
- Challenges of different types of observations--satellites, aircraft, ground-based measurements, and associated field campaigns
- Instrument limitations

Prospects for advancing aerosol-cloud precipitation research:

This section has described the scope of future work nicely. Please write some necessity of such type of research before that discussion, like “Properties of precipitation type change non-monotonically with increasing AOD and its effect on society” or any more points according to the authors in this direction.

Conclusion:

I prefer to include the outcomes of the experiments done so far and highlight the gaps that still exist with the existing discussion done there.