

This is a suitable submission for the EGU Journal AMT. I have a large number of specific comments in this round. Once the revised version is available, I will be happy to provide additional input (if any needed).

L 42-43: Remained very general without any specifics: Which measurements (parameters, variables, etc.) were assessed? What is the key scientific motivation of these intercomparison? What do you mean by “consistency” for validating balloon borne measurements against satellite and ground based measurements? Is it property? temporal or vertical variability? Such specifics need to be mentioned for clarity and fruitful scientific discussion. Please note that the documentation is not for the authors but for the readers. So, such specifics are required in an AMT manuscript.

“A good agreement”: Purely a qualitative statement. Please note the MAE, STD, correlation while quantifying such intercomparisons.

“To complement”: In what sense? Temporal or vertical data gap or both? Again, please be specifics.

L 49-50: Please separate these results and present more carefully. Parenthesis are the most confusing components in reporting results.

L 52: “Further Investigation” Again unclear phrase without specific goals or objectives. One can always do “further investigation”. In a research paper, in particular, in abstracts such general phrases do not carry any scientific value.

Overall, the abstract was poorly crafted. Please bring the scientific needs for the statements made at the beginning and provide specific results rather than stating “good”, “consistent” etc.

Introduction

L62: Please update your statement following Sixth Assessment Report of IPCC. 2013 is really outdated now.

L78: “Different” Do you mean many variable results or contradictory. Please clarify.

L 85: Comprehensive picture of what and how?

L84-107: A series of papers got referred here. Readers are curious about “So What”. What are missing in those papers that this manuscript is going to address and how can you improve the existing gaps in knowledge and understanding remained the key of such reviews. This list could be exhaustive otherwise as well.

L109: Best” Please be careful before you demonstrate that. Introduction is not the right place unless some other papers have shown this to be the “Best”.

L115-120: Not appropriate for introduction. Should be in site or methods.

L 121-125: Not required. Please remove. Readers will forget what was said 6 pages ago while reading. Such sentences make a manuscript longer than needed.

Overall, in the introduction, authors should clearly state the objectives of this manuscript.

Describing some instrument and showing the results without any scientific goals remained merely insignificant to move science forward.

Section 2

What is backscatter sonde? Please explain in one or two sentences.

Ceilometer description is added under MPL

Section 2.4: Just replace by “Methods” only

Phrasing of different components do not read well. Many examples: L 165: was made available.

Same occurred at many other places. L 243.

L217: “the entire concept”. What is the concept? I would recommend to add another panel with information about vertical sampling resolution, temporal resolution, dynamic ranges of all the instruments to cover different portions of the atmospheric layers and discuss those as was stated in the reminder part of this section. Table 1 just shows the list of variables and purposes.

Additionally, how all these purposes get together and make the story of your manuscript needs to be documented as well. Otherwise, they still remained as pieces which is not the goal of this manuscript.

L255: Laser ceilometer. Do we have any other types of ceilometers? I am not aware of.

L 262: “Demonstration of the potential of the multi-instrumental approach” What is the scientific goals. If you add another instrument, it will be more. If you take out one, it will be one less. So, we are interested what was the goal of these measurements to observe simultaneously.

L264: Show consistency of balloon borne in-situ measurements. Looks like you and now readers already know the results that their exist consistency. Then, why should we read the rest of the

manuscript. Please follow such basics about presenting your scientific results. Sounds very odd to me as I explained above.

L266: Mixture of a complete sentence and bullet point. Please do either of these...otherwise, readers are confused.

L268: Testing aerosol cloud interactions...what is that? Also, we study “influence” of something on something.. This part remained unclear too.

L270: What is “magnitude of aerosol-cloud interaction”. Readers have no clue at this point as this terminology was not mentioned or reviewed for other papers. I repeat here, please provide the required scientific information to guide the readers. You do not expect readers to find out things but read the materials and understand.

L272: “These” Which ones you are referring to.

L273: Which model and why? Also, model simulates everything about the meteorological processes. What are you aiming at?

Section 3

L 434-437: Please remove. This makes a paper lengthy. That’s all it does.

L 438: When you add a phrase like “consistency” in the header. The result is already known.

L439: Please delete. It is a repetition.

Henceforth, I have a general comment: Before discussing each component of the results, please bring the goal of the work shown, and findings at the end in a summary statement.