

Interactive comment on “Biomass-burning and urban emission impacts in the Andes Cordillera region based on in-situ measurements from the Chacaltaya observatory, Bolivia (5240 m a.s.l.)” by Chauvigné Aurélien et al.

Anonymous Referee #3

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The paper by Aurelien et al. presents a detailed analysis of aerosol optical properties at a remote site of Andean mountains. The measurements are long-term and, therefore, certainly credible in terms of seasonal cycles, however, the novelty is mainly based on somewhat underexplored and sensitive region and that alone does not constitute scientific novelty. The authors make up for publishable results by careful and thorough data analysis separating dataset to represent stable and turbulent atmospheric layers alongside detailed trajectory analysis. The paper can be accepted for publication after addressing mainly minor comments. Last but not least English can be improved with

C1

the help of senior co-authors.

Conclusions could be more concise if a summarising diagram with the main transport patterns and corridors were presented. What matters is not a repeat of study results, but emphasising something about lasting regional impacts. Otherwise, it is just another study of optical properties at a different location.

Minor comments

Line 31. Resulting in lower atmospheric...

Line 33. different aerosol sources.

Line 35. on average, instead of "in average".

Line 41. ...increase in the extinction...

Line 44. How far away? Is stable layer normally the upper layer above the boundary layer or is it free troposphere? I understand it is based on statistical treatment, but the abstract should convey the message without reading all the details.

Line 106-113. There have to be goals, not summary and justification of what and how the study has done.

Figure 1. In insert would help to visualise in the larger region, especially tha the Figure covers only appr. 50x50km.

Line 125. The papers deals with impacts over much larger region, therefore, it is important to describe that larger region, e.g. extending to 200km.

Line 193. Use past tense as measurements represent the past not present day.

Line 276. Correlation is a scientific term, therefore, cannot "correlate to seasons". Use "...values exhibited typical seasonal variation".

Line 327. I am not sure I follow why SL particles are aged longer and transported farther. Please elaborate.

C2

