Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Vertical distribution of aerosol optical properties in the Po Valley during the 2012 summer campaigns" *by* Silvia Bucci et al.

Anonymous Referee #3

Received and published: 3 October 2017

This study investigates the transport of desert dust in the middle troposphere and its intrusion into the planetary boundary layer (PBL) based on the field campaign over the Po Valley. In situ and remote sensing measurement results were exhibited together with Lagrangian air masses transport simulations to explain the effects of meteorological evolution and transport patterns on the aerosol variability. However, the main text of the manuscript needs to be more logically organized, and it is suggested to modify the logical structure of some sections to give clearer conclusions.

For instance, the whole introduction part is in one large paragraph mentioning the characteristics of the Po river basin, previous studies over the Po Valley, mineral dust's adverse impact, and LiDAR observations, which is a little unclear. It is recommended to re-organize some of the sentences or separate this part into more than one paragraph,

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Discussion paper

and provide a clearer logical sequence introducing your study focus.

For the conclusion part, it is recommended to highlight a few key findings or conclusions using refined expression of the evidence.

Finally, some language mistakes have been noticed and revision of the language is needed to give clearer meaning of the sentences. For instance: Page 3, line 15: '. . .basing on the analyses of continuous and vertically resolved particles light scattering and depolarization. . .' -> consider revising

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