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Discussions

Interactive comment on "A novel Mie lidar gradient cluster analysis method of nocturnal boundary layer detection during air pollution episodes" *by* Yingchao Zhang et al.

Anonymous Referee #2

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The paper entitled "A novel Mie lidar gradient cluster analysis method of nocturnal boundary layer detection during air pollution episodes" presents a novel method based on the cluster analysis of the gradient method to detect the nocturnal boundary layer from lidar signals. The method presented is of interest for the retrieval of the nocturnal boundary layer. However, the language and writing of the paper needs to be greatly improved. At its current state, the paper is quite confusing and difficult to follow. Regarding the content, consider the following general comments: Please, use more comprehensive and recent bibliography. Additionally, state clearly what is the advantage of the proposed method compared to previous studies. From your results, the improvement compared to previous methods is not so evident in some cases. Indicate

clearly what is the method used to retrieve the NBLH from the radiosonde data. In section 4.3 different criteria seems to be used to establish a reference NBLH for the comparison with the radiosonde without being clearly justified. In general, the discussion of your results needs to be improved. My suggestion is to resubmit the paper after the language has been carefully reviewed and the previous comments addressed.