

***Interactive comment on “Aerosol lidar observations and model calculations of the planetary boundary layer evolution over Greece, during the March 2006 total solar eclipse” by V. Amiridis et al.***

**Anonymous Referee #2**

Received and published: 30 October 2007

The paper is entitled 'Aerosol Lidar observations and model calculations of...' and more comments about agreements and disagreements between them it will be expected.

In particular, the PBL evolution, that is the central point of the paper, is studied starting from: RSCS lidar profiles, radiosondes profiles and CAMx process analysis. However, RSCS lidar profiles allow the determination of the mixed layer and of the entrainment zone thickness, while PBL height determined by radiosonde and CAMx are discussed.

I suggest to explain why the PBL is not analysed starting from lidar: complete overlap

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region higher than PBL height itself at least for Athens, for Thessaloniki no information about it are present in the current version of the paper. Please add it.

Furthermore some comments about the mixed layer height could be obtained also from radiosonde and CAMx and therefore compared to lidar ones. Simply looking to figure 5 and figure 1, it seems to me that there is a reasonable agreement between the ML lidar derived and the PM10 vertical distribution. But why for Athens the PM10 seems to be confined in a layer lower than 250 m while lidar sees a ML of about 1000m decreasing to 500m?

Technical corrections

Page 1, line 20: remove "although astronomical events", it is not necessary and obvious

Page 3, line 14: ML is not defined, explain the acronym

Page 7, line 18: insert FOV overlap limitation information also for Thessaloniki

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 13537, 2007.

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