In this discussion paper, the lapse rate decrease in the lower part of the EAL was attributed to the absorption effect of soot particles. But the estimation with available absorption coefficients indicated that the effect was unable to result in the large decrease. Thus the conclusion that soot particle absorption was responsible for the lapse rate decrease was not correct. As pointed out by one of the reviewer, the decrease was more likely caused by subsidence.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 1641, 2011.