

Interactive comment on “Evaluation of the smoke injection height from wild-land fires using remote sensing data” by M. Sofiev et al.

M. Sofiev et al.

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Thank you for the important comment! The ambiguity in the text will be corrected in the revised version of the paper. However, the main message stays: during the calibration of the formula, the value of FRP is directly related to the injection height H_p , thus taking into account the contribution of both sensible and latent heat. An implicit assumption behind this step is that the ratio of these contribution is about constant - or that the contribution of the latent heat is noticeably smaller than that of the sensible heat. There are two indirect hints that the second may be closer to reality. Firstly, computations with BUOYANT (no accounting for humidity) appeared the second-best after our formula. The model failed only for few high plumes where the dry-plume assumption is indeed wrong. Secondly, the model of Freitas et al (2007), which shows comparable

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contributions of sensible and latent components, seems to over-estimate the heights, at least the fraction of the plumes reaching the free troposphere (we discussed it in the paper).

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 27937, 2011.

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