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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Evaluation of black carbon emission inventories using a Lagrangian dispersion model – a case study over Southern India" *by* H. S. Gadhavi et al.

Anonymous Referee #1

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Authors have compared measured black carbon (BC) measurements conducted at a site in Southern India with model simulations that use three different emission inventories. A key finding is that these inventories tend to underestimate BC fluxes from biomass burning. The manuscript is well written and gives new insights into the sources of BC in the atmosphere.

I recommend the manuscript for publication in Atmospheric Chemistry and Physics after the authors have addressed the following two minor comments.

1. The authors define one key quantity, potential emission sensivity (PES), at the end

of the first paragraph of the section 3.2 as follows: "When the PES field is multiplied by emission fluxes, the volume integral of this product gives the simulated concentration at the receptor point. " This is a rather indirect and vague way to define PES, I'd propose that the authors define it in more straightforward fashion using an equation (if needed) to make the definition more concise.

2. A second key quantity, fire radiative power (FRP), is not explicitly defined, but the authors only provide references where this can be found (second paragraph of Section 2). I'd propose that the authors include a explicit definition of FRP in the manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 26903, 2014.