

Interactive comment on “Effect of smoke on the transmissivity of photosynthetically active radiation inside the canopy” by M. Yamasoe et al.

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All the comments and suggestions were important for the improvement of the MS. For this reason, the authors would like to thank the careful revision performed by the referee.

General comments 1. As suggested, the analysis was conducted in hourly mean basis, which helped clarifying some points in the MS. In fact, not only the aerosol or the cloud layers affected NEE of CO₂, changing the fraction of diffuse or the availability of PAR, but also variations on water vapor pressure deficit contributed to the high variability observed on NEE data. 2. Since we did not conduct measurements to estimate LAI, results published by Rummel et al. (2002) for the same site were used. With the data, an exponential fitting was performed, and an empirical estimation of the extinction

coefficient could be made. Canopy extinction coefficient varied from 0.55 to 0.43, as aerosol optical depth increased from 0.26 up to 2.53 (Fig. 6.b in the MS). 3. With the inclusion of water vapor pressure deficit (VPD), which increases with air temperature and decreases with relative humidity, and the finer time step analysis, it was possible to observe differences between morning and afternoon measurements. Morning measurements of NEE presented more negative values than the ones performed in the afternoon. According to the results, there is indication that this difference is due to the fact that VPD in the afternoon can present higher values than in the morning, inhibiting photosynthesis or enhancing respiration during that period of time. 4. The title of the MS was changed as suggested by the referee. 5. Changes were performed in accordance to suggestions. 6. Already included. 7. All modifications suggested on the technical comments were performed, except the suggestion number 9. According to the authors of the mentioned work (Koren et al., 2004), this aerosol effect was termed semidirect by Hansen et al. (1997), which was included in the reference list. The complete reference is: Hansen, J., Sato, M. and Ruedy, R. Radiative forcing and climate response. *J. Geophys. Res.* 102 D6, 6831-6864, 1997. 8. The methodology was incorporated in the MS, since this discussion of correcting hazemeter and MODIS data based on AERONET results was not published previously.

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