

Interactive comment on “Contribution of fungi to primary biogenic aerosols in the atmosphere: active discharge of spores, carbohydrates, and inorganic ions by Asco- and Basidiomycota” by W. Elbert et al.

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The anonymous referee #2 (i) addresses a critical remark concerning choice of CBL height, (ii) points to the release of spore fragments, and (iii) gives a technical recommendation. In response, I should like to make the following comments.

i) The atmospheric boundary layer (ABL) is known to be variable, and can reach heights of 2 km or more during the day at mid-latitudinal sites (Strawbridge and Snyder, 2004; Wandinger et al., 2004), as well as in the Tropics (von Engel et al., 2005). Night-

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time ABL, in contrast, is usually much lower, gaining a thickness of a few hundred meters only (Strawbridge and Snyder, 2004; Meixner, 2006). Using ECMWF data, A. von Engel (personal communication, 2006) calculated mean planetary boundary layer (PBL) heights separately for marine and continental areas for the years 1998–2006. While the mean marine boundary layer (MBL) was at 0.9–1.15 km, the mean continental boundary layer (CBL) ranged from 0.65 to 1.0 km. In their textbook, Seinfeld and Pandis (1998) also mentioned a mean planetary boundary layer (PBL) height of about 1 km. We therefore believe that the use of such a value in our calculation of a first estimate of the globally averaged land surface emission flux of ABS should be allowed. However, if it were assumed that the average CBL were 2 km thick, a twofold flux of spores would result, i.e. about $120 \text{ m}^{-2} \text{ s}^{-1}$ instead of $60 \text{ m}^{-2} \text{ s}^{-1}$.

ii) Concerning the fragments of spores, see Taylor (2006).

iii) For the different types of data illustrated in each of the figures, no consistent set of variability/uncertainty indicators is available (standard deviations (SD), full range, or no indicator). Therefore we prefer to keep the different indicators in the figure captions.

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