

Interactive comment on “Fungal spores overwhelm biogenic organic aerosols in a mid-latitudinal forest” by Chunmao Zhu et al.

Anonymous Referee #1

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The manuscript “Fungal spores overwhelm biogenic organic aerosols in a mid-latitudinal forest” describes biomarkers of PBAP and secondary organic aerosols (SOA) for their diurnal variability in a temperate coniferous forest in Wakayama, Japan. This paper, present for the first time highly time-resolved results that fungal spores overwhelmed BVOC oxidation products in contributing to OA especially in nighttime. In general, this manuscript is well organized and the discussion is reasonable. Thus, I believe it can be accepted after a minor revision. Major comments: (1) Updating the references used in this manuscript to more current state is suggested. (2) Experimental section should include detailed information about the statistical analysis conducted in the manuscript. (3) Line 105: A stability study for molecules should be added, for how kept the quartz samples and how long and where kept the liquid samples before analysis? (3) Line 226: A deep discussion about Table 1 should be added. Why

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isoprene-SOA tracers and monoterpene-SOA tracers showed positive relationship with SO₄²⁻ and no relationship with NO₃⁻. Moreover, a deep discussion of the relevant mechanism of SO₄²⁻ and SOA tracers should be added. (4) Line 155: A large part of section 3.1 and 3.2 refers to supplemental material information making it hard for this reviewer/reader to follow. (5) The authors claimed that fungal spores overwhelmed BVOC oxidation products in contributing to OA, which is opposite to previous studies. However, there was not any reference and no data from other literature compared. More discussion or explanation should be added to support this conclusion.

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