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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Dominant contribution of oxygenated organic aerosol to haze particles from real-time observation in Singapore during an Indonesian wildfire event in 2015" *by* Sri Hapsari Budisulistiorini et al.

Anonymous Referee #2

Received and published: 3 September 2018

The manuscript entitled, "Dominant contribution of oxygenated organic aerosol to haze particles from real-time observation in Singapore during an Indonesian wildfire event in 2015" by Budisulistiorini et al presents a comprehensive set of measurements on the organic and inorganic chemical composition of particulate matter in Singapore influenced by Indonesian wildfire, using both online and offline techniques. The results highlight a large fraction (~50% of total OA) of oxygenated OA (OOA) during the haze episodes, indicating the importance of POA oxidation and SOA formation for wildfire haze. In general, I found this manuscript is well written, and most findings follow from

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Discussion paper

the author's analysis. There is just one issue that may preclude publication of current version in ACP.

Major concern:

pH calculations. The authors calculated pH using thermodynamic model ISORROPIA-II with input of particle-phase concentrations of sulfate, nitrate, chloride, and ammonium. They show that the particles are highly acidic as indicated by an average pH of 1.2. This is unexpectedly low as peat burning also co-emit ammonia. However, as already noted by the authors, the unavailability of gas-phase ammonia data may largely bias the calculated pH. I also agree with Reviewer #1 that this bias is not reflected in the standard deviation. In my point of view, these pH calculations without constraints from gas-phase measurements do not add much value to this manuscript, and therefore could be removed from the manuscript. The calculated LWC, however, might be still useful as it is not sensitive to the gas-phase input.

Technical corrections:

Page 4 Line 2: (0.2-0.3%): should this be 20-30 %?

Page 4 Line 14 and Line 17: symbols are not displayed correctly

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