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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Influence of vegetation on occurrence and time distributions of regional new aerosol particle formation and growth" *by* Imre Salma et al.

Anonymous Referee #2

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This manuscript investigated the influence of vegetation on occurrence and time distributions of NPF using a long term measurement dataset in Budapest. The authors pointed out the key parameters, including H2SO4, O3, GRad, WS, CS, and RH, that influencing NPF occurrence frequencies. In addition, the authors also investigated the relationship between fNPF with vegetation activities. In general, this manuscript was very interesting and valuable. I thus recommend it can be published in ACP after addressing the following comments.

1. To our best knowledge, the fundamental relationship between NPF and vegetation activities should be via biogenic VOCs, which can influence the HOM formation, as well

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Discussion paper

as oxidation capability. Therefore, I may suggest the authors can add more discussions on biogenic VOCs, especially monoterpene.

2. Vegetation activities may also have related to the growth rates (GR) of NPF besides fNPF. It would be good if the authors can add some discussions on the relationship between GR and vegetation activities.

3. Sulfuric acid is the most critical parameter influencing NPF. However, it was simulated but not measured in this study. Did the authors have some measurement data to verify the proxy to calculate sulfuric acid?

4. Can fNPF be predicted using simulated sulfuric acid and CS?

5. Line 53: omit “extremely low volatility organic compounds (ELVOCs) or”

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