

Interactive comment on “Particle size distribution and new particle formation under influence of biomass burning at a high altitude background site of Mt. Yulong (3410 m) in China” by Dongjie Shang et al.

Anonymous Referee #2

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This manuscript reports the results of particle aerosol size distribution and new particle formation at a high altitude background site of the southeast Tibet-Plateau. This study also analyzes the influences of biomass burning on particle size distribution and potential cloud condensation nuclei. Based on the co-located measurements such as VOCs, SO₂, NO_x, CO and so on, the influence factors on NPF were also discussed. This manuscript is suitable to be published in ACP after revision. There are some specific comments for authors:

1. Instruments: there are two set of scanning mobility particle sizer (SMPS) and an

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aerodynamic particle sizer (APS) used for PNSD. When combined these data, how to deal with the overlap size range, especially for two SMPS? 2. About backward trajectory analysis, why use different models for that, what's the difference? 3. Figure 4a, there are something wrong, the mean value is not in the range of 25-75% percentile. 4. About New particle formation events: there are only three so-called NPFs during this observation period. One of them is defined by authors “Off-site NPF” during which nanoparticles were formed in PBL and transported to the site and a burst of N3-25 occurred at around 18:00, with FR at 1.64 cm⁻³s⁻¹. This is contradicted. All three NPFs have different characteristics. The parameters such as FR, GR, CS may not representative for this region statistically. 5. In conclusion: Such points are not discussed in the manuscript, but in the conclusion, such as “the atmosphere of Mt. Yulong exhibited a feature of strong oxidation”, “Our study provided important data in vertical profile of particles at Tibet Plateau” 6. The elevation of sampling site: 3140m or 3410m? 7. Line 106: Silicon diffusion tube?

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