

## ***Interactive comment on “Ambient measurement of fluorescent aerosol particles with a WIBS in the Yangtze River Delta of China: potential impacts of combustion-generated aerosol particles” by X. Yu et al.***

### **Anonymous Referee #2**

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I think the authors investigated an important topic regarding fluorescent particles in big cities, and the results contributed to the understanding of the ambient chemistry as well as microbial aerosol particles. The manuscript was well written and the analysis of the data was well performed. I recommend the publication of this work after minor revisions.

Below are some thoughts for them to further improve the manuscript:

1. To my experience, their fluorescent # concentration was too high for Nanjing. Based on previous UV-APS data, it was about 104/m<sup>3</sup> in the summer (June-July time period).

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It was also observed that there were three fluorescent peaks (1, 2.5, and 3  $\mu\text{m}$ ). Maybe the results were different because of different instrument and different time of the measurements. In Nanjing, probably fungal spore concentration levels are higher. If they can provide some culturable or PCR data, it would significantly improve their paper.

2. It was still not clear that how much percent of the measured fluorescent particles can be attributed to real microbial aerosol particles (e.g., bacteria and fungal spores). The authors mentioned that combustion generated aerosols might contribute to the fluorescent particles. Could the authors further expand the discussion about the types of combustions? e.g., agriculture burning, traffic, cooking, coal burning and etc. What was the major contributor?

3. Their results are based on one city measurement, and some results might be limited because of different climatic conditions, ecology settings and human activities. Nonetheless, it seems the diurnal pattern was similar to those of other parts of China and the world because of the boundary layer effect. In future studies, it would be great to see the fluorescent particle diurnal pattern for those regions without boundary layer effect or at least minimal.

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