

Interactive comment on “Low hygroscopicity of organic material in anthropogenic aerosols under pollution episode in China” by Juan Hong et al.

Anonymous Referee #3

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The authors present a study of low hygroscopicity of organic material in anthropogenic aerosols under pollution episode in China. The data set is rich, but the manuscript has two major deficiencies that should be addressed prior to considering further review. (1) The upper particle size ranges detected by different instruments are quite different: 145 nm for HTDMA, 1 μm for ACSM, and 2.5 μm for Aethalometer. Before drawing any conclusions, the authors should consider the uncertainties caused by different size ranges of particles being measured when integrating all dataset. (2) Most of previous studies showed that the hygroscopic growth factors of secondary organic aerosols are below 1.2. For example, the water soluble organic carbon measured by Martin Gysel et al., has a hygroscopic growth factor of up to 1.17. In this study, the HGF_{org} below 1.1 is actually comparable to those in other observations. Therefore, the low hygroscopicity

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of organic material can not be a compelling result. Reference Gysel, M., et al., Hygroscopic properties of water-soluble matter and humic-like organics in atmospheric fine aerosol. Atmos. Chem. Phys., 2004. 4(1): p. 35-50.

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