

Interactive comment on “Real-Time Aerosol Optical Properties, Morphology and Mixing States under Clear, Haze and Fog Episodes in the Summer of Urban Beijing” by Rui Li et al.

Anonymous Referee #1

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The authors investigated the optical properties, morphologies and their relationship of aerosol particles collected in a typical haze pollution in the atmosphere of urban Beijing, China. The optical properties of aerosols played an important role in climate change. Up to date, little information about the influence of aerosol morphologies on the optical properties of haze particle is available. So, the topic focused by this manuscript is important and the authors presented interesting results. The result presented herein could make some contribution to the field of atmosphere chemistry. However, the technical quality of the manuscript is not ready for publication. Especially, English writing should be improved greatly. The special comments are as follows:

1. The English thorough the manuscript are suggested to be improved by an English

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native speaker. 2. The abstract immediately begins with specific results, without providing an overview of the study or its objectives. 3. Line 28: Please give a definition of soot fog period. 4. Line 284: the abbreviate of correlation coefficient is “r” not “R”. The valid number thorough the manuscript should be consistent. 5. Line 371: Is “organic matter” a right expression? Tar ball and soot are also organic matter. The statement that organic matter could be traced to the direct emission such as biomass burning or the second reaction between the VOCs with ozone is speculative. More discussion should be conducted to demonstrate this statement. 6. Line 396: How does the cubic shape of K-rich particles suggested they have not undergone long transportation? More clarification needed. 7. TEM analysis can only observe limited amount of particles. Could you assure the quality of the data? 8. More literature published after 2016 about the optical properties should be cited.

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/acp-2016-976/acp-2016-976-RC1-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-976, 2017.

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