

Interactive comment on “Characterization and source apportionment of organic aerosol at 260 m on a meteorological tower in Beijing, China” by Wei Zhou et al.

Anonymous Referee #2

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The manuscript by Zhou et al. presents a detailed chemical characterization of organic aerosol at 260 m on a meteorological tower in urban Beijing by using ACSM measurements. Although the real-time measurements of aerosol particle composition at 260 m have been reported previously, this study is unique in terms of the first source apportionment analysis of OA at 260 m by using the multi-linear engine (ME-2) with the constrained POA factors identified at ground site. Fossil fuel-related OA (FFOA) dominantly from coal combustion emissions showed a large increase during heating period (HP). The SOA composition (i.e., LO-OOA and OOA) changed significantly from non-heating period (NHP) to HP. In addition, this study also observed very different OA composition between ground level and 260 m. Bivariate polar plots and back trajectory

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analysis further illustrated the different source regions of OA factors in different seasons. This manuscript is generally well written and I recommend it for publication after minor revisions.

Comments: 1. 2. FFOA was still a mixture of HOA and CCOA. Did the authors try to extend the PMF solution of HR-AMS to more factors to see if HOA and CCOA can be separated? And also a comparison and discussion with previous AMS-resolved OA factors by the same group in urban Beijing during wintertime will be useful as sometimes HOA and CCOA can be separated but sometimes not. 3. Please define the polluted and clean episodes in the text. 4. Line 20-25 in Page 2, “and also highlight the importance of”, change “highlight” to “highlighted”. 5. Line 5-10 in Page 3, change “as a response of” to “as responses of”. 6. Line 10 in Page 3, change “was all limited” to “were all limited”. 7. Line 15-20 in Page 4, change “that were measured with HR-AMS” to “that was measured with HR-AMS”. 8. Line 20-25 in Page 5, change “followed by a short period of clean days” to “followed by short periods of clean days” 9. Line 25 in Page 6, change “in the major mechanism” to “is the major mechanism”.

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