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Interactive comment on "Characterization of organic aerosol produced during pulverized coal combustion in a drop tube furnace" by X. Wang et al.

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This article presents some interesting conclusions regarding the chemical mixing state of particles produced from the combustion of pulverised coal. It would be useful, however, to expand the discussion to cover differences between the single particle mass spectra reported here and those obtained for power generation-related coal combustion and domestic coal combustion in other previous studies (Pekney et al., 2006; Bein et al., 2006; Bein et al., 2007; Healy et al., 2010). Ambient domestic coal and wood combustion particles have been separated using single particle mass spectrometry previously, and their assignments confirmed through combustion experiments (Healy

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et al., 2010). Potassium content was found to be very low in domestic coal combustion particles relative to wood combustion particles in that case. Domestic coal combustion particle composition has also been investigated more recently using an aerosol mass spectrometer (Dall'Osto et al., 2012).

References:

Bein, K. J., Zhao, Y., Pekney, N. J., Davidson, C. I., Johnston, M. V., and Wexler, A. S.: Identification of sources of atmospheric PM at the Pittsburgh Supersite—Part II: Quantitative comparisons of single particle, particle number, and particle mass measurements, Atmospheric Environment, 40, 424-444, 2006.

Bein, K. J., Zhao, Y., Johnston, M. V., and Wexler, A. S.: Identification of sources of atmospheric PM at the Pittsburgh Supersite—Part III: Source characterization, Atmospheric Environment, 41, 3974-3992, 2007.

Dall'Osto, M., Ovadnevaite, J., Ceburnis, D., Martin, D., Healy, R. M., O'Connor, I. P., Sodeau, J. R., Wenger, J. C., and O'Dowd, C.: Characterization of urban aerosol in Cork City (Ireland) using aerosol mass spectrometry, Atmos. Chem. Phys. Discuss., 12, 29657-29704, 10.5194/acpd-12-29657-2012, 2012.

Healy, R. M., Hellebust, S., Kourtchev, I., Allanic, A., O'Connor, I. P., Bell, J. M., Healy, D. A., Sodeau, J. R., and Wenger, J. C.: Source apportionment of PM2.5 in Cork Harbour, Ireland using a combination of single particle mass spectrometry and quantitative semi-continuous measurements, Atmos. Chem. Phys., 10, 9593-9613, 10.5194/acp-10-9593-2010, 2010.

Pekney, N. J., Davidson, C. I., Bein, K. J., Wexler, A. S., and Johnston, M. V.: Identification of sources of atmospheric PM at the Pittsburgh Supersite, Part I: Single particle analysis and filter-based positive matrix factorization, Atmospheric Environment, 40, 411-423, 2006.