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Interactive comment on “Characterization of primary and secondary wood combustion products generated under different burner loads” by E. A. Bruns et al.

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PAH molecular ions have been shown to occur at even molecular masses. In the case of the HR-ToF-AMS, the strongest signals are seen at the $[M]^+$ unless there are an odd number of carbons, in which case the strongest signal is typically at $[M-1]^+$ (Džepina et al. 2007). In Table 2 of the manuscript, the authors provide a list of “PAH parent ions” and include five ions with odd molecular masses (m/z 139, 163, 165, 189, 199). It is not made clear which PAH compounds these ions are expected to be originating from. Bente et al. (2009) had previously attributed some of these ions (m/z 139, 165, 189) to alkylated aromatic fragments of PAH compounds. Could the authors clarify how they

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determined the classification of these odd-molecular mass ions?

References

Bente, M., Sklorz, M., Streibel, T. and Zimmermann, R. (2009). Thermal Desorption-Multiphoton Ionization Time-of-Flight Mass Spectrometry of Individual Aerosol Particles: A Simplified Approach for Online Single-Particle Analysis of Polycyclic Aromatic Hydrocarbons and Their Derivatives. *Analytical Chemistry* 81:2525-2536.

Džepina, K., Arey, J., Marr, L. C., Worsnop, D. R., Salcedo, D., Zhang, Q., Onasch, T. B., Molina, L. T., Molina, M. J. and Jimenez, J. L. (2007). Detection of particle-phase polycyclic aromatic hydrocarbons in Mexico City using an aerosol mass spectrometer. *International Journal of Mass Spectrometry* 263:152-170.

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