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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Organic molecular markers and signature from wood combustion particles in winter ambient aerosols: aerosol mass spectrometer (AMS) and high time-resolved GC-MS measurements in Augsburg, Germany" *by* M. Elsasser et al.

Anonymous Referee #1

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This paper is dedicated to the source apportionment of organic aerosols in a medium size German city during wintertime, and in particular to wood combustion. It is clear, concise and well-written. It provides valuable information that could be extrapolated elsewhere. It would however be of great interest to discuss more deeply on the following issues: 1) the contribution of HOA to total OM is very significant compared to most of previous studies in urban environment. Due to heavy traffic ?, 2) the morning peak of AMS-derived wood burning contribution is in good agreement with previous wintertime

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studies using AMS (and multiwavelength aethalometers) but not with GC-MS analysis. How could this latter phenomenon be explained ? 3) As mentioned in introduction, WC emits a considerable amount of SOA precursors. In which extent could thus WC contributes (indirectly) more importantly to OM concentrations than seen by PMF on organic mass spectra ? 4) a probable, but not seen here using AMS and PMF, contribution of cooking emissions (cf. GC-MS dodecanoic acid peaks) might be in good accordance with recent studies in some other European cities (e.g. Allan et al., Atmos. Chem. Phys., 2010).

Specific comments: - P. 4834, l. 3: during the winter season - P. 4834, l. 26: . . . source apportionment methodologies - P. 4842, l. 14-16 : unclear. - P. 4846, l. 3: in wintertime

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Interactive comment on Atmos. Chem. Phys. Discuss., 12, 4831, 2012.