

Interactive comment on “Advanced source apportionment of carbonaceous aerosols by coupling offline AMS and radiocarbon size segregated measurements over a nearly two-year period” by Athanasia Vlachou et al.

Anonymous Referee #2

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The manuscript presents results from an analysis of atmospheric filter samples collected during 2013 and 2014 in Switzerland using offline HR-ToF-AMS and carbon-14 measurements. The results give increased insights into the sources and types of aerosols observed. Especially interesting is the focus on the type/source of the precursor for the factors instead of the more commonly used degree of oxidation or volatility. The methods and the descriptions of the data analysis are very thorough and a good deal of work is done in calculating and communicating the uncertainties. This manuscript presents results that follow expected trends in the formation and process-

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ing of atmospheric aerosols and thus serves as a good demonstration of the feasibility of combining these two analyses. I recommend addressing two minor issues.

1) A mention of blanks is made with respect to the radiocarbon analysis, but there is no discussion of how blanks were handled for the AMS analysis. Were blanks extracted and prepared in the same manner as AMS samples? How did the authors account for the fact that dilute solutions may not show aerosol signal in the AMS when atomized, despite there being some level of organic material in the solution?

2) The authors could increase readability of the manuscript by providing the names corresponding to acronyms in the text the first time the acronyms are used. This includes the factors as well as all components in equations. Also, the letter labels (a,b,c, and d) are missing on Figure 3. It would also be beneficial to have names for the factors in all of the corresponding figure captions.

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