Atmospheric
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Discussions

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Interactive comment on "Inverse relationship between the degree of oxidation of OOA (oxygenated organic aerosol) and the oxidant OX ($O_3 + NO_2$) due to biogenic emissions" *by* F. Canonaco et al.

Anonymous Referee #1

Received and published: 17 December 2014

This paper presents results from measurements made in Zurich, Switzerland for one year using an aerosol chemical speciation monitor. PMF (positive matrix factorization) analysis using a multilinear engine algorithm was applied to winter and summer data. The sources in each season were investigated. The data was discussed in f43 and f44 space to understand the aging of the aerosol and investigate if precursor sources can be inferred from these values.

Organic aerosols are a hot topic in aerosol science. Within that, how organic aerosols

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change as the aerosol ages is of particular interest since it is still not well understood. This paper is utilizing data from a commonly used aerosol instrument to understand if the degree of aging (or oxidation) can be linked to its source. Many in the atmospheric community would be interested in this work.

Overall, this is a good paper. The methods section provides a really great description of PMF analysis, probably one of the most detailed and easiest to follow. The analysis seems scientifically sound. I really just have a handful of minor comments, which are outlined below to help with the flow of the paper, that need to be addressed before the manuscript can be considered for publication.

Specific Comments: Introduction Page 28081, Line 2 – Suggest adding have before generally

Page 28082, Line 1 – Suggest adding experiments after chamber

Page 28082, Lines 13, 15, and 18 – The chemical formulas used have not been defined

Acknowledgements Page 28092, Line 4 – Suggest changing author to authors

References Page 28092, Line 11 – Accent marks are missing from Prevot

Page 28093, Line 20 – Accent marks are missing from Prevot

Page 28093, Line 26 – Believe levels Of O-3 should be levels of O_3

Page 28093, Line 27 – Believe NO chi should be NO_x

Page 28094, Line 10 – Accent marks are missing from Prevot

Page 28094, Line 25 – Accent marks are missing from Prevot

Page 28095, Line 18 – Accent marks are missing from Prevot

Page 28095, Line 32 – Accent marks are missing from Prevot

Page 28096, Line 16 – Accent marks are missing from Prevot

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Page 28097, Line 26 – Accent marks are missing from Prevot

Figures Figure 2 -Believe f43 on the y-axis of plot c should be in italics

Figure 4 -Believe f44 and f43 on the y- and x-axes should be in italics

Figure 5 -It looks like there is something overlapping with the units on the y-axis of plot a

Supplementary Material Winter 2011 Page 1, Line 1 – Suggest removing the the before winter

Page 1, Line 3 – Suggest changing peak a to peak at

Page 1, Figure S1 caption – In first line of caption suggest changing for the winter to during winter

Page 2, Figure S2 caption – Suggest changing for the winter to during winter

Page 3, Line 1 – Suggest removing the the before summer

Page 3, Figure S4 caption – In first line of caption suggest changing over the winter to over summer

Page 4, Figure S5 caption – In first line of caption suggest removing the the before summer

Page 4, Figure S6 – The units for EC should be ug C/m3

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 28079, 2014.

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