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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Determination of Primary combustion source organic carbon-to-elemental carbon (OC/EC) ratio using ambient OC and EC measurements: Secondary OC-EC correlation minimization method" *by* Cheng Wu and Jian Zhen Yu

Anonymous Referee #1

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Dear Editor, this MS presents a statistical assessment of an alternative method to quantify secondary organic carbon (SOC) in ambient air samples. This method is an alternative to the classic EC tracer method. It is a useful assessment of an alternative method which seems to perform rather well, and therefore merits publication. Reading is somewhat complicated due to the frequent use of abbreviations (eg, fSOC), though. A more fluent writing style would help the reader.

Some specific comments:

- line 75: I believe Pio et al propose yet another method, using a subset of samples with 5% lowest ratios and discarding the 3 lowest... I don't have the exact reference right now, but please add. - line 90: any reason why the Millet method was overlooked? - line 211: please elaborate on why the OCEC10% method provides worse results - line 226: I don't understand the different behavior of the OCEc10% amend the OCeCmin methods, given that they are both subsets of the total dataset with specific characteristics of representing 1% and 10%. Why is their behavior different? - section uncertainty: with some analytical methods (e.g., TOT) the uncertainty is mostly constant (0,1-0,2 micrograms/cm2), please discuss how this would affect the results in this section. - line 317, please clarify what the authors mean by "the irrelevance of EC and SOC", it is unclear to me

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