

Interactive comment on “Assessment of wood burning versus fossil fuel contribution to wintertime black carbon and carbon monoxide concentrations in Athens, Greece” by Athina-Cerise Kalogridis et al.

Anonymous Referee #1

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As asked by Associate Editor, please find herewith clarifications about RC1 referee major comment related to the use of the "CO/NO_x ratio" approach.

From what authors are writing in the abstract and introduction, it sounds like they are actually using results they obtained from this approach: - Abstract, lines 19-20: "For an independent evaluation of the results, we additionally estimated the wood-burning and fossil fuel contribution to CO, calculated on the basis of their CO/NO_x emission ratios" - P.2, lines 41-42: "Two independent methods based on the relations between CO and co-products of combustion processes were used and compared for the esti-

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mation of CO originated from traffic and wood combustion." However, when presenting/mentioning results from the "CO/NO_x ratio" approach, authors do not provide results from this approach about CO source apportionment (i.e., are not using these outputs to estimate the contribution of biomass burning emissions to CO). Instead, the reader is learning there that "CO-NO_x linear model always over-estimated the wood burning contribution to CO, compared to the CO-BC_{ff}-BC_{wb} model. The overestimation of the CO-NO_x linear model is probably the result of daytime photochemical loss of NO_x that is not taken into account in our study." (P.9, lines 12-14). I would then assume that this approach is eventually not accurate in the present case, and is therefore not used here to estimate the wood-burning and fossil fuel contribution to CO. For this reason, I would strongly recommend presenting the use of the "CO/NO_x ratio" approach in another way (or to simply skip it).

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-854>, 2017.

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