This study investigates the trends of PM10 sources and oxidative potential (OP) over an 11-year period in Grenoble, France. With 1570 filter samples spanning over a decade, this study presents a rather unique dataset investigating how PM10 sources, derived using positive matrix factorisation, and oxidative potential using two assays (ascorbic acid and DTT) evolve over a decade. Relating PM10 sources to oxidative potential highlights the higher OP associated with anthropogenic sources. The authors demonstrate downward trends in PM10 concentrations over this period, as well as a reduction in anthropogenic source contributions to PM10, notably primary traffic and biomass burning. OP measurements also reveal a decrease in volume-normalised AA and DTT derived OP, relating this to the reduction in anthropogenic emissions. Overall, this study is well designed and presented and provides new insights into the longer-term trends of both PM10 sources and OP in Grenoble. This study is well suited for publication in atmospheric chemistry and physics. Below are some specific comments to be addressed.

**Specific Comments:**

Line 54-58 – Whilst I agree that it is important to link sources to oxidative potential, I don't think understanding compositional drivers of OP should be dismissed. Understanding the chemical constituents of specific sources which increase OP is also important, to understand why a particular source has higher OP activity. Especially when considering the intrinsic OP of sources presented in this study, understanding what components within these sources drives OP is also informative for OP abatement.

Line 120 - What was the selection criteria for measuring these specific time points for measurement?

Line 140 – the specific composition of the synthetic lung fluid should be explicitly stated here.

Line 160 – Over what timeframe were filters measured? Were all filters analysed across different time periods, or were all filters across the 10-year period analysed more recently? How were the filters stored over this time? Were any tests performed on filters to observe any compositional variability during storage for over a decade? These are important considerations given the long time over which filters were collected for OP analysis and should be discussed.

Line 171 – Whilst the distributions presented in Figure S2 look reasonable, the R2 for metal imputation is poor in some cases, as presented in Table S1. A time series comparing imputed vs measured metals in the supplement would be useful to better assess the robustness of imputation here.

Line 118 – It is surprising no Fe was measured using ICPMS, given its importance for OP and PMF source factor derivation. Why was no Fe data included?

Line 290-293 – are dust etc mentioned here PMF source factors, or assumed based on composition? Unclear from the discussion here.

Line 415 – it is unclear what "reactivity due to transport" refers to here.

Line 479 – The y-axes here are unlabelled and no description is given in the Figure caption, please add y-axes to these plots and also in Figure 9, and Figures S6, S7, S16, S17.

Line 505 – What is the rate of reduction of wood sales, and did you perform any additional statistics to associate wood burning with wood sales? Seeing a statistical association here would be interesting.

Line 573 – it is unclear why the non-linear models tested here (random forest, multiple layer perceptron) cannot give intrinsic OP values for each source? Please define RF and MLP acronyms here too.

Line 590 – regarding natural sources, no secondary organic aerosols are considered from biogenic sources? So this statement refers only to primary natural emissions? This should be clarified.

Line 598 – OPv is normalised per volume (m-3), not per PM10 mass, as this would be OPm? The word normalised in this context is confusing.

Line 620 – Figures S16 and S17 show interesting trends for OP, and in line with the main aims of the manuscript. I would suggest moving these figures into the main discussion here.

Line 641 – Why are figures not included to show the OPv trends for AA and DTT, similar to S16/S17 for OPm?

Line 643 – As mentioned above, the use of normalised here is a bit confusing.