

The reviewer appreciates the authors' efforts in addressing the previous comments and criticisms associated with the submitted manuscript. The revised manuscript has improved and is recommended for publication in ACP, subject to the incorporation of the following minor suggestions aimed at enhancing clarity and consistency:

Lines 20 & 22: It appears that the terms “scenarios” and “cases” are used interchangeably. To prevent any confusion, please choose one term and consistently apply it throughout the manuscript.

Line 21: Suggest replacing “sources” with “source components” to more accurately reflect that PMF factors may represent not only direct emission sources but also formation processes. This terminology will better indicate that these factors are mathematical constructs that help in understanding the contributions to the data, including combinations of multiple sources or transformation processes, rather than specific, isolated sources.

Line 21: The term “unambiguous” is used in the abstract. If this pertains to the specificity enabled by the TAG method described in the main text, please clarify this connection directly in the abstract to enhance reader understanding.

Lines 323 & 326: To avoid potential confusion (and follow standard language in the PMF community), replace “simulations” with “modelling” when referring to PMF runs. For instance, use “...between the PMF-modelled and observed...” in line 326 and apply this change consistently throughout the manuscript and in Table S8 caption.

Line 391: Change “composition” to “component”.

Lines 396 & 397: The terms “markers” and “tracers” seem to be used interchangeably. Please select one and use it consistently throughout the document. Additionally, provide a justification if these terms have distinct definitions.