

Interactive comment on “Indoor/outdoor relationships of quasi-ultrafine, accumulation and coarse mode particles in school environments in Barcelona: chemical composition and sources” by M. Viana et al.

Anonymous Referee #2

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This is a review of Indoor/outdoor relationships of quasi-ultrafine, accumulation and coarse mode particles in school environments in Barcelona: chemical composition and sources”. Authors, with their work, try to reach a praiseworthy objective of characterizing the size segregated components of indoor and outdoor PM in school environments in Barcelona. The produced data set and the stated discussion could be of great value, and it was a well written manuscript. Thus this work is suggested for publication by addressing the following comments.

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1- In the title I would suggest to omit the “sources”. Despite some speculation about the sources, a source identification or apportionment analysis was not accomplished. 2- In the introduction section, the rationale behind doing the study needs to be more clarified. The author should mention the originality of the paper considering existing literature. Do we just expect to see PM characterization in a new location (Barcelona school environments) or it includes more novelty. The produced data set could be of great value, however a reader needs to know if there is any novelty or originality in the adopted method as well. In which case, such novelty needs to be also reflected in the methods and findings of the paper. 3- In the introduction section, there is a focus on the size fractionated particle formation process and sources. I would suggest to focus on the main subject of the paper including some explanation of the link between such formation process and IN/OUT PM composition. 4- In the methods section the method of data analysis is not mentioned. As an example the content of page 8 line 23 to Page 9 line 7 are more of such methodology than results, which could be moved to the methods section. 5- In the results section: few discussion and explanation is being repeated several times, it could be better if the authors merge some sections where applicable, summarize them and avoid such repeating. 6- In section 3.2, several times it is referred to the size distribution of different substances as unimodal or bimodal distributions. Such statement could be argued by having just three size spans.

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