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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Presenting SAPUSS: solving aerosol problem by using synergistic strategies at Barcelona, Spain" *by* M. Dall'Osto et al.

Anonymous Referee #2

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This paper contains an introduction to SAPUSS, a project that involved measurements at several sites in and around Barcelona, Spain. It is intended to provide a basis for a series of papers for a special issue in Atmospheric Chemistry and Physics on findings from the SAPUSS project. The authors present detailed information about the sites and instrumentation and also the key objectives of SAPUSS. Besides that, the paper includes a variety of short sections presenting first results and touching diverse topics such as air mass back trajectory analysis, local meteorology, levels of NH3 and other gaseous pollutants, aerosol characterization (number, size distribution, mass concentrations) and chemical transport modelling. This variety of topics makes the paper on one hand lengthy and difficult to read, on the other hand the results remain shallow and

incomplete and do not reach the required scientific standard. As an example, the activities on chemical transport modelling using CHIMERE are not sufficiently described by sections 3.3.2 and 4.6. Readers simply get not the required information about how the modelling system was set up and what exactly has been done, readers therefore cannot judge about the value of the presented results. The authors state in section 4.6 that "the measurements for SAPUSS will contribute to a better characterization of this intra-daily variability and to check why the amplitude of the daily cycle is not well captured generally by these models". This is only a statement here that is not supported by the results provided in this manuscript. The questions raised by this statement could however be addressed in a separate focused paper. I therefore strongly suggest rewriting this paper in a way so that the text is confined to a short and concise introduction into SAPUSS and its key objectives. The results should be left for the focused papers within this special issue. This paper can be published in ACP (as an introduction to the special issue rather than a research paper) when revised accordingly. My suggestion basically is to skip the brief descriptions of results and also the sections on measurement technologies because the used measurement technologies should anyway be described appropriately in the focused papers and redundancy should be avoided.

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