

## ***Interactive comment on “Soccer games and record-breaking PM<sub>2.5</sub> pollution events in Santiago, Chile” by Rémy Lapere et al.***

**Anonymous Referee #2**

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The study investigates the impact national soccer games on air quality in Santiago, Chile. Extreme PM<sub>2.5</sub> events have been studied, where drivers like traffic emissions or meteorology cannot explain these high PM values. The study therefore uses observed pollutant ratios and show that observed PM<sub>2.5</sub> concentrations actually correspond to emissions from barbeques during national soccer games. Emission estimates based on these findings are implemented in a chemistry-transport simulation, which led to nicely reproduction of the observed peaks.

The paper is well written and easy to follow and I would therefore recommend publication of the manuscripts in ACP, given the below minor details are addressed.

Line 2: ... up to ten-time ABOVE average levels.

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Line52: Recommend to write the spatial resolution explicitly in text.

Line 56: What is the spatial and temporal resolution of the FNL data?

Lines 59-60: check the spin-up and the simulation periods, looks like there is a gap of 15 days between the spin up and the actual simulation?

Line 68: Please write the types of the stations: urban, street, etc.?

Line 71: In general please add also relative biases/changes along with the absolute values throughout the text.

Line 83: Mazzeo et al. (2018) used. ....

Figure 3a: Considering using shading for the period instead of dashed lines for better readability.

Figure 8 is not referred anywhere in the text. Please explain what the shaded areas in Figure 8 represents.

Line 187: ... (see Section 2 for details). ...

Line 200: .. would be a total OF 2 tons. ...

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-820>, 2019.

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