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Atmospheric Chemistry and Physics Discussions

# *Interactive comment on* "Temporal evolution of main ambient $PM_{2.5}$ sources in Santiago, Chile, from 1998 to 2012" *by* Francisco Barraza et al.

**Anonymous Referee #2**

Received and published: 14 March 2017

"Temporal evolution of main ambient PM2.5 sources in Santiago Chile, from 1998 to 2012" General: The project seems to be carefully thought out. The analytical methodology (PMF 5.0 and Unmix 6.0) seems appropriate; however, a separate detailed sampling and QA/QC section is needed. Language and spellings need to be improved. Concentrations should be expressed in 3 significant figures throughout the text and in the figures and tables. The author should compare the data with other studies in urban areas. As such I recommend that it be published with major revision:

1) Page 3: "$\mu$g/m3" should be "$\mu$g/m3" - be consistent throughout the text, figures, and tables.

2) Page 3: "24-hour" or "24 hours" or 24 h" – be consistent with one of them.

3) Page 3: No mention for the sampling and analysis for PM2.5? How PM2.5 samples



were obtained? Which type of filter was used? Were the filters weighed in the clean room? Which analytical balance was used? Any QA/QC?

4) Page 3: A detailed QA/QC section for XRF analysis should be included. How often were the "QC" samples run? (What % age?). No estimates of recovery. What is the limit of quantitation? What is the uncertainty? Any blank correction? Precision and accuracy?

5) Page 4: Did the authors find selenium?

6) Page 4: Did the authors do the PMF analysis for the missing data? How was this handled?

7) Page 5: The contribution of Pb from industrial emissions cannot be ruled out. Motor vehicle is not the only source of Pb.

8) Page 7: "artefact" should be "artifact"

9) Page 8: "Gramsch et al. (2013)". Missing in the reference section.

10) Page 8 Lines 10 – 12: Did the private cars use diesel as a fuel? Primary source of BC are emissions from diesel engines, cook stoves, wood burning and forest fires.

11) Page 12: "Boisier, J.P., . . .. . ..Mu?????oz, F.," should be corrected.

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