

Interactive comment on “Source apportionment of ambient particle number concentrations in central Los Angeles using positive matrix factorization (PMF)” by M. H. Sowlat et al.

Anonymous Referee #2

Received and published: 2 March 2016

The study is focused on the characterization of the major sources of PM number concentrations and on the quantification of their contributions using the PMF receptor model applied to PM number size distributions combined with several auxiliary variables in central Los Angeles. The topic is interesting, the data set is large and reliable, the paper is well organized and data interpretation seems to be sound. While there are many articles regarding aerosol source identification by PMF, there are few regarding the analysis of particle number concentrations by PMF. This work gives a very good quantitative identification of the sources which contribute to the particle number as a function of particle size in Los Angeles. I have only few minor remarks: 1) p 14 l.32-34: why the same explanation is not valid for traffic 1? 2) Factor 5: is there any expla-

C1

nation why this factor gives such a small contribution to particle number? This factor is attributed to secondary nitrates and organics (quite reasonable). Is not there any contribution from secondary sulfates in Los Angeles? If yes, in which of the identified factors is? 3) p 18 l.9: the factor was called “soil/road dust” but the time trend of this source does not justify road dust as a source 4) Fig 3: the normalized concentrations of PM_{2.5-10} are higher respect to PM_{2.5} for both traffic 2 and urban background; is there any possible explanation? 5) Fig. 8: why on weekend there is a night peak only for traffic 2?

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2015-959, 2016.

C2