Detecting plumes in mobile air quality monitoring time series with Density-based Spatial Clustering of Applications with Noise

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General Comments:
Overall, this article presents a novel method for identifying and isolating plumes from mobile timeseries measurements. The proposed technique produces a conservative grouping of plumes which can significantly progress analyses and use of mobile data for local air quality and inequality analyses. The application of this technique on a wider scale would be particularly interesting for further addressing differences in air pollution burden between communities. This paper presents useful technique especially with the increase in mobile measurements, but further discussion on source apportionment after plume identification is encouraged.

Specific Comments:
The methodology is sound but discussion of pollutant co-emissions from sources may need to be considered when identifying sources through this method. For instance, the authors site the sources between heavy- and light-duty vehicles, and while the Houston shipping channel is a traffic pollution hotspot, a large portion of the sources are stationary point sources such as petrochemical and industrial facilities. This is particularly important when extending the results of this analysis to census tracts where multiple pollutant sources dominate. Additionally, conducting an additional validation using mobile data nearfield of ground-based monitors may bolster plume identification.

Technical Corrections:
n/a