

Atmos. Chem. Phys. Discuss., referee comment RC2
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Comment on acp-2021-565

Anonymous Referee #2

Referee comment on "Measurement report: Summertime and wintertime VOCs in Houston: Source apportionment and spatial distribution of source origins" by Bavand Sadeghi et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-565-RC2>, 2021

This manuscript addressed source apportionment of VOCs in Houston, a petrochemistry condensed region in US, by using measurement data in 2018. It reads a quite routine source apportionment report, I regret to suggest a rejection of current version due to three points:

1 The current version discussed only the data obtain in their monitoring site, with some discussion on roles of VOCs chemsitry and transportation. I consider that an evaluation on trends of VOCs levels, chemical compositions and source, or features of source chenges for petrochemical industries in US (Houston as an example) would be of more interest to community rather than a local study ;

2 The methods used in the MS, PCA, PMF, OFP, ratio analysis and backward trajectory are sort of routine. And the dataset is for 2018, the reviewer didnot see measurements on OVOCs which cuold be important for petrochemical emissions. Therefore from methodological perspective, I didnot found see something new for VOCs source understanding;

3 There is an important issue to discuss with the authors. The authors showed quite string chemical oxidation processes by using ratios of VOCs, e.g. Benzene/Toluene, and etc, this clearly means that conventional PCA and PMF could not be deployed for source apportionment in Houston, the authors needs to use chemical-loss correction to do reliable source apportionment. This problem is not discussed in the current version.