

Interactive comment on “One year monitoring of volatile organic compounds (VOCs) from an oil-gas station in northwest China” by Huang Zheng et al.

Anonymous Referee #3

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This paper describes one year continuous monitoring of VOCs around an oil-gas region in northwest China in order to clarify atmospheric behavior of VOCs in such region. The authors revealed temporal variations such as seasonal and diurnal variations of VOCs around the oil-gas region and analyzed factors of such variations. In addition, they performed source analyses of VOCs and discussed source of VOCs in this region quantitatively.

General comments:

As the authors mentioned, VOCs are main precursors of tropospheric ozone and it is important to clarify atmospheric behavior of VOCs. Examples of VOC observations in

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oil-gas regions are low, especially; there are few continuous observations of VOCs with high time resolution. The authors supply valuable data and information. In addition, the authors conducted quantitative source analyses of VOCs. I recommend this paper to be published in Atmospheric Chemistry and Physics. However, I found several dubious points in this paper. The authors should revise appropriately.

Specific comments:

The authors performed several discussions using NO_2 . Why do the authors use NO_2 instead of NO_x ? I think it is preferable to use NO_x instead of NO_2 (or both NO_2 and NO_x) for many of such discussions. The authors would observe NO and NO_2 because they used a TEI NO_x analyzer based on a chemiluminescence method.

NO_2 and NO_x concentrations measured by a TEI NO_x analyzer are not accurate because of interferences of descendant species of NO_x such as HNO_3 and PANs. The authors should evaluate such interferences. Especially, organic nitrates could interfere the values of NO_2 concentrations obtained by a TEI NO_x analyzer under high concentrations of large hydrocarbons.

On page 9, lines 6-7, “It should be noted that VOCs... as well as BLH.”: I think NO_2 concentrations are controlled solar UV and concentrations of NO and O_3 as well as BLH, but are VOCs controlled concentrations of NO and O_3 ? (I don't think so.) The authors should discuss this matter separating VOCs and NO_2 .

Table 1: The authors should explain r^2 .

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