

Response to editor' comments

Comments:

Thank-you for submitting your detailed responses to the comments made by the reviewers. I am happy to recommend publication in ACP following a couple of minor revisions:

Line 418 - could you provide a citable reference to the government report here?

With regards to the specific comment by RC1 on how ozone and SOA formation in other cities would compare with Lhasa given its climate and topography, I appreciate that it is beyond the scope of this paper to include box model results investigating the ozone budget. I think it would be useful though, in section 4, to draw the reader's attention once more to the comparisons already made in terms of the VOC distributions in Lhasa and other locations (shown in Table 1 and 2).

Response: Thank you. Following your suggestions, we revised our manuscript as below:

In line 118, we added the citable reference “Ministry of Ecology And Environment of the People's Republic of China, Report on the State of the Environment in China 2015,<http://english.mee.gov.cn/Resources/Reports/soe/Report/201706/P020170614504782926467.pdf>, latest access on 2023-6-12”

In line 381, we added the statement “Our results confirmed the anthropogenic contribution to VOCs in Lhasa. Both the topography and high ultraviolet (UV) irradiation, accompanied with anthropogenic NO_x emission, also encouraged the accumulation of OVOCs in the Lhasa River valley. As a matter of fact, OVOCs accounted for the largest proportion of the TVOCs and the total OH reactivity. The much higher abundance and stronger contribution to the total OH reactivity of OVOCs than that of their precursors also characterized the photochemical decaying features of for example alkenes and long-chain alkanes in the Lhasa River valle. Effective photochemical production and accumulations of these measured OVOCs would perturb the budget of radicals and promote the photochemical production of O₃ and SOA, in addition to these primary emission of those VOC precursors.”