

We thank the Referee for his/her time and constructive feedback on the manuscript. We believe these comments have helped to improve the organization and presentation of our manuscript. Below we show the reviewer's comments in black and our responses in blue.

## **Response to Reviewer 1**

The present manuscript by Zhang et al. entitled "Interpretation of mass spectra by a Vocus proton transfer reaction mass spectrometer (PTR-MS) at an urban site: insights from gaschromatic pre-separation" describes a study where urban air in Shanghai is analyzed using a combination of GC with PTR-MS. Although clearly and well written this manuscript reads like a chapter of a master thesis, that is, it is much too long and much too detailed (in particular the lengthy introduction, the detailed description of standard measuring set ups and procedures and the detailed presentation of results, Table2, without a discussion about general implications concerning the relevance in terms of for instance atmospheric pollution, too many references) in relation to the novelty and originality of the results. The upgrading of a PTR-MS instrument (or other linear mass spectrometers) by coupling it with a standard GC has been carried out and described already several times in literature and thus is nothing new and nowadays a standard procedure when trying to analyse composite samples, in particular when using commercial off the shelf instruments. Moreover, this standard procedure has been applied in the present case to a very specific sample, that is the air measurements were carried out on the rooftop at the Jiangwan campus (Fudan University) from January 24 to February 28 in 2022. Thus results obtained and presented will only apply to this situation of atmospheric composition and experiemntal setup. The authors themselves argue along this line "Since our recommended correction depends on the specific measurement time and location and the instrument setting,it is therefore necessary to carry out more measurements under various atmospheric environments such as industrial estates and rural areas." So although quite elaborate this experimental study is of rather limited general use and general interest to readers interested in the geoscience community. Nevertheless, it contains a careful study concerning details regarding the PTR MS method and thus publication is possible but the manuscript should be shortened drastically (some of the material could be made available via supplements).

We thank this reviewer for his/her constructive comments. We have revised our manuscript by

1. shortening the introduction,
2. moving Table 1 in the main text to supplementary Table S1 in the revised manuscript,
3. and moving the detailed description of measuring set ups and procedures to the revised supplement.