Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2018-1192-RC2, 2019

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Primary and secondary sources of ambient formaldehyde in the Yangtze River Delta based on OMPS observation" *by* Wenjing Su et al.

Anonymous Referee #1

Received and published: 26 January 2019

The manuscript "Primary and secondary sources of ambient formaldehyde in the Yangtze River Delta based on OMPS observation" by Wenjing Su et al. apportions the primary and secondary sources of ambient HCHO using satellite observation, and discussed the application of HCHO to the study of tropospheric ozone production sensitivity. The paper is a significant exploration to obtain the spatiotemporal and source information of HCHO, and the results are believable. Some expression and discussion should be improved prior to publication.

Specific comments: Page 6, section 3.2: the author estimated the total national cancer risk of 33500 people and 439 cancer cases per year using OMPS HCHO observation.

Please explain how to convert?

Page 6, Line 10-11: HCHO concentrations from OMPS measurement were generally lower than those from FTS, and the underestimation from OMPS was attributed to errors of spectral fitting and AMF calculation. The authors should explain the detailed reasons of errors instead of simply attributing spectral fitting and AMF calculation.

Page 10, section 3.3.3 line 28-30: The authors conclude that primary emission influenced the variation of ambient HCHO more significantly than secondary formation in winter. This conclusion should be supported by quantitative analysis.

Page 11, section 4.1: The author discussed whether total HCHO can be regarded as the proxy for VOCs reactivity depending on the correlation between total HCHO with secondary HCHO. Why the relationship between them can be used to judge the representation of HCHO as the proxy for VOC reactivity?

Page 11, section 4.2: When discussing the HCHO control measures, it should be focused on HCHO pollution, i.e., HCHO concentrations beyond the air quality standard. When HCHO concentration is low, it is not necessary to discuss whether paying more attention to primary emission or secondary formation

Technical corrections: Page2, Line4: change "become increasing serious" to "become increasingly serious" Page5, Line20: change "Surface air pollutants monitored by CNEMC was" to "Surface air pollutants monitored by CNEMC were" Page5, Line27: change "one of the condition" to "one of the conditions" Page8, Line11: change "industrial zoon" to "industrial zone"

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2018-1192, 2019.