

Interactive comment on “Primary and secondary sources of formaldehyde in urban atmospheres: Houston Texas region” by D. D. Parrish et al.

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There is a serious omission in this paper on the part of the main author. He neglects to cite a study in which the person whom he listed as the last author, Dr. Scott Herndon of Aerodyne, was a main participant, that being the 2010 TCEQ Flare Study. The final report of that study has been publicly available for some time now, and was certainly known to the main author, as the PI is a close colleague, Dr. David Allen of the University of Texas at Austin. In that study, considerable speciated flare emissions data via ambient real time monitoring at the source (therefore ruling out significant secondary formation) was collected by Aerodyne at the John Zink experimental facility in Oklahoma. This data confirmed HCHO/CO ratios of several percent, in fact the final report cites one case in which the ratio was $\sim 8\%$. Considerably more data than was

C14651

mentioned in that report was collected and publicly reported on by Dr. Herndon at the Houston Galveston Area Council. Such measured ratios at the source confirm the existence of significant primary formaldehyde from flares and validate the ratios reported during the SHARP campaign. Moreover, the simple methods employed by the authors to derive their conclusions are invalidated by my own very high resolution 3D modeling results just reported at the AMS meeting in New Orleans, which show that while well downwind of a large industrial flare, primary formaldehyde fades to a small percentage of total formaldehyde, very near the source, there is a large fraction of primary ambient formaldehyde which is responsible for very rapid ozone formation within a few kilometers of the source. Such rapid ozone formation due to primary formaldehyde is beyond the reach of the methods employed by the authors.

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