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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Identifying fire plumes in the Arctic with tropospheric FTIR measurements and transport models" *by* C. Viatte et al.

Anonymous Referee #1

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General comments:

The authors present a study of biomass burning products such as CO, HCN, C2H6, C2H2, HCOOH, and H2CO. The study is based on ground-based FTIR measurements performed at Eureka and Thule. Time series of the species listed above are presented and compared with model calculations. Periods of increased amounts of biomass burning products are detected. These fire events are studied using trajectory and a chemical transport model. Finally, emission ratios of the above mentioned species were derived.

The subject is fully appropriate for publication in ACP. I recommend publication after minor revisions.

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Printer-friendly Version
Interactive Discussion
Discussion Paper

Specific comments:

- Is there any trajectory passing both sites, Eureka and Thule, or another NDACC site? This would allow you to study differences in composition along the trajectory.

- For a better coverage of the Arctic it would be beneficial to include all the Arctic FTIR sites. This would also better reflect the title which mentions 'in the Arctic'.

- p.26371: 'our measurements suggest slightly higher emissions of C2H2 in biomass burning plumes' (& Fig. 10): However, the differences are within the error bars.

Technical comments:

- In the printer friendly version, 'ff' is printed in Italian; at least my printer does so.

- In Figs. 4d, 5 -8, fonts are too small.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 26349, 2014.