

Interactive comment on “Airborne and ground-based measurements of the trace gases and particles emitted by prescribed fires in the United States” by I. R. Burling et al.

Anonymous Referee #1

Received and published: 25 August 2011

This is an interesting paper dealing, mainly, with the gaseous emissions of compounds resulting from prescribed fires in North America. The paper presents data on emission factors of a series of gaseous carbonaceous compounds that are extremely useful in emission inventories and as entrance for models describing photochemistry and secondary aerosol formation in atmospheres impacted by fire emissions. The manuscript is well written and, although being tiresome to read as result of extensive descriptions of fire conditions and comparisons with other fire conditions in previous experiments performed by the same research group, presents the results in a well-organized context, with emission factors given as a linear function of the Modified Combustion Efficiency, in order to take into account the different influences of flaming and smoldering

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burning conditions in the formation of incomplete combustion products. The experiments were done and fitting values calculated principally for two vegetation coverage types and results are somehow dissimilar for each one of these types. As the authors refer it will be necessary to take these results with some caution because, for example for the chaparral burnings, the fits are highly influenced by one only experimental point and therefore they should be taken as a first approximation. I have no special corrections to propose to the manuscript and I recommend its publication as it is!

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 18677, 2011.

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