

Interactive comment on “Evidence of the impact of deep convection on reactive volatile organic compounds in the upper tropical troposphere during the AMMA experiment in West Africa” by J. Bechara et al.

Anonymous Referee #2

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This manuscript presents valuable new airborne measurements of C5–C9 VOCs collected over West Africa by two French aircraft during August 2006. The latitudinal distributions of the individual VOCs are closely connected to land surface characteristics over West Africa, going from bare soils over the Sahel to the tropical forest and urban sites. Vertical NMHC distributions reveal considerable influence from convective injections, with NMHC concentrations and total air masses reactivity significantly higher in convectively influenced air masses (as defined by CO, O₃ and RH). In addition, isoprene is shown to play an important role in total reactivity throughout the

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vertical tropospheric column, especially in convective outflow explaining 27% of UT total reactivity.

In general, the paper is well written and presents novel observations that should be published in ACP.

Specific comments.

I agree with the comments published by reviewer #1. In addition I would like to add the following:

Section 6.2 I suggest that the authors could clarify the "useful information" contained in Figure 8. The authors state that "Clearly, two sets of points are distinguished depending on non-convective situations (black) and convective situations (red)" and again later in the paragraph "UT NMHC concentrations are thus governed by two distinct regimes", however, I would be surprised if the two slopes are statistically distinct? As noted in the text, the convective case data are so much "more diffuse" (I would prefer to use the term less well correlated - or more scattered), that the two populations seem to overlap.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 20309, 2009.

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