

Interactive comment on “Mirror image hydrocarbons from Tropical and Boreal forests” by J. Williams et al.

Anonymous Referee #2

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The paper deals with the measurements enantiomeric terpene over different ecosystems. Both, the amount of terpenes and its enantiomeric composition were found to be different over a Tropical forest compared to a Boreal forest. This is the first study on enantiomeric composition of plant volatiles on a large scale. Of the main enantiomers, (-) - and (+)-alpha-pinene, only the (-)-enantiomer is correlated with isoprene. Since reaction rates of both enantiomers are the same, the difference can be explained with different emission patterns. This unexpected result will trigger future studies on enantiomeric composition of terpenes in plant volatiles. The paper is a valuable contribution, well presented and should be published.

Small remarks: In the article correlations between alpha-pinene and isoprene are shown. The authors should provide some information on isoprene measurements.

Looking at the results presented in figure 5 it seems that beta-pinene emissions also differ in enantiomeric composition in the different ecosystems. The authors should mention it in the text. In the discussion part the authors argue, that the availability of monoterpenes is advantageous for communication. This is certainly true for most of the species. However, in the cited example, the monoterpenes are produced by the tree to protect from herbivores. The herbivoric bark beetle transforms the terpenes to an aggregation pheromone to attract more herbivores. This is beneficial for the herbivore, but not for tree who produces the terpenes.

Typos: 9586 line 23 an 8.5 mm 9587 line 6 Brokopondo Lake 9602 alpha and beta are missing in the figure

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 9583, 2006.

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