

Interactive comment on “Sensitivity studies of oxidative changes in the troposphere in 2100 using the GISS GCM” by J. L. Grenfell et al.

T. Karl

tomkarl@ucar.edu

Received and published: 12 May 2003

The manuscript presents interesting results. However, I want to add a note on landuse change and isoprene. It remains unclear, if conversion of primary forest in the tropics will necessarily lead to a decline in biogenic VOC/isoprene emissions assumed for the hydrocarbon emission scenario. It is highly unlikely that the tropics will be completely industrialized and/or converted to pasture land; a more likely scenario will include a large fraction of agroforests. Early successional, fast-growing species (mostly used for plantations, the timber or the natural rubber industry) tend to be extremely high isoprene/VOC emitters and could therefore counterbalance any decrease in biogenic emissions due to industrialization and conversion to pasture land. An additional increase will result due to future climate change under resource limited (e.g. N or P) growing conditions. Thus, future isoprene emissions in the tropics could just as well

Full Screen / Esc

Print Version

Interactive Discussion

Discussion Paper

increase by a factor of 2-5 within the next 100 years. In addition, the use of CO as a proxy for isoprene seems to be problematic, especially when conclusions about HCHO formation are drawn.

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 1805, 2003.

Interactive
Comment

Full Screen / Esc

Print Version

Interactive Discussion

Discussion Paper