Geophysical Research Abstracts, Vol. 7, 03390, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03390

Climate impact on biogenic VOC emissions

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The emissions of isoprene, monoterpenes and other volatile organic compounds (OVOC) from the terrestrial vegetation are of great significance for the chemistry of the troposphere, and in particular in tropical regions. As these emissions are known to be highly temperature dependent, one may expect significant impacts from global warming on the global oxidizing capacity and the tropospheric ozone budget. We have coupled a simplified version of a biogenic VOC emissions model (MEGAN) to the global chemistry climate model MOZECH, and we investigate the changes in the emissions under different climate conditions. The model is driven with sea surface temperatures and sea ice cover from the recent IPCC runs performed with ECHAM 5. As a first step, we will compare biogenic VOC emission estimates for the climatic conditions of the years 1900, 2000, and 2100 (for SRES scenarios A2 and B1). At present, the model does not account for changes in the vegetation cover. These effects will be introduced in a later version.