



Analysis of trends in the chemical composition of the troposphere during the last 40 years (RETRO) simulated with the MOZECH model

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We present an analysis of trends in the chemical composition of the atmosphere during the last 40 years using the recently developed global circulation chemistry model MOZECH. This model is based on the chemistry scheme of MOZART2.4 and the global circulation model ECHAM5.

The 40-year run was done with the newly developed global emission data of the RETRO project. These data sets are the first to provide consistent and detailed gridded information with monthly time resolution over such a long period. Biogenic and lightning emissions are calculated interactively in the model. We analyse trace gas concentrations and relate these to emission changes including lightning NO_x and biogenic emissions. We focus on O₃, CO, and NO_x levels and also investigate trends in OH based on the CH₃CCl₃ and CH₄ lifetimes. The global budget of O₃ will be presented and compared to recent calculations performed in the framework of the ACCENT/IPCC Photocomp experiment.