Parameterization of OH for Efficient Computation in Chemical Tracer Models

B. Duncan, D. Portman[1], I. Bey and C. Spivakovsky

Department of Earth and Planetary Sciences and Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA

[1]Atmospheric & Environmental Research (AER), Inc., Cambridge, MA

Abstract. We present a parameterization for the tropospheric concentration of the hydroxyl radical (OH) which can be used to overcome the costs of solving kinetic equations in chemical tracer models. This parameterization accurately represents OH predicted by a full chemical mechanism. The 24-hour average concentration of OH is represented as a set of high-order polynomials in variables such as temperature, latitude, declination and the concentrations of ozone, water vapor, carbon monoxide, nitrogen oxides (as a family), and hydrocarbons. Results include computer-written FORTRAN functions for an efficient computation of the polynomials. The parameterization of OH is publicly available.

Back to: Bryan Duncan's Homepage

Back to : Atmospheric Chemistry Modeling Group People

Back to: Atmospheric Chemistry Modeling Group Home Page