

Developing and using mechanisms for the oxidation of organic compounds in the atmosphere

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The master chemical mechanism (MCM) is an explicit chemical mechanism describing the tropospheric oxidation of 125 volatile organic compounds. It is mounted on the Leeds Chemistry website at:

<http://www.chem.leeds.ac.uk/Atmospheric/MCM/mcmproj.html>

The mechanism has been assembled using a protocol with comparatively few simplifications. The rate data and product yields are based on experiment, theory, estimation and analogy.

Following a brief outline of the website and the protocol, the following issues will be discussed:

- approaches to the determination of mechanism components using direct measurements of reaction rates and chamber experiments;
- uncertainty estimation;
- approaches to reduction and lumping;
- tests of the mechanism using outdoor chamber and field experiments, in clean and polluted environments