

SMOKE Improvements in version 2.0

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Support of Toxics Inventories (1)

- SMOKE v1.5 supported nonroad and on-road mobile sources
- SMOKE v2.0 adds support for non-point and point sources
- Uses additional inventory fields
 - MACT
 - NAICS (read only)
 - “source type” code (major or “area”)
 - emission release point type (read only)

Support of Toxics Inventories (2)

- New inventory format (one-record-per-line, or “ORL”) for toxics data – can be used for criteria as well
- Handles 8- and 10-digit SCCs within the same source category (non-point, nonroad, and point)
- Revised controls to include MACT-based assignments
- Can assign speciation profiles by MACT code and SIC

Updates to SMOKE/MOBILE6

- First released in SMOKE v1.5
- Travel on freeway ramps accounted for when estimating freeway emissions
- New settings for treatment of freeway speeds
- Support for hourly speed profiles

Revised and Expanded Users Guide

- Had not been updated since SMOKE v1.4
- More introductory and conceptual material (chapters 1 and 2)
- Better explanations of directory structure and file locations (chapter 3)
- Extensive “How to” for modifying scripts and files for doing typical changes in scripts (chapter 4)
- More detailed information on “nctox” release case
- Updated for new programs, environment variables, and files
- Expanded for existing programs and files

Other Improvements

- Plume rise calculations updated from ORD revisions
- Changed terminology from “ozone season” to more general “average day”. IDA format “average day” field can be used for any season, month, or day. User must organize SMOKE scripts accordingly.

SMOKE v2.0 Availability

- Download executables, scripts, and data through the CMAS Model Clearinghouse

<http://www.cmascenter.org/modelclear.shtml>

- User's guide available online at the main SMOKE website

<http://www.cep.unc.edu/empd/products/smoke/>

Future/ongoing Work

- Additional quality assurance updates
- Testing impact of SMOKE/MOBILE6 versus using precomputed MOBILE6 emissions
- Use humidity data from meteorology files when running SMOKE/MOBILE6
- Externally accessible code archive for better community collaboration
- NIF-to-SMOKE converter (under consideration)
- Testing with 2001 and 2002 NEI
- Possible “SMOKE developers” class at EI conference