

AERMIC Report Out

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EPA R/S/L Modelers Workshop
June 10-12, 2008
Denver, CO

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EPA R/S/L Modelers Workshop
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Outline

- History of AERMIC
- Reconstituted AERMIC
- Initial meeting of “new” AERMIC
- Future plans for AERMOD – Overview

History of AERMIC

- AMS/EPA Regulatory Model Improvement Committee initially formed in 1991; charged to develop replacement for ISCST based on state-of-the-science; AERMOD promulgated Dec. 2006
- New AERMIC committee met in RTP on March 25-27, 2008
 - Membership of “new” AERMIC committee:
 - Roger Brode, OAQPS, Co-chair
 - Jeff Weil, CIRES-NCAR, Co-chair
 - Akula Venkatram, UC-Riverside
 - Al Cimorelli, EPA Region 3
 - Bret Anderson, EPA Region 7
 - Vlad Isakov, EPA/ORD/AMD
 - Steve Perry, EPA/ORD/AMD, “Member Emeritus”

AERMIC Meeting Overview

- AERMIC reviewed status of AERMOD modeling system and activities of AIWG
- Key priority for AERMIC has been the Urban formulation in AERMOD
- However, AERMIC recognized significant overlap among many issues, including Urban, Surface Characteristics and Met Data
- AERMIC also recognized opportunities to address many implementation issues by utilizing newly available data

AERMIC - Future Plans for AERMOD

- Building on plans to enhance AERSURFACE by combining land cover and elevation data, AERMIC is developing an approach to address a wide range of issues by utilizing this data directly in the model
- Land cover and elevation data (SRTM-NED) will be fed directly to AERMOD to develop source-specific meteorology accounting for land cover and obstacle heights around source and met tower
- Anthropogenic heat flux influences on meteorology and dispersion will be also parameterized on a source-specific basis

Future Plans for AERMOD (cont.)

- This approach will eliminate many implementation issues, especially related to urban applications
 - No distinction between “rural” and “urban” sources
 - No requirement to estimate “effective” population as surrogate for urban influences
 - Spatial and temporal variability of urban heat island influence will be accounted for
 - Representativeness of met data will always be an issue, but influence of surface characteristic variability should be mitigated
- Considerable work will be required to implement this plan, including performance evaluations

Future Plans for AERMOD (cont.)

- Incorporating fuller range of data directly into AERMOD may eliminate need for preprocessors, including AERMAP, AERMET, and AERSURFACE
- Fuller input data may allow additional enhancements, such as direction-specific “hill height scales” for terrain influences, currently not practical to implement
- New AERMOD structure will better accommodate future enhancements as new data sources emerge
- Downside is that this plan is not likely to speed up AERMOD!

Questions?

