

## **Bridgers, George**

---

**To:** Model Clearinghouse Regional Office Contacts  
**Cc:** Model Clearinghouse Collaborative Contacts; DMT - AQMG  
**Subject:** AQMG / Model Clearinghouse statement concerning the AERMET/AERMOD (version 12345) BETA options

Greetings,

Since the v12345 release of AERMET and AERMOD on December 17, 2012, there has been a lot of discussion throughout the permit modeling community of the BETA u-star option in AERMET and the LowWind1 and LowWind2 BETA options in AERMOD. Many contractors, state/local agency modelers, and a few Regional Office modelers have tested and evaluated these BETA options in a variety of situations and settings. Some of these evaluations have been presented back to the broader community along with open discussion at the 2013 A&WMA's Specialty Conference (Guideline on Air Quality Models: The Path Forward), at the 2013 Regional, State, and Local Modelers' Workshop, and through direct engagements with the Air Quality Modeling Group.

In the more recent months, we have become aware of numerous applicants and/or state/local agencies that are interested in using or are already attempting to use these BETA options in a regulatory context. We have heard from at least half of the Regional Office Modeling Contacts of interest and/or activity within their respective regions. As discussed on the June Regional Office Dispersion Modelers' Conference Call last week, we provided a response back to one of the Regional Offices on a specific request by an applicant to use the BETA u-star adjustment in the v12345 of AERMET, albeit in a state minor source versus a PSD compliance demonstration. We are providing this response below along with an additional paragraph discussing the LowWind BETA options in the v12345 of AERMOD for everyone's reference and benefit given the amount of attention that the BETA options are receiving and near-term implications of our response.

“Some issues have been identified with the current implementation of the BETA u-star adjustment option in AERMET and we plan to release an update to AERMET within the next few months to correct those issues. We are also continuing our evaluations of AERMOD model performance using the new BETA options and plan to share results of those evaluations on SCRAM when the update is posted. The preliminary results from these additional evaluations have generally shown improved model performance as compared to the current version (v12345). Given this pending change to the BETA option in AERMET, we feel that it would be inappropriate to approve the use of v12345 of AERMET implementing the BETA u-star adjustment as an alternative model for regulatory application at this time, and we could not support such an action. Although the initial focus of our evaluations has been on those databases for which the BETA options (including the AERMOD LowWind options) are most relevant, we are also evaluating the impact of these options for other cases to assess whether model performance may degrade as a result of these options for some applications.

It's also important to recognize that the LowWind BETA options included in v12345 of the AERMOD model are in a different category than the AERMET u-star adjustment option in terms of an alternative model justification under Section 3.2 of Appendix W. The AERMET BETA option is based on a peer-reviewed study (Qian and Venkatram, 2011) which also includes independent evaluations of the new u-star estimates, whereas the AERMOD LowWind BETA options have not been peer reviewed. Furthermore, although the preliminary evaluation results generally show some additional improvement in model performance when the LowWind2 option is used, the improvements are not significant or robust enough to justify approving use of the LowWind2 options at this time.”

Please feel free to share this email and the response above with your respective state, local, and tribal agencies, as appropriate. Do not hesitate to send along any questions and/or feedback that are received.

Regards,  
George

---

George M. Bridgers, CPM, Environmental Scientist  
U.S. Environmental Protection Agency  
Office of Air Quality Planning and Standards  
AQAD - Air Quality Modeling Group  
109 TW Alexander Drive  
Room C431B - Mail Drop C439-01  
Research Triangle Park, NC 27711  
Phone: 919-541-5563  
Fax: 919-541-0044