Description:

This Document describes changes to the OTM 33A Ver 1.3 posted in 2016. These changes reflect progress in analysis software for data acquired with the OTM 33A stationary measurement technique. These changes pertain to analysis using the simple “point source Gaussian” (PSG) emision estimation approach. The primary change is to discontinue the original MATLAB®-based PSG analysis code described in Appendix F1 and replace it with updated and improved versions of the code written in both MATLAB® and the open source program “R”. The improved versions of the code fix several software issues in the original code that could lead to errors in data processing. These coding issues include errors in batch processing of files, setting cut internal filter levels, and binning of information in the fitting procedure. For files executed using the EPA OTM 33A protocol, these coding errors produce typically < 5% on average. If users deviate from the OTM 33A acquisition protocol (e.g. using shorter observation times, improper instrument rotation) these code issues could lead to more serious errors. As described in OTM 33A, the original PSG code required a particular orientation of the 3-D sonic anemometer during measurements. This is not a requirement in the updated versions.

Specific changes include:

C.2016.01: OTM 33A Appendix F1. Revised text new software description (Appendices F1-F and F1-G).

C.2016.02: OTM 33A Appendix F1. Software code provided, improved versions of the PSG analysis code written in both MATLAB® (Appendix F1-F) and “R” (Appendix F1-G).

C.2016.03: OTM 33A Appendix F1. Twenty (2) test files from controlled release experiments are provided along with an output summary file.

C.2016.04: OTM 33A. Minor revision reflect above changes (primarily Section 9).