

Model Evaluation Toolkit

What's New in Version 4.0?

January 2016

This document describes the changes in version 4.0 of the Model Evaluation Toolkit, compared with the last publicly released version 3.2, which was released in July 2014.

Changes to the look and feel of the Toolkit

1. 'Model Evaluation Toolkit' is the new name for the 'Myair Toolkit for Model Evaluation'
2. The Model Evaluation Toolkit has a completely new interface; RGGRunner is no longer used to run the Toolkit
3. All R packages required by the Toolkit will be automatically installed when required and (by default) updated each time a Toolkit tool is run; no manual installation or update of R packages is now required.
4. Toolkit parameters can now be saved in a settings file and later re-loaded. These settings files have the extensions .tki, .tkm and .tkd for the Data Input Tool, Model Evaluation Tool and Model Diagnostics Tool respectively.
5. All output data and graphs are created in the same directory as the settings file with the settings file name as a prefix.
6. .log files have been introduced to record the output of toolkit runs. These are created in the same directory as the settings file.

Changes to Toolkit options

1. The Toolkit has been updated to be compatible with R version 3.2.3.
2. To enable different modelled datasets to be compared more easily, the pollutants data file has been split into a main pollutants file, a modelled data pollutants file and an observed data pollutants file. The modelled and observed pollutants files contain a 'pollutant' column then only the columns from the old pollutants file with the 'mod.' or 'obs.' prefixes respectively. Examples of the new-format pollutants files are included in the 'DataSamples' subdirectory.
3. Two new columns have been added to the main pollutants file: 'min.allowed' and 'max.allowed'. These represent the valid data range for each pollutant. Any observed or modelled data outside this range will be treated as missing data.
4. The Model Evaluation Tool includes a new option to include openair modStats output in CSV output when a concentration evaluation assessment is carried out. For information about this type of output [click here](#) for documentation of the openair package.
5. The Model Evaluation Tool concentration assessment option includes a new 'Time plot' option which produces a time series plot of observed and modelled data averaged across all

stations. If a forecast assessment is also being carried out then the plot includes alert thresholds. Note that this plot only works with the default grouping and filtering options.

6. The Model Evaluation Tool now allows you to produce graphs and statistics based on the *daily maximum* of a rolling average of any period or non-rolling average of a period less than 24 hours.
7. The Model Diagnostics Tool now allows you to produce graphs based on the *daily maximum* of the 8-hour rolling average.
8. In the Model Evaluation Tool all possible grouping and filtering combinations have been explicitly listed, meaning it is no longer possible for the run to abort due to an invalid selection.

Note on updating from version 3.2 to version 4.0

- 1) Any workspaces saved using previous versions of the Data Input tool will need to be re-created by running version 4.0 of the Data Input tool, in order to be used in version 4.0 of the Model Evaluation and Model Diagnostic tools.