



What's New in ADMS-Urban 2?

New Features

- ◆ ADMS-Urban 2 includes the **latest DMRB emission factors** for the calculation of road traffic emissions, released by the Highways Agency in February 2003. To use this new dataset users need to enter a road type: Urban, Rural or Motorway
- ◆ **Maximum** number of **road sources** that can be modelled increased from 1000 to **1500**.
- ◆ **Maximum** number of **industrial sources** that can be modelled increased from 100 to **1500**.
- ◆ **Maximum** number of **gridded receptor points** has been increased to allow an output grid of up to **100 by 100** points.
- ◆ Users can input up to **10,000 extra specified receptor points** via a text file to supplement the 50 specified points entered on the Grids screen.
- ◆ ADMS-Urban calculates the **number of exceedences per annum of threshold values** as well as percentiles. The user can enter up to 20 threshold values for each pollutant in the Output screen. This allows users to make a direct comparison between their model predictions and air quality objectives.
- ◆ **Run times have been significantly reduced.** The reduction in run time depends on the number and type of sources, and the modelling options selected. Tests showed a 30% reduction in run time for a typical urban scenario with GRS chemistry, and a 75% reduction for the calculation of annual average and percentile concentrations for a single point source.
- ◆ **Benzene, Butadiene (1,3-Butadiene) and TSP** ('total suspended particulates') have been **added to the default Palette of Pollutants**. The name of the existing pollutant 'PM' has changed to 'PM10'.
- ◆ Options for modelling sources with **time-varying emissions have been extended**. It is now possible to enter up to 20 sets of **hourly (diurnal) emission factors** and 20 sets of **monthly emission factors** for all source types. Each source can be assigned a set of hourly factors and a set of monthly factors, and in addition can be defined to be in **operation for a particular range of wind directions**. The wind direction dependence is only likely to be used when modelling **airport sources**.

- ◆ It is now possible to include a point source and a buildings in a model run with road, line, area and volume sources. The effect of buildings on dispersion will only be modelled for the point sources. Dispersion from the other source types will be the same as in the absence of buildings.
- ◆ Users can **plot contoured results in a latitude-longitude co-ordinate system**. The latitude-longitude co-ordinates are calculated from the X-Y co-ordinates output by ADMS-Urban using one or more reference points defined by the user in the Advanced Options screen in the Contour Plotting interface.
- ◆ The contour plotting tool has been updated to be **compatible with Surfer 8**.
- ◆ When plotting contoured results in Surfer, the user can **select the number of grid lines** in the X and Y directions and the **gridding method** used, via the Advanced Options screen in the Contour Plotting interface.
- ◆ The met pre-processor code has been updated as follows:
 - The list of possible input variables has been extended. The main change is that **solar radiation can now be entered**. This can be useful if cloud cover and surface sensible heat flux are not available. Note that all existing *.met files can still be used.
 - The *.mop file has been extended – it now includes all of the input met variables as well as an increased number of output met variables.
- ◆ The initial vertical plume spread and dispersion height for road source emissions has been decreased from 4m to 2m. This has the effect of increasing concentrations in and near roads.
- ◆ Road sources are now always modelled explicitly. Previously, when calculating long term average concentrations and percentiles, if a grid source and road sources were included in the run, then in the most turbulent meteorological conditions the road sources were not modelled explicitly but were included in the grid source emissions. This will affect long term results for runs including road and grid sources, increasing maximum concentrations in and near roads
- ◆ The reaction time used in the chemistry calculations has been altered to take account of the initial vertical mixing of traffic emissions, and the residence time in street canyons. This may cause small changes in chemistry results when roads are modelled.