CERC ADMS-Urban & ADMS-Roads News Spring 2017

Contents

Latest releases: version 4.1, March 2017

ADMS-Urban and ADMS-Roads News

ADMS-Urban 4.1 and ADMS-Roads 4.1 released

ADMS-Urban 4.1 and ADMS-Roads 4.1 were released in March 2017. These new releases include a greatly enhanced ADMS Mapper, many usability improvements (for example when entering traffic speeds or met. period subsets) and the latest EFT traffic emission factors, v7.0, corresponding to COPERT 4v11.

For more information on all the new features, please refer to the ADMS-Urban or ADMS-Roads 'What's New?' documentation.

Software downloads and free demos

You can now download ADMS-Urban, ADMS-Roads and other CERC software products directly from our website.

Registered users should log in to the User Area, then visit the new software download page where you will find links to download our products.

If you are not yet a customer then you can still download the latest versions of some of our products from the Free demos page.

New features in the ADMS Mapper

The new version of ADMS-Urban and ADMS-Roads comes with an upgraded Mapper. New features in the Mapper include:

- The ability to save project files, allowing background maps, contour plots, layer symbols and settings, etc. to be saved and reopened with your model input files.
- A facility to extract data from image files, which can be used to create terrain data in ADMS format from SRTM or OS Terrain 50 files.
- A tool to simplify road geometry.

For more details, refer to the What's New documentation and the ADMS Mapper User Guide.

ADMS-Urban & ADMS-Roads User Group Meetings

The 2016 ADMS-Urban & ADMS-Roads User Group Meeting, held in London last November, was a great success. Delegates enjoyed a packed and varied programme of presentations ranging from modelling tips to a case study modelling tunnels in Singapore. The presentations are available to download from the CERC website User Area.

Special thanks to our guest speakers: Stephen Inch (GLA), Annie Danskin (Energised Environments) and James Bellinger (ARUP).

The 2017 User Group Meeting will be held in Birmingham on Thursday 2nd November.

CERC News

New release of ADMS 5 and ADMS-Screen

Version 5.2.1 of ADMS 5 was released in February, which is a minor update to version 5.2, released last November. ADMS 5.2 includes a major upgrade to the ADMS Mapper, the same version included in ADMS-Urban 4.1 and ADMS-Roads 4.1, a more flexible hourly time-varying emissions file format and usability improvements including drag-drop functionality. In addition, ADMS 5.2.1 contains the latest versions of AERMOD (16216r) and AERMET (16216) as released by the US-EPA.

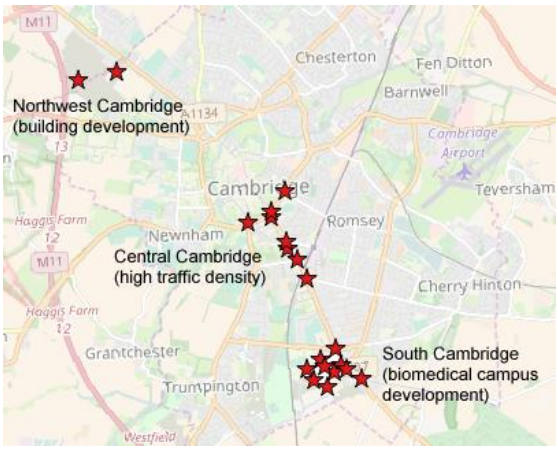
A new version of our industrial screening software, ADMS-Screen, was also released in November 2016.

Consultancy News

Quantifying air quality in Cambridge by combining sensors with computer modelling

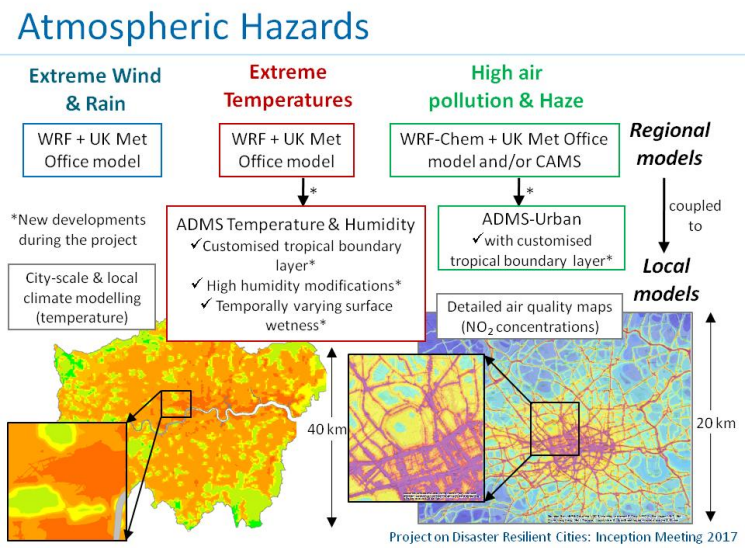
CERC have been collaborating on a project to study ambient air quality across Cambridge using a large number of sensor nodes and computer modelling. Twenty AQMesh sensor pods have been placed at key points around Cambridge, measuring air quality in near real time. Comparisons against a reference instrument give very encouraging results, as shown in a paper recently presented by Professor Rod Jones of the University of Cambridge.

The next steps are to compare collected AQMesh data with ADMS-Urban modelled data for the same area and then use the real-time AQMesh data to improve CERC's airTEXT air quality forecasts for Cambridge.



Disaster Resilient Cities: Forecasting Local Level Climate Extremes and Physical Hazards For Kuala Lumpur

Recent disasters in Malaysia have revealed poor coordination and weak capacity in prediction of floods and landslides and there is concern over the occurrences of strong winds, air pollution (haze) and extreme temperatures.

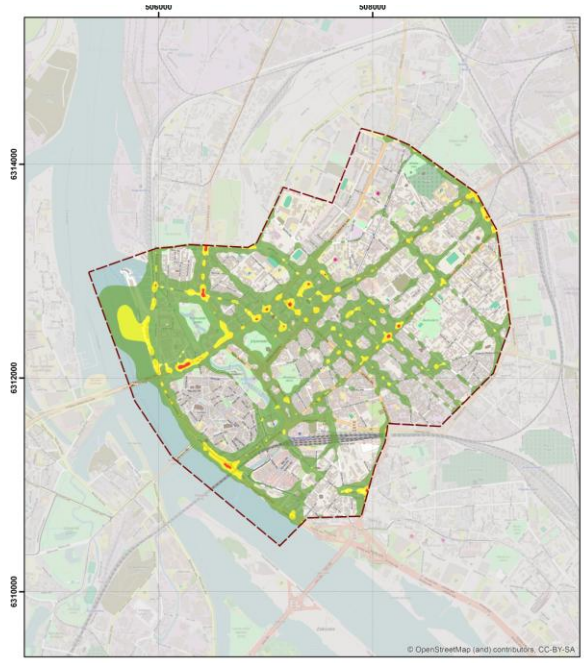


CERC have joined a consortium of 16 research and business organisations, 6 from the UK and 10 from Malaysia, in a project to customise climate and hazard models from the UK to:

- forecast physical hazards common in Kuala Lumpur, i.e. flash floods & floods, landslides, sinkholes, strong winds, urban heat and local air pollution;
- test their viability;
- develop a prototype multi-hazard platform for managing and communicating risks to enhance disaster resilience; and
- promote the platform through outreach and marketing.

This 34-month project is funded jointly by the UK and Malaysian governments through the Newton-Ungku Omar Fund, and is led by the University of Cambridge and SEADPRI-UKM.

Work to support the Riga Air Quality Plan, Latvia



The CERC consultancy team provided detailed technical support and expert advice to Estonian, Latvian and Lithuanian Environment (ELLE) in preparing an Air Quality Plan for Riga City Council. ELLE compiled a comprehensive emissions inventory using EMIT and carried out air quality modelling using ADMS-Urban.

ELLE determined a basis for the development of possible future scenarios through consultation with project stakeholders then used source apportionment to identify the highest contributing sources. As a result, it was decided that potential future measures should be applied to two sectors: local transport (the introduction of congestion charges); and domestic heating (upgrading domestic boilers).

The emissions inventory was updated to include these measures and revised the modelling to quantify the reduction in pollution levels. They completed the Air Quality Plan by carrying out cost benefit analysis and public consultation.

Training News

CERC workshop: Reviewing Air Quality Modelling Assessments for Planning

In February, CERC held a workshop in Cambridge, UK, attended by more than thirty delegates from local authorities and consultancies.

Subjects presented during the day included:

- dispersion model inputs, including emission factors;
- validation, verification and NOx chemistry; and
- assessment of the significance of air quality impacts.

The workshop was a great success and CERC hopes to run a similar event in the near future. If you are interested in attending a workshop in future, please contact CERC.

Discount on CERC training courses

A 20% discount applies to scheduled CERC training courses, if purchased at the same time as a software annual licence or support renewal. This discount also applies to one-day refresher courses. Training must be booked within 12 months of purchase.

Upcoming training courses

Our training courses focus on giving users the knowledge and expertise to efficiently apply CERC software to real-life air quality problems. CERC holds regular 2-day courses at its Cambridge offices. The table shows scheduled training dates for 2017.

Courses may also be arranged at alternative locations and/or dates and can be customised to particular user requirements; for further details, see www.cerc.co.uk/training or contact CERC.

Course	Jun	Oct
ADMS-Roads	20 - 21	10 - 11
ADMS-Urban	13 - 14	17 - 18

Recent publications

Carruthers D, Stocker J, Ellis A, Seaton M and Smith S, 2017: *Evaluation of an explicit NOx chemistry method in AERMOD*. Journal of the Air & Waste Management Association. Article online

A comprehensive list of all our publications may be found on the publications section of our website.

Modelling tips

Modelling Queues

Queuing traffic can be modelled in ADMS-Urban or ADMS-Roads using a file of time varying emission factors (*.fac). Define the road to be modelled twice in the model interface, once with the average emission rate on the road, and once with the emission rate under queuing conditions. Use the .fac file to swap between the two road definitions at different times of day.

More details about modelling traffic queues may be found in a helpdesk note, available from the User Area of the CERC web site.

Modelling pavement concentrations in street canyons

When using the advanced street canyon module, the road width in the model interface represents the carriageway location, and the parameters "Width_L" and "Width_R" in the advanced street canyon file define the locations of building façades. This allows the model to calculate concentrations within road carriageways, on pavements, and at building façades in line with recommendations for public exposure calculations.

The advanced canyon model option also allows the variation of concentration with height to be modelled. For more details see Section 4.2 of the User Guide.

Changing between road traffic emission factor datasets with different vehicle splits

Changing between road traffic datasets with different vehicle splits, for example because of more detailed traffic data becoming available, is not as straightforward as changing the dataset name in the interface. Instead, the road sources should be exported into .spt format, edited to change the dataset name and traffic count classification, and then re-imported back into the model.

More detailed instructions may be found in a helpdesk note in the User Area of the website.

Using QGIS with ADMS-Urban and ADMS-Roads

The ADMS Mapper in the latest version of ADMS-Urban and ADMS-Roads is a powerful tool for viewing and editing input data and viewing output data, but there are some tasks that are easier to carry out in a full GIS package.

QGIS is a free GIS package that is gaining in popularity and has features similar to commercial products like ArcGIS and MapInfo. A UGM presentation provides guidance for using QGIS with ADMS-Urban and ADMS-Roads.

Model evaluation summary document

We regularly publish model validation in various different forms. A useful 'ADMS-Urban model evaluation summary' document is available on our website that provides an overview of the validation papers available for ADMS-Urban (including ADMS-Roads) and lists of references that you may find useful when writing proposals.

For a full list of CERC model validation papers see the model validation page on our website.

Emailing CERC for Help

If you are having problems using any of our models and have a support contract with us, you may contact the helpdesk and ask for help. One of the best ways of doing this is by clicking on the Email CERC option from the Help menu in the interface. This creates a template email addressed to the helpdesk that includes useful information about your model and licence, which can enable us to investigate and diagnose any issues much quicker.

Searching the User Guide

The User Guide can be accessed via the Help menu. Some users have found that searching in the User Guide using Adobe Acrobat does not return the correct results. To fix this, in Acrobat, go to Edit > Preferences > Search and click on the Purge Cache Contents button.

New and updated helpdesk notes

Helpdesk notes on carrying out many common model tasks can be downloaded from our User Area. Recently added or updated notes include:

Reducing run time using variable grid resolution

Finding the met condition causing the maximum concentration

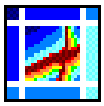
Products and Services

CERC have been developing world-leading air dispersion and complex flow modelling solutions since 1985. Our consultancy team was established to apply our expertise to a wide variety of applications for a diverse client base.

Other software solutions

ADMS 5.1

Local scale air quality modelling for industrial sources



ADMS-Urban Regional Model Link

Automated nesting of ADMS-Urban within a regional air quality model

ADMS-Airport

Urban scale modelling with detailed treatment of aircraft emissions

GASTAR

Modelling emergency releases of dense gases

FLOWSTAR-Energy

Modelling wind energy and airflow at high spatial resolution for wind farm planning and other airflow-related applications

ADMS-STAR

Short-term accidental release modelling

For custom-made software solutions, see www.cerc.co.uk/research or contact CERC.

Consultancy services

Our consultancy services include:

- Air quality assessments, e.g. odours, LAQM, planning and permitting
- Specialised modelling, e.g. dioxins, accidental releases, wind energy
- Compilation of emissions inventories and forecasting for large urban areas
- Project support and review services

For more details, see www.cerc.co.uk/consultancy or contact CERC.

Contacting the helpdesk

The CERC helpdesk is on hand to provide model support. Contact us:

- From the ADMS-Urban or ADMS-Roads interface, select Help, Email CERC
- Email help@cerc.co.uk
- Phone +44 (0)1223 357773