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Latest model release: version 4.1.1, Jan 2018

[News](#)[Modelling Tips](#)[Recent Publications](#)[Training Information](#)[Products and Services](#)**News****ADMS-Urban & ADMS-Roads User Group Meeting**

The 2018 ADMS-Urban and ADMS-Roads User Group Meeting (UGM) was held in Edinburgh on 8th November. The 88 attendees heard a range of talks from CERC staff and software users containing the latest news and advice on modelling using ADMS-Urban and ADMS-Roads. Guest speakers included Alan McDonald from [SEPA](#), Mark Chapman from [Cundall](#) and Blaise Kelly from [Hydrock](#). The presentations are available to [download](#) from the CERC website User Area.

The 2019 ADMS-Urban and ADMS-Roads UGM will be held at St Anne's College, Oxford on Thursday 14th November. Registration will open online in the summer.

EFT 9.0 in ADMS-Roads and ADMS-Urban

The UK Department for Environment, Food & Rural Affairs and the Devolved Administrations have released version 9.0 of the [Emissions Factors Toolkit](#) (EFT). Details of the updates in this new version are given on page 5 of the EFT user guide.

We are currently incorporating the new data into ADMS-Roads, ADMS-Urban and ADMS-Airport. We anticipate releasing a patch to version 4.1 of these models in June, which will allow use of EFT 9.0 emissions factors.

The new version of EFT includes the effect of loading and gradients on Heavy Duty Vehicles. These features will be made available in version 5, which will be released later this summer.

CERC training on tour

In recent months, CERC trainers have travelled around the globe to train our software users.

Matt Williams, Catheryn Price and Tricia Gilmour spent two weeks in Croatia training the [Croatian Meteorological and Hydrological Service](#), focusing on ADMS-Urban with EMIT and introducing ADMS 5, ADMS-Puff and the Regional Model Link.

In December, Steve Smith and Jenny Stocker were in Malaysia training delegates from [Universiti Kebangsaan Malaysia](#) to use the ADMS-Urban Temperature and Humidity model.

For details on customised training courses, see www.cerc.co.uk/training or [email CERC](#).



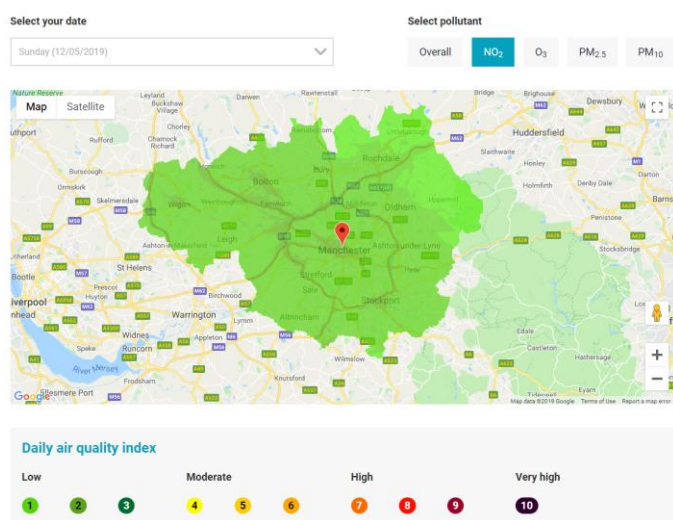
Air Pollution Monitoring and Early Warning Platform for Guangdong

China's Pearl River Delta agglomeration in Guangdong is the largest urban area in the world. Despite significant investment into improving the environment, the magnitude of the problems faced frequently results in hazardous levels of air pollution.

A new project, bringing together UK and Chinese air quality experts, will forecast air quality at street level resolution and disseminate both real time and forecast air quality together with high pollution alerts via an integrated smart platform. The project couples the WRF/CMAQ regional models with the ADMS-Urban local model. The project will enable the development and testing of air pollution control strategies both for short-term episodes and for longer term improvement. The system will be tested and optimised using air quality monitors already in place and additional innovative low cost, small sensors deployed by the project.

This 24 month project is led by CERC and [Guangzhou HKUST FYTRI Research Institute](#), and is funded by Innovate UK and the Guangdong Science and Technology Department.

ADMS-Urban providing air quality forecasts for Manchester



We are delighted to announce that Manchester (UK) residents can now [sign up](#) for free air quality alerts by text message, email and recorded call. The messages are based on a forecast of air quality to enable the public to plan ahead.

CERC and [Clean Air Greater Manchester](#) are providing three-day forecasts of NO₂, PM₁₀, PM_{2.5} and ozone at street-scale resolution using CERC's ADMS-Urban modelling system. This builds on the detailed modelling work for Greater Manchester's Clean Air Plan, where ADMS-Urban was used to identify areas that required interventions to improve air quality. For more information on ADMS-Urban or CERC forecasting services please [contact CERC](#).

Mayor launches 'hyperlocal' air mapping in London with smart sensors and Google Street View cars

On 15 January, the Mayor of London, Sadiq Khan, launched the world's most advanced and comprehensive network of air quality monitors. David Carruthers represented CERC at the launch.

[Breathe London](#) is a consortium led by the Environmental Defense Fund, including CERC, Air Monitors, University of Cambridge, National Physical Laboratory and Google Earth Outreach, who have equipped two of their iconic Street View cars with air quality sensors. These are taking pollution readings at tens of thousands of locations while they travel through London's streets, building up a picture of London's air quality over the course of a year and identifying areas of poor air quality that the network of fixed monitors might miss. Meanwhile, 100 state-of-the-art fixed sensor pods have been mounted on lampposts and buildings close to known air quality hotspots and sensitive locations such as schools and nurseries.

The data these monitors collect will provide an unprecedented level of detail about London's air quality and deliver new insight into the sources of pollution. ADMS-Urban will be used along with the sensor data to generate hyper-local air quality mapping for nowcasts, forecasts and for policy studies. The public will soon be able to view this data on an interactive online [map](#) built by CERC on the Breathe London website.

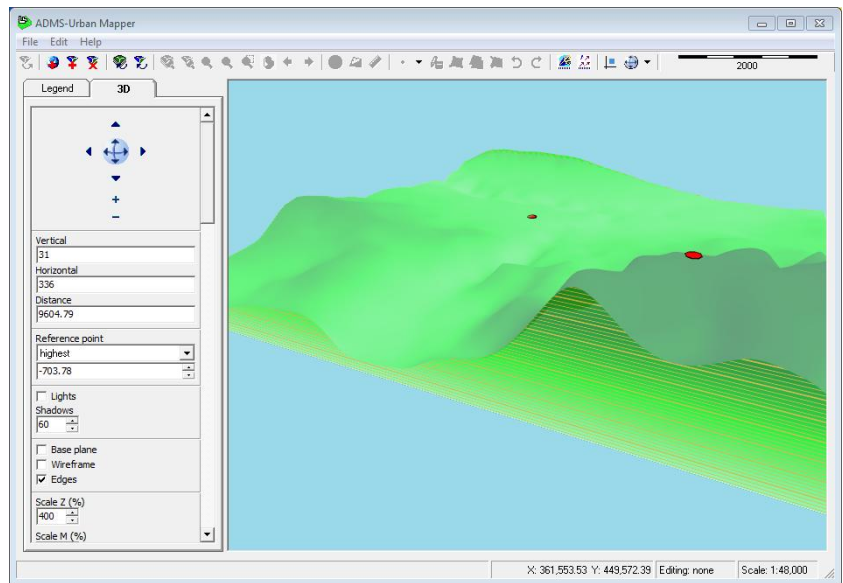


Modelling Tips

Creating and displaying Terrain files

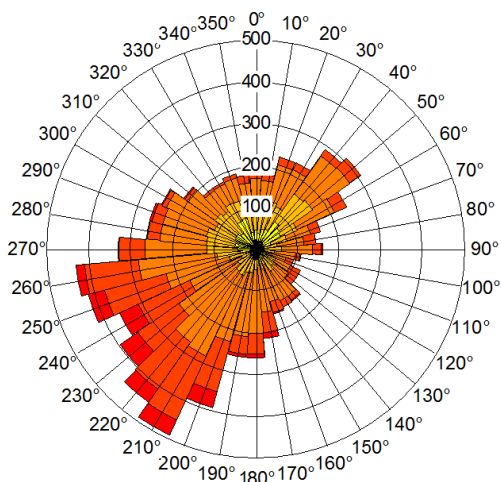
It is quick and easy to obtain terrain data, convert it to an appropriate format for CERC models, and visualise it accurately in the Mapper. OS Terrain 50 (Great Britain) and SRTM (global) data can be downloaded for free online. Once it is loaded into the Mapper, simply click-and-drag over the required area using the **Extract data from raster layers** tool to create a .ter file.

See [helpdesk note 111](#) for full details, and [helpdesk note 116](#) for tips on displaying .ter files as a continuous surface layer in the Mapper.

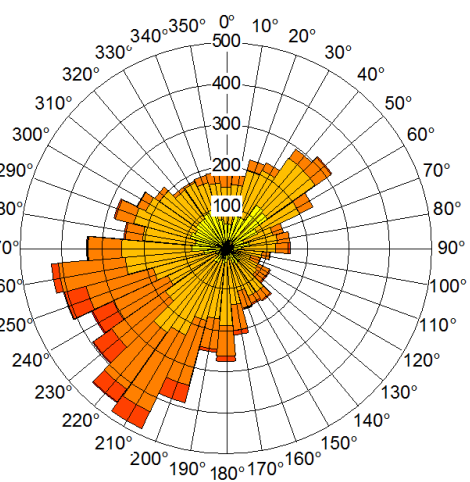


Setting the met site roughness length

When modelling urban areas, it is important to enter appropriate surface roughness lengths for both the dispersion site and meteorological site. Meteorological data are often measured at airports, which have a low roughness (e.g. 0.2 m) compared to urban areas (e.g. 1 m). Wind speeds at met. sites therefore tend to be higher than in urban areas. The figures below show wind roses for data measured at a rural location and the corresponding data calculated by ADMS for a dispersion site with a higher surface roughness.



Rural location: Average wind speed 4.0 m/s



Urban location: Average wind speed 2.5 m/s

Excluding sources when importing from SPT files

When importing source data from SPT files, sometimes only some of the sources defined in the SPT file are required. There are two methods for only importing some sources from SPT files.

- 1) On import, only select the sources you want in the import wizard. The lists can be sorted by type and name, both ascending and descending to help you do this.
- 2) Open the EIT file (the emissions definitions file) in an editor. Delete the lines for the sources you wish to remove. From a UPL with no sources defined, import the sources from the SPT and save the UPL. On save, you will be prompted to keep or delete sources with no emissions. Choose delete and tick the box to say do the same for all similar sources. Your UPL now contains only the sources that had emissions defined. This is not suitable for situations where you wish to retain some sources with no emissions.

Drawing a closed road source

If you wish to close a road source in the Mapper, e.g. when drawing a roundabout, follow these steps:

- Turn on **Snap to shape** in the **File > Preferences** menu.
- Select the Road (or Line) sources layer and click the **Add feature** button.
- Add the road or line by clicking on the map to add vertices.

- Make a final vertex near to the first vertex.
- Click directly on the final vertex with the mouse and drag it close to the first vertex.
- When you release the mouse it will snap to the exact location of the first vertex.
- Save your edits.

You can confirm that the line is closed by viewing its geometry in the interface.

Panning the map view while adding a feature

When creating a new feature in the Mapper that extends off the current map view, you can pause the editing process to pan the map to the desired location. Hold down the Shift key and use the mouse to drag the map in the appropriate direction. Releasing the Shift key will return you to editing the same feature, and you can then keep adding new vertices in the usual manner.

Recent Publications

Hood C, MacKenzie I, Stocker J, Johnson K, Carruthers D, Vieno M and Doherty R, 2018: *Air quality simulations for London using a coupled regional-to-local modelling system*. Atmospheric Chemistry and Physics, vol. 18, pp. 11221-11245. [Article online](#)

Popoola OAM, Carruthers D, Lad C, Bright VB, Mead MI, Stettler MEJ, Saffell JR and Jones RL, 2018: *Use of networks of low cost air quality sensors to quantify air quality in urban settings*. Atmospheric Environment, vol. 194, pp. 58-70. [Article online](#)

Stocker J, Carruthers D, Johnson K, Hunt J and Chan PW, 2018: *Modelling adverse meteorological conditions for aircraft arising from airflow over complex terrain*. Meteorological Applications. [Article online](#)

A comprehensive list of all our publications may be found on the [publications](#) section of our website.

Training Information

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 2019.

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 [email CERC](#).

Course	Jun	Oct
ADMS-Roads	11 - 12	8 - 9
ADMS-Urban	FULL	15 - 16

Products and Services

CERC has 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

Local scale air quality modelling for industrial sources



GASTAR

Modelling emergency releases of dense gases



ADMS-Urban Regional Model Link

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



FLOWSTAR-Energy

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



ADMS-Airport

Urban scale modelling with detailed treatment of aircraft emissions



ADMS-STAR

Short-term accidental release modelling

For custom-made software solutions, see www.cerc.co.uk/research or [email CERC](mailto:email@cerc.co.uk).

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
- Research with complex atmospheric flows and air quality

For more details, see www.cerc.co.uk/consultancy or [email CERC](mailto:email@cerc.co.uk).

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