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Latest model release: version 5.2.4, Aug 2018

[News](#)[Modelling Tips](#)[Recent Publications](#)[Training Information](#)[Products and Services](#)**News****ADMS 5 User Group Meeting**

The 2018 ADMS 5 User Group Meeting (UGM) was held in Edinburgh on 7th November. The 68 attendees heard a range of talks from CERC staff and software users containing news and advice about modelling using ADMS 5. Guest speakers included Ruth Fain from [Golder](#), Simon Coldrick from [HSE](#), Annie Danskin from [ITP Energised](#) and Steve Smith from [AS Modelling and Data](#). The presentations are available to [download](#) from the CERC website User Area.

The 2019 ADMS 5 UGM will be held at St Anne's College, Oxford on Wednesday 13th November. Registration will open online in the summer.

CERC training on tour

In recent months, CERC trainers have travelled around the globe to train our software users. Catheryn Price, Matt Williams 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, Jenny Stocker and Steve Smith 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](#).

London air quality: modelling Brent's proposed new Energy Centre

Brent Council is procuring a district energy network as part of their South Kilburn regeneration project. The associated Energy Centre will include four boilers and up to two CHP units. Two new apartment buildings will be built close to the Energy Centre stack, and emissions from the stack may impact on the facades of these buildings. The Energy Centre and apartment buildings are also located within an Air Quality Management Area for 24-hour average particulate (PM₁₀) and annual average NO₂ concentrations.

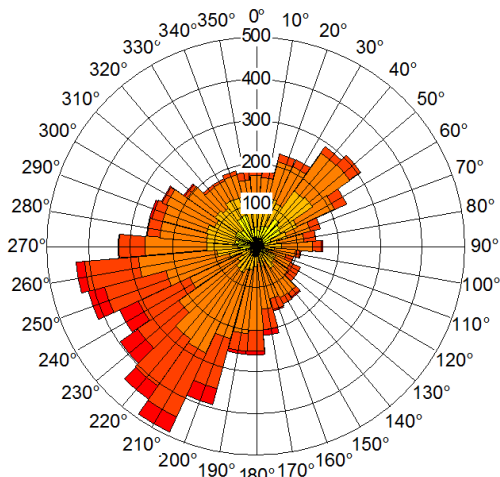
The CERC consultancy team used ADMS 5 to investigate the air quality impact of the proposed Energy Centre. Concentrations of NO₂ were calculated on a high-resolution grid centred on the Energy Centre, as well as at the facades of the nearby apartment buildings.

The Environmental Protection UK and Institute of Air Quality Management's [Land Use Planning & Development Control: Planning for Air Quality](#) guidance was used to assess the significance of the air quality impacts of the Energy Centre at locations relevant for public exposure. Impacts were classified as Negligible at ground level receptors, while at elevated receptors, the impacts were classified as Slight.

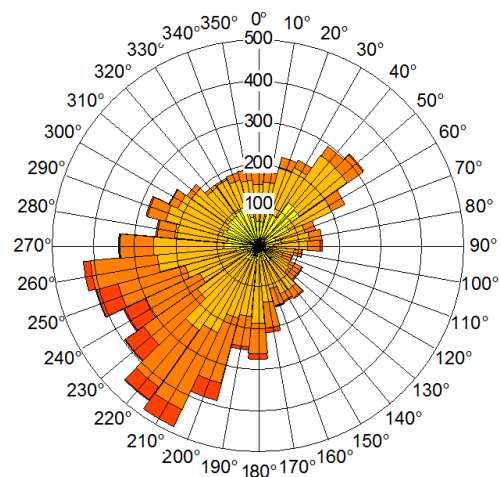
Modelling Tips

Setting the met site roughness length

When modelling sources in 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 meteorological 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 the 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

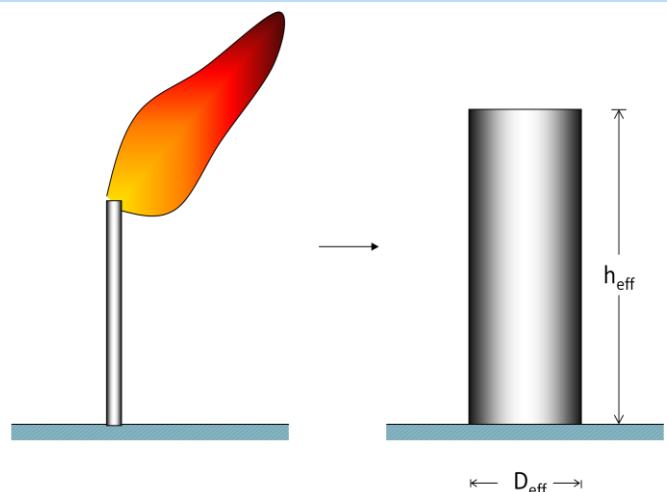
When importing source data from SPT files, sometimes only some of the sources defined in the SPT file are required. There are two methods for only importing some sources from SPT files.

- 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 an APL with no sources defined, import the sources from the SPT and save the APL. 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 APL 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.

Stack downwash

The flow of air around a stack can result in reduced plume rise, particularly for sources with relatively small upward momentum. When modelling emissions from point sources in ADMS, the effect of this 'stack-induced downwash' is taken into account by default.

It is possible to switch off stack-induced downwash for specific sources using an .aai file (see Section 4.21 of the ADMS 5 User Guide). Examples of when this might be relevant include when modelling sources using an effective diameter different to the physical stack diameter. For instance, flares are often modelled using an effective flame diameter rather than the actual flare stack diameter.



Panning the map view while adding a feature

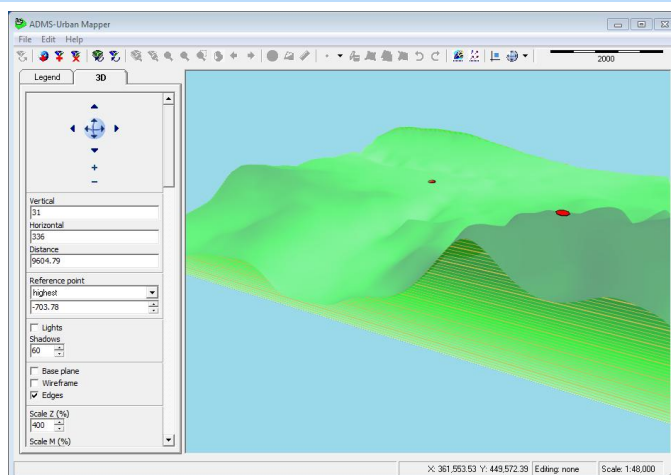
When creating a new feature in the Mapper that extends off the current map view, you can pause the editing process to pan the map to the desired location. Hold down the Shift key and use the mouse to drag the map in the appropriate direction. Releasing the Shift key will return you to editing the same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

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.



Ambient source exit temperature

For sources with releases at ambient air temperature, the **Ambient** setting should be used in the source definition. This option can be found on the left-hand-side of the industrial sources table and it ensures that releases do not incorrectly drop below ambient temperature.

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 dates for 2019.

Course	Jun	Oct
ADMS 5	4 - 5	1 - 2

Courses may also be arranged at alternative locations and/or dates and can be customised to particular user requirements. For more information, visit www.cerc.co.uk/training or [contact CERC](#).

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-Roads and Roads-Extra](#)

Local scale air quality modelling including road and industrial sources



[GASTAR](#)

Modelling emergency releases of dense gases



[ADMS-Urban](#)

Urban scale modelling including roads, industrial and diffuse sources



[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, visit www.cerc.co.uk/research or [email CERC](mailto:help@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, visit www.cerc.co.uk/consultancy or [email CERC](mailto:help@cerc.co.uk).

Contacting the helpdesk



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

- From the ADMS 5 interface, select Help, Email CERC
- Email help@cerc.co.uk
- Phone +44 (0)1223 357773