

UK Atmospheric Dispersion Modelling Liaison Committee

History and objectives

The UK Atmospheric Dispersion Modelling Liaison Committee (ADMLC) dates back to 1977 when a group comprised of government departments, utilities and research organisations was set up to review developments in atmospheric dispersion modelling, particularly for application to radioactive releases. This group was responsible for a series of reports describing practical methods for modelling atmospheric dispersion and was also responsible for initiating the development of the first version of the ADMS software. In 1995 ADMLC was reformed and its range of interests and its membership were expanded to more fully reflect the needs of industrial and regulatory organisations. Its main aim is to review current understanding of atmospheric dispersion and related phenomena for application primarily in authorization or licensing of discharges to atmosphere resulting from industrial, commercial or institutional sites. The Committee's emphasis is on fixed sources, rather than transport sources, and covers both releases under controlled conditions occurring at a constant rate over long periods, and releases over shorter periods such as accidents or controlled situations where the release rate varies. ADMLC facilitates the exchange of ideas and highlights where there are gaps in knowledge. It tries to provide guidance to, and to endorse good practice in, the dispersion modelling community. It is keen to promote relationships with other dispersion modelling groups. The Committee has hosted workshops, and welcomes ideas for joint meetings with other organisations or for workshops on particular topics. This article aims to bring the work of the committee to a wider audience.

Published studies

ADMLC has produced a number of reports which are now available on the Committee's website (<http://admlc.org.uk/>) along with other information such as the terms of reference and proceedings of a workshop organised by ADMLC. The topics considered include

- a simple Gaussian model, which has been widely used and is generally known as the R91 model
- ways of extending this to describe deposition, dispersion from buildings, plume rise, effects at coastal sites
- the uncertainty on the model predictions
- problems modelling wet deposition from short releases.
- dispersion at low wind speed
- dispersion from sources near groups of buildings, or in urban areas,
- plume rise
- dispersion in coastal areas
- the use of old met data or data from an observing point some distance from the release point
- the possible use of data from numerical weather prediction programs
- best practice for binning met data in calculating concentrations from a continuous release
- uncertainty on dispersion model predictions from the uncertainty in deriving stability indicators from met observations
- the proceedings of a workshop on the reliability of dispersion models for regulatory applications
- review of Royal Meteorological Society guidelines for atmospheric dispersion modelling
- calculation of air concentration indoors
- dispersion following explosions
- review of atmospheric dispersion in complex terrain

Current work

The organisations represented on the Committee pay an annual subscription which is used to fund areas of work agreed by the Committee, and to support in part its secretariat, provided by Health Protection Agency. Details of the projects the Committee would like to fund are published on the ADMLC website, <http://admlc.org.uk/work.htm>.

A review of 'steady-state' modelling approaches (i.e. when it is assumed that the meteorological conditions do not change during the release or during the plume travel time) to determine when they are appropriate and when alternative methods should be used has recently been completed. In addition, ADMLC is funding a review of dispersion in fog and a review of methods for event reconstruction and source term estimation; a forum is being held in May 2011 to further discuss the topic of event reconstruction and source term estimation and its practical application. In 2011/2012 the Committee also plans to fund reviews of urban dispersion modelling techniques and the processes leading to indoor concentrations from outdoor sources.

Membership

ADMLC consists of representatives of UK Government Departments, Government Agencies and private sector organisations. The Committee is interested in obtaining new members and anyone considering joining should contact ADMLC via the email address given below. The following organisations are currently members of ADMLC.

Atomic Weapons Establishment, Aldermaston
Defence Science and Technology Laboratory
Department for Environment Food and Rural Affairs (Defra)
Department of Energy and Climate Change
Environment Agency
Food Standards Agency
Health and Safety Executive
Health Protection Agency
Home Office
Met Office
AMEC
Nuclear Department, HMS Sultan
Scottish Environment Protection Agency
Shell Global Solutions

Contact Details

For further information see <http://admlc.org.uk/> or e-mail admlc@hpa.org.uk