



ADMLC Seminar: Atmospheric Dispersion Modelling of Wildfire Smoke Plumes

09:00-16:30 GMT Thursday 13 February 2025

Address: Met Office, Fitzroy Road, Exeter, Devon, UK

Directions: [How to find the Met Office.](#)

The severity of wildfires is increasing in many parts of the world, due to climate change. Atmospheric pollutants (smoke) emitted by wildfires can cause adverse health impacts over considerable distances downwind. Projections from the Met Office indicate that a 2°C increase in global temperatures in the coming years would double the days in the UK with very high fire danger and extend the wildfire season from summer into autumn. The Saddleworth Moor fire near Manchester (UK) in 2018 led to poor air quality for 4.5 million people and doubled the estimated mortality rate due to exposure to outdoor particulate matter. In Canada, the 2023 fires burnt a record-breaking 15 million hectares (4% of Canada's forest area) and required the evacuation of more than 250,000 people from over 200 communities.

During a wildfire event, rapid forecasts, from fire spread and smoke plume dispersion models, are essential to inform emergency response operations. There are many challenges in developing these models. Smoke emissions vary significantly depending on fuel composition, fuel moisture, fire characteristics, and meteorological conditions. Dispersion modellers need to consider how best to use observations and numerical weather prediction (NWP) data, and the inclusion of appropriate models for plume rise and atmospheric chemistry.

This seminar aims to bring together those with an interest in wildfire smoke dispersion modelling. We plan to discuss the capabilities and limitations of different models and explore key gaps and challenges in providing dispersion modelling predictions for wildfires. The seminar will be an opportunity to meet people actively working in different aspects of the field.

There is no fee to attend this seminar. However, you must register to attend. Please register to attend in person by completing this form: <https://forms.office.com/e/FJM7xcJBzm> or by contacting the ADMLC Secretariat at: admlc@ukhsa.gov.uk **by Monday 13th January.**

The ADMLC is also inviting **poster presentations** at this event. Please get in touch if you would like to present a poster. There is time in the agenda after lunch for a short presentation by those presenting posters.

Agenda for Thursday 13 February 2025

09:00	Registration and coffee	
09:30	Welcome to the Met Office ADMLC introduction Introduction to the public health impact of wildfires and why modelling is vital to understanding population exposure	Sarah Millington (Met Office) Simon Gant (HSE) Andrew Kibble (UKHSA)
10:00	Estimating mass and heat emissions and near-field downwind pollutant impacts from controlled agricultural field burns	Steve Hanna (Hanna Consultants)
10:40	Large wildland fire behavior and fire weather forecasting at hectometer-scale resolution: codes, approaches and case studies	Jean-Baptiste Filippi (University Corsica) and Benjamin Truchot (INERIS)
11:20	Air quality impacts of the Saddleworth Moor fires 2018	Benjamin Drummond (Met Office)
12:00	Lunch	
13:00	Introductions to posters	
13:20	TBC	Mark Parrington (ECMWF)
14:00	Forecasting transport and dispersion of wildfire smoke for environmental emergency response in Canada and elsewhere using the Lagrangian particle dispersion model MLDP	Alain Malo (ECCC) <i>virtual</i>
14:40	Posters and coffee break	
15:20	TBC	Barry Baker (NOAA) <i>virtual</i>
16:00	Wrap up and summary	
16:30	Close	

Times in GMT