

# Webinar Series



## Constructing a Digital Environment

**Topic: AI in Environmental Sciences from research developments to underlying infrastructure and policy implementation**

**Speaker: Dr. David Topping**

**Time: Friday 31<sup>st</sup> March 11:00 GMT**

**Registration and further details:**

[https://ukri.zoom.us/webinar/register/WN\\_9odfE46BQI63U0wTm24Gzg](https://ukri.zoom.us/webinar/register/WN_9odfE46BQI63U0wTm24Gzg)

David's research interests focus on building computational models of atmospheric aerosol particles for use in interpretation of measured properties and as sub models for incorporation into climate change models. The research area is highly multi-disciplinary, covering: Physics, Chemistry, Numerical methods and Computational Science.

In addition to the above, David's work includes evaluating how machine learning might mitigate existing 'complexity' bottlenecks in atmospheric modelling, experimental data analysis and impact assessment. This includes, for example, replacing parameterised or iterative models of key atmospheric processes, traditionally solved using stiff ODE methods, using surrogate models. This also includes extracting new information from existing instrumentation through a wide range of both supervised and unsupervised methods. David collaborates on methods that combine both air pollution data and human symptomatic responses. He is also co-director of a new programme to develop underlying infrastructure that will connect environmental data with other domains and thus support further development of AI and associated movements, including Digital Twinning.



In this webinar, David will provide us an overview of different applications of Artificial Intelligence in Environmental Sciences and reflect on future requirements from the research to policy interface.

The **NERC Constructing a Digital Environment (CDE) programme** is running a series of online Webinars, aiming to develop the digitally enabled environment, benefitting scientists, policymakers, businesses, communities and individuals. Our seventh webinar series, led by Expert Network member Matt Fry, UKCEH, focusses on the development, use and application of Artificial Intelligence techniques in Environmental Science.



<https://digitalenvironment.org/cde-webinar-series>