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Tropospheric Chemistry Modelling in an Earth System Model

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Interactions between atmospheric chemistry, aerosols, and the biosphere are important components of an Earth System Model. To understand the uncertainties of the coupled system, we need to investigate the role of biases in the coupling between model components. Here, we examine the response of a coupled chemistry-climate model to the known biases in some of the fields which drive the chemistry component of the model.

We will make use of a new community model (called the UK Chemistry and Aerosols model) being developed jointly in the UK and coupled to the Hadley Centre's climate model, HadGEM1. We will present the known climate model biases and explore the impact of these on a tropospheric chemistry scheme running within UKCA.