

Presentation 8 Interaction of an Eulerian flue gas plume with wind turbines – a computational study
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The number of onshore wind farms within the UK is increasing at a considerable rate. The scale of the demand for clean energy along with the relatively small land area within the UK is leading developers to locate wind farms increasingly close to urban or industrialised areas. A key environmental concern that results from this trend is the effect of nearby wind turbines in modifying the dispersal of pollutants from industrial sites, and plumes from flue gas stacks in particular. The presentation will describe how a computational model that is able to simulate the wake dynamics of wind turbines to a high fidelity has been modified and to simulate the interaction of such turbines with smoke plumes. Simulations of several representative plume-turbine configurations will be demonstrated. The emphasis, however, will be on the potential of the model to yield insight into the, at present largely unknown, fluid mechanics of turbine-plume interactions.