

A COMPARISON OF AIR POLLUTION MODELLING TECHNIQUES AT A MAJOR UK REGIONAL AIRPORT

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Considerable progress has been made on improving the efficiency of aircraft engines in recent years, with a resulting reduction in emissions. Further improvements are forecast, however any projected emissions improvement is by far outstripped by projected air traffic growth. Therefore, emissions from aviation and related sources will result in higher air pollution concentrations close to airports. The air pollution impact close to airports' is usually assessed by one of two methods, due to modelling constraints. Method one tends to only model the airport in spatial detail and is used when the airport is the main source of interest, such as in a planning application, and does not normally include spatially disaggregated emissions for the surrounding area. Hence, total modelled concentrations away from the airport tend to be crude. Method two tends to crudely model the airport as a limited number of volume or area sources. This method is normally used when the airport is not the main emission source of interest and therefore is not modelled in detail due to limitations in the number of sources to be modelled. This methodology whilst allowing an element of the airport's emissions to influence ground level concentrations, is not necessarily detailed enough to confidently predict the air quality impact of an airport on the surrounding area. This paper considers the differences in ground level air pollution estimates, that the application these two methodologies results in, and draws conclusions as to how a more robust methodology may be used in the future.