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IDENTIFYING APPROPRIATE AIR QUALITY MANAGEMENT ACTIONS FOR PM10 IN SOUTH EAST ENGLAND

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Local authorities across Europe are currently engaged in the process of air quality assessment and management as prescribed by a set of Framework and Daughter Directives. In the UK, these have been incorporated into a National Air Quality Strategy and governed by a set of Air Quality Regulations. This paper focuses on the assessment and management of PM10, which after nitrogen dioxide, has the greatest number of Air Quality Management Area (AQMA) declarations in the UK. The management of PM10 is complicated by the diverse nature of interacting long range and local sources in different size fractions. Furthermore, the usual method of measurement in the UK (TEOMs) means it is difficult to determine the contribution from the various possible sources. PM10 and PM2.5 data have been collected gravimetrically from an AQMA in East Sussex, and the filters analysed for chemical composition. In addition, differences between PM size fractionation and chemical composition were examined on high and low pollution days. This analysis demonstrates the influence of local, marine and secondary particles on the overall concentrations and highlights the enhanced background concentrations in the South East of England. The research links particulate size fractionation data, chemical composition data and meteorological back trajectories and concludes that in coastal regions, the standard PM10 measurements may not be sufficient for local air quality management to improve air quality in accordance with the defined particulate matter air quality objective.