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A Megacity's Oxidizing Footprint and Urban and Rural European Ozone Trends

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Ozone is formed in the atmosphere from photochemically driven reactions of nitrogen oxides, volatile organic compounds, and carbon monoxide. Ozone has been shown to cause adverse health effects and environmental damage, and also affects climate. Increasingly restrictive air quality regulation over the past two decades has generally resulted in significant reductions of ozone precursor emissions. The decreasing trends in ozone precursor compounds are however frequently not accompanied by a decrease in regional ozone. An assessment of ozone and ozone precursor compound trends in the London megacity from 1998 to 2009 was accompanied by a modelling study which demonstrates the changing footprint of the megacity in response to the changes in emissions. In addition, trends from rural sites around London, as well as a selection of sites from the GEOmon harmonized data set in Europe will be presented.