Airborne particulate matter monitoring in Kenya using calibrated low cost sensors

Francis D. Pope^{1*}, Michael Gatari², David Ng'ang'a², Alexander Poynter¹ and Rhiannon Blake¹

¹School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, United Kingdom, B15 2TT.

²Institute of Nuclear Science and Technology, University of Nairobi, Nairobi, Kenya,

*Corresponding author – <u>f.pope@bham.ac.uk</u>

Table S1 Mean average PM mass concentrations (PM_1 , $PM_{2.5}$ and PM_{10}) and daily exceedances of the WHO PM guidelines ($PM_{2.5}$ and PM_{10}) observed at the three measurement sites during the intensive period. ¹WHO guidelines for daily PM_{10} and $PM_{2.5}$ are 50 and 25 µg/m³, respectively

Measureme	Measureme	Average	Average	Average	% daily	% daily
nt location	nt days	PM_1 mass	PM _{2.5} mass	PM ₁₀ mass	PM _{2.5}	PM ₁₀
	(number)	concentrati	concentrati	concentrati	exceedanc	exceedanc
		on (µg/m³)	on (µg/m³)	on (µg/m³)	es1	es1
Urban	14	17.1	25.3	62.6	35.7	71.4
background						
Urban	14	33.0	48.2	120.6	100.0	100.0
roadside						
Rural	14	11.6	16.6	23.4	21.4	0.0
background						

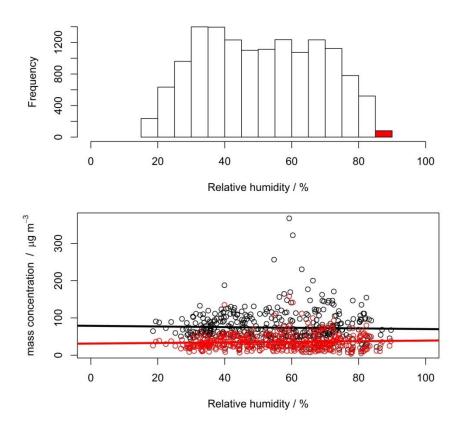


Figure S1. There is no dependence on recorded PM mass concentration upon RH. Top panel – histogram of recorded RH at the urban background site. The data with RH greater than 85% RH is shown in red and represents only 0.84% of the data recorded. Bottom panel – scatter plots of PM₁₀ and PM_{2.5} versus RH for the urban background site. Black and red points represent PM10 and PM2.5 data, respectively. Neither site shows any significant dependence of PM concentration upon RH, as expected with respect to Crilley et al. 2018

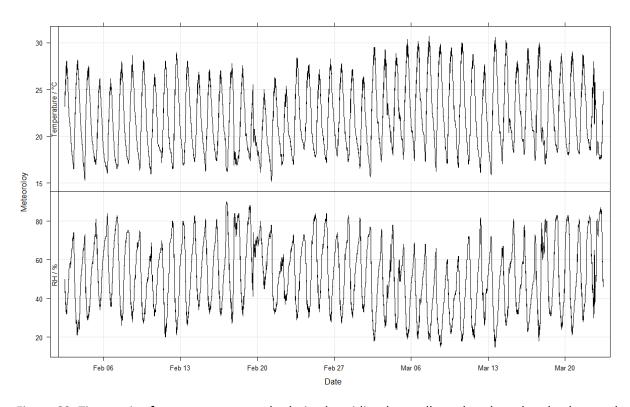


Figure S2. Time series for temperature and relative humidity data collected at the urban background field site in Nairobi.