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A study on the performance of low-cost sensors for source apportionment at an urban background site

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Monitoring	Model	Manufacturer	Grade	Approximate cost (£)
OPC	OPC-N3	Alphasense	LCS	250
NO	NO-B43F	Alphasense	LCS	250
NO_2	NO2-B43F	Alphasense	LCS	250
O_x	Ox-B43I	Alphasense	LCS	160
Black Carbon	MA200	Aethlabs	LCS	5,700
Lung Deposited Surface Area		Naneos	LCS	8,500
ACSM	Quad - ACSM	Aerodyne	RG	170,000
PM	Fidas 200E	Palas	RG	25,000
NO_x	T500U	Teledyne	RG	15,000
Black Carbon	AE33 Aethalometer	Magee Scientific	RG	25,000
O_3	49i	Thermo	RG	3,000

Table S1: List of LCS and RG instruments used in the present study

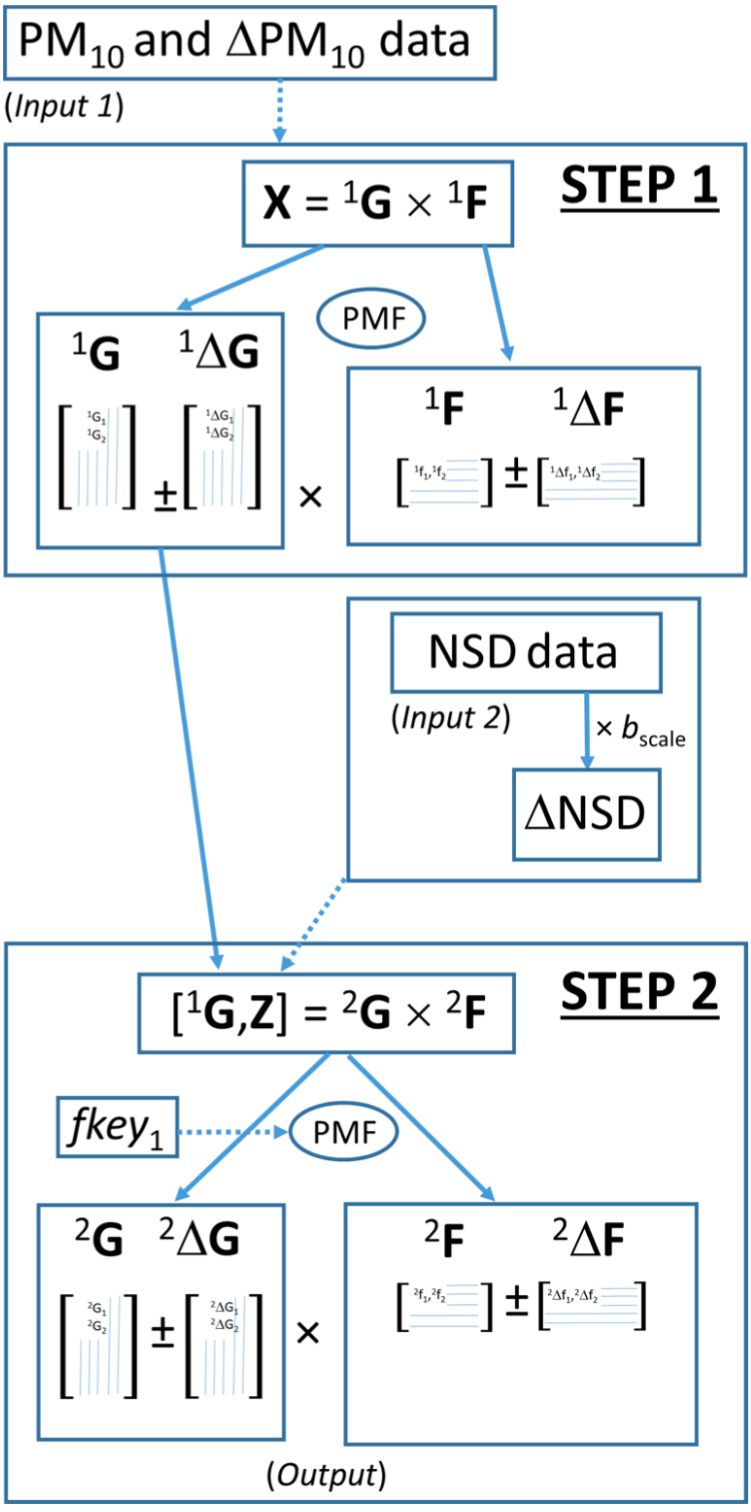

Figure S1: Flow diagram showing the flow of data through the two-step PMF-PMF analysis. The PMF analyses of a single dataset **X** are combined in step 1, and output is indicated by factors and uncertainties ^{1}**G**, 1**ΔG**, 1**F** and 1**ΔF**. The second PMF analysis is carried out on the joint dataset [1G,Z] and yields factors and uncertainties ^{2}**G**, ^{2}**ΔG**, ^{2}**F** and ^{2}**ΔF**. In the Beddows and Harrison, 2019 analysis **X** and ^{1}**G** are PM10 composition data and **Z** is the auxiliary NSD data (opposite to what was used in the present study). Figure and caption are reproduced from Beddows and Harrison, (2019), under the Creative Commons Attribution 4.0 Licence.

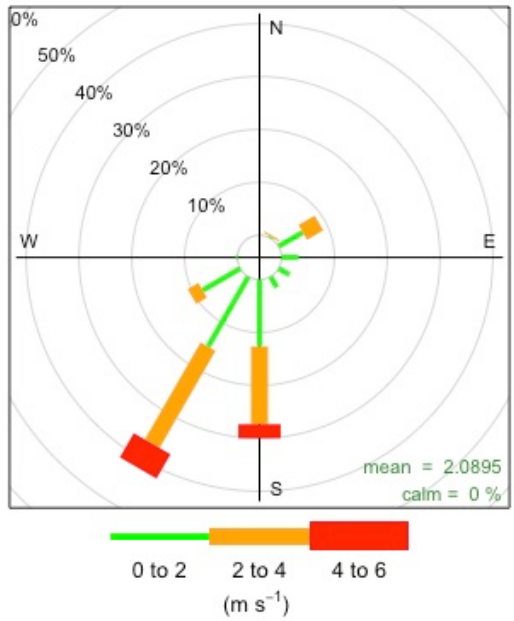

Figure S2: Windrose for BAQS for the measuring period

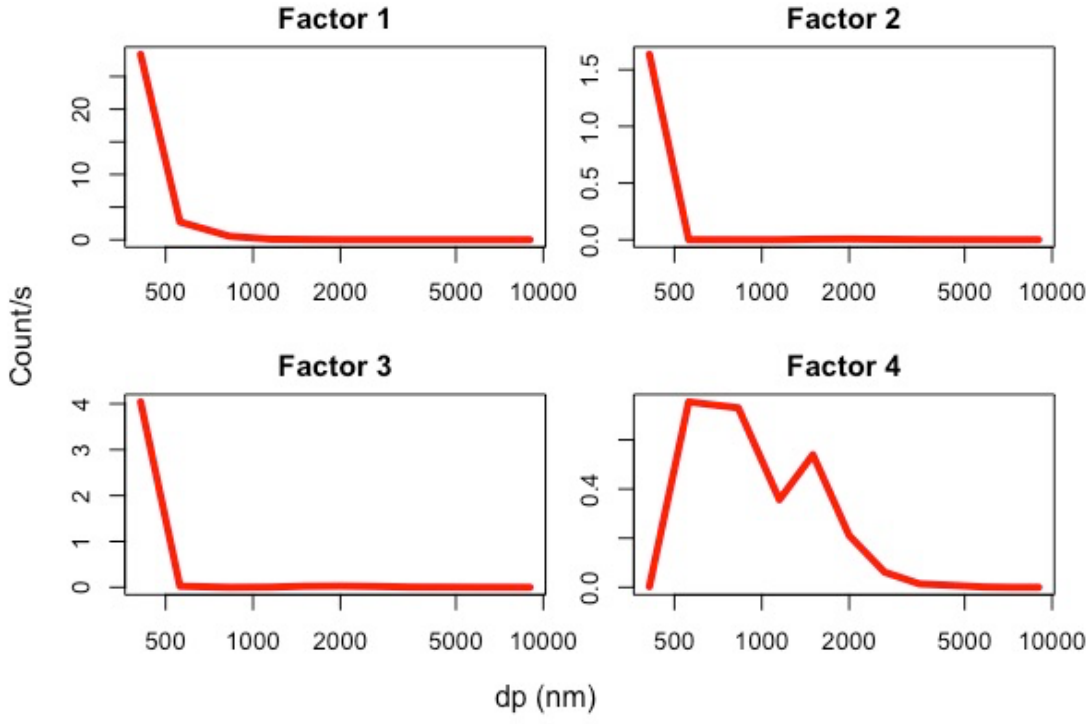

Figure S3: Particle profiles of the factors from the PMF analysis (including the smallest particle size bin available). The lines indicate the average particle count per second for each particle size bin.

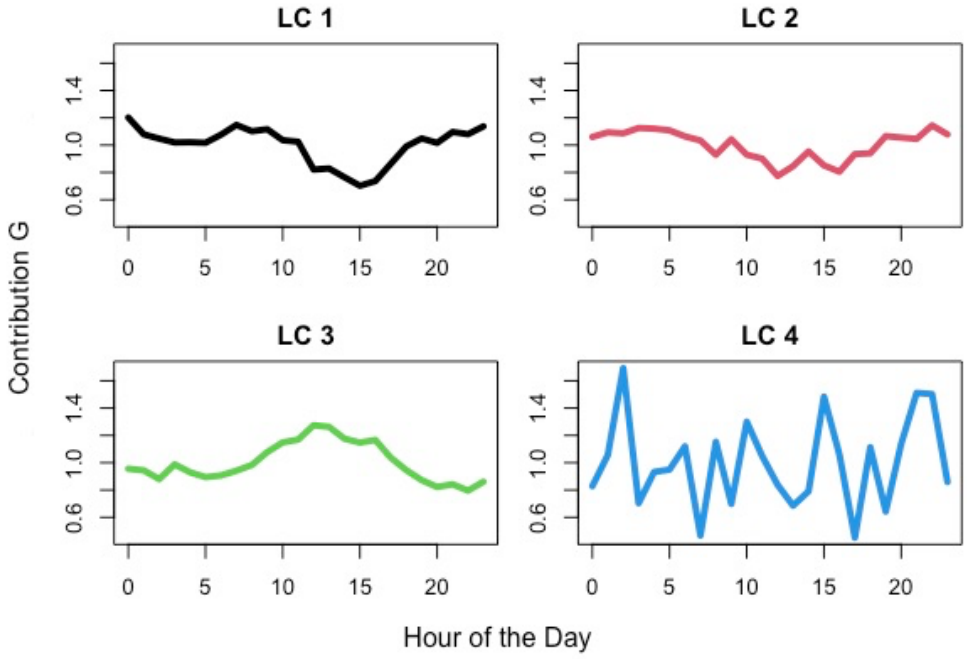

Figure S4: Diurnal variation of the contribution G of the factors from the LC analysis. Higher contributions indicate greater effect of the factor at the given time of the day.

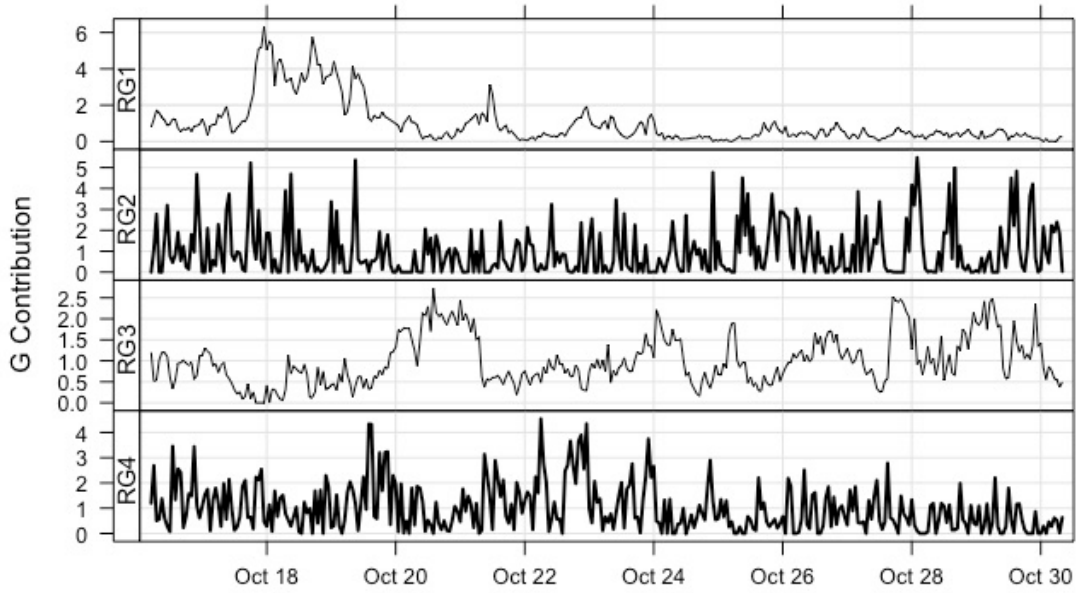

Figure S5: Temporal variation for RG

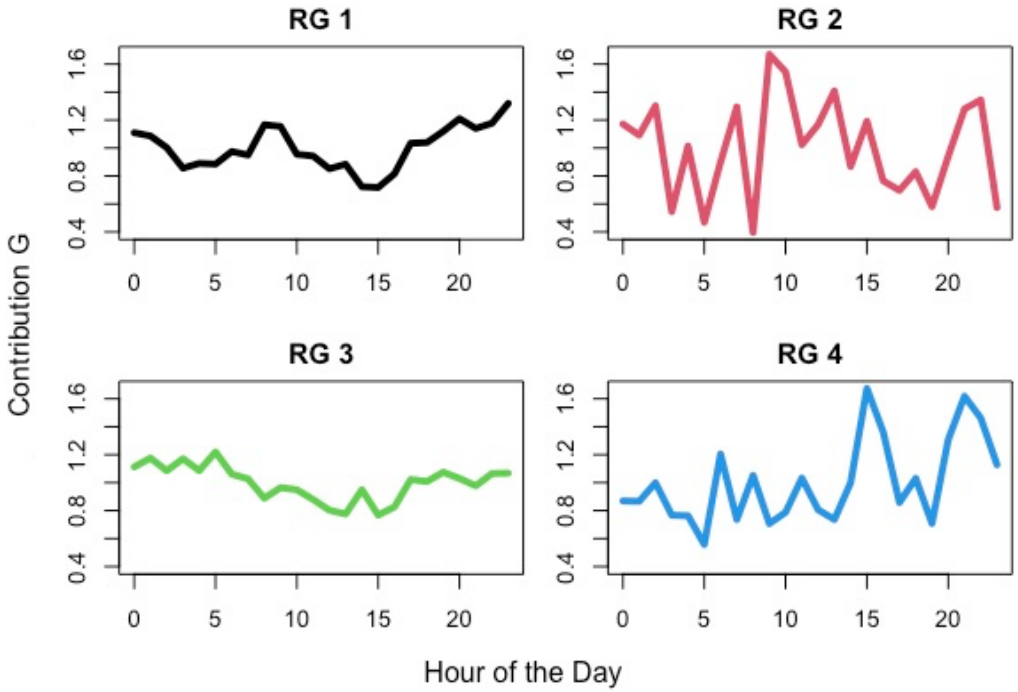

Figure S6: Diurnal variation of the contribution G of the factors from the RG analysis. Higher contributions indicate greater effect of the factor at the given time of the day.