

Supplementary Material

Pollution Status, Source Apportionment, and Environmental Risk Assessment of Trace Metals in Atmospheric Particulates of Islamabad, Pakistan

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Table S1. Optimum analytical conditions for the analysis of selected trace metals using air-acetylene flame (Shimadzu AA-670, Japan)

Metal	Wavelength (nm)	HCL current (mA)	Slit width (nm)	Fuel-gas flow rate (L/min.)	Limit of Detection (mg/L)
Cd	228.8	4.0	0.3	1.8	0.004
Cr	357.9	5.0	0.5	2.6	0.006
Ni	232.0	4.0	0.15	1.7	0.006
Pb	217.0	7.0	0.3	1.8	0.010
Mn	279.5	5.0	0.4	1.9	0.003
Cu	324.8	3.0	0.5	1.8	0.004
Co	240.7	6.0	0.2	2.2	0.005
Ag	328.1	4.0	0.6	2.2	0.003
Li	670.7	4.0	0.5	1.6	0.003
Sr	460.7	4.0	0.5	1.6	0.005
Ca	422.7	6.0	0.5	2.0	0.004
Mg	285.2	4.0	0.5	1.6	0.001
K	766.5	5.0	0.5	1.9	0.006
Zn	213.9	4.0	0.5	2.0	0.002
Fe	248.3	8.0	0.2	2.0	0.006

Table S2. Certified versus estimated concentrations ($\mu\text{g/g}$) of selected metals in the standard reference material (NIST SRM-2711)

Metal	Certified Level	Measured Level	Recovery (%)
Cd	41.7	40.98	98
Cr	47	47.56	101
Ni	20.6	21.1	102
Pb	1162	1180	102
Mn	638	655	103
Cu	114	114.9	101
Co	10	9.67	97
Ag	4.63	4.60	99
Li	-	-	-
Sr	245.3	239.1	97
Ca	28800	27985	97
Mg	10500	10265	98
K	24500	24100	98
Zn	350.4	341.1	97
Fe	28900	27800	96

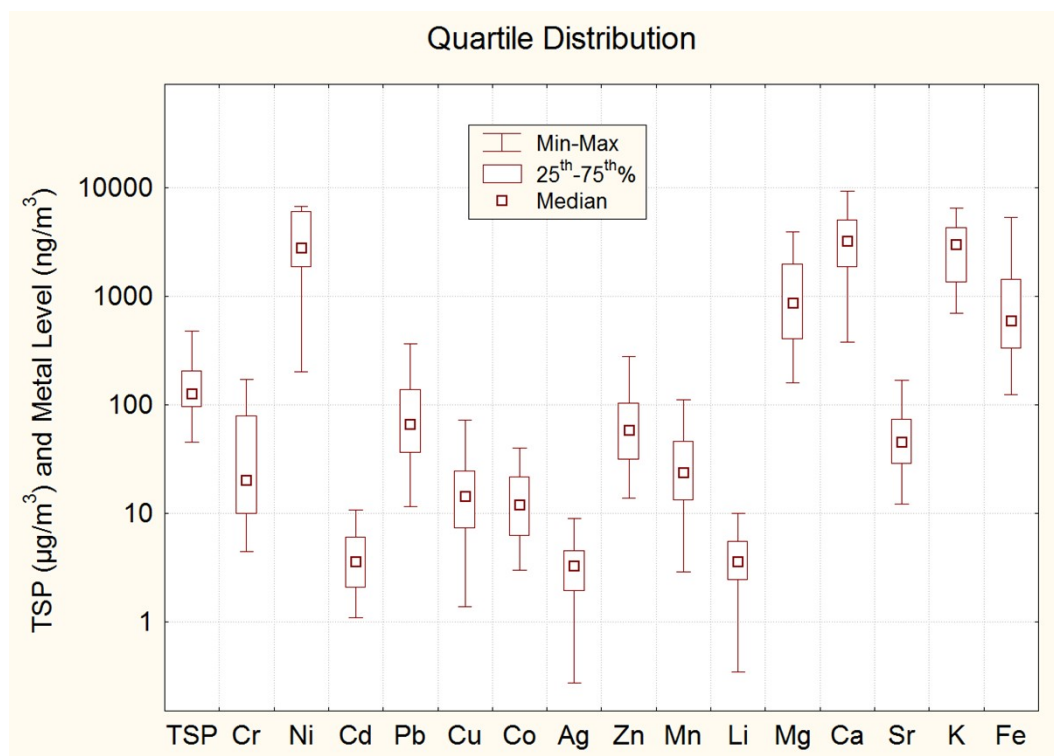


Figure S1. Quartile distribution of TSP ($\mu\text{g}/\text{m}^3$) and selected metal levels (ng/m^3) in the atmospheric particulates

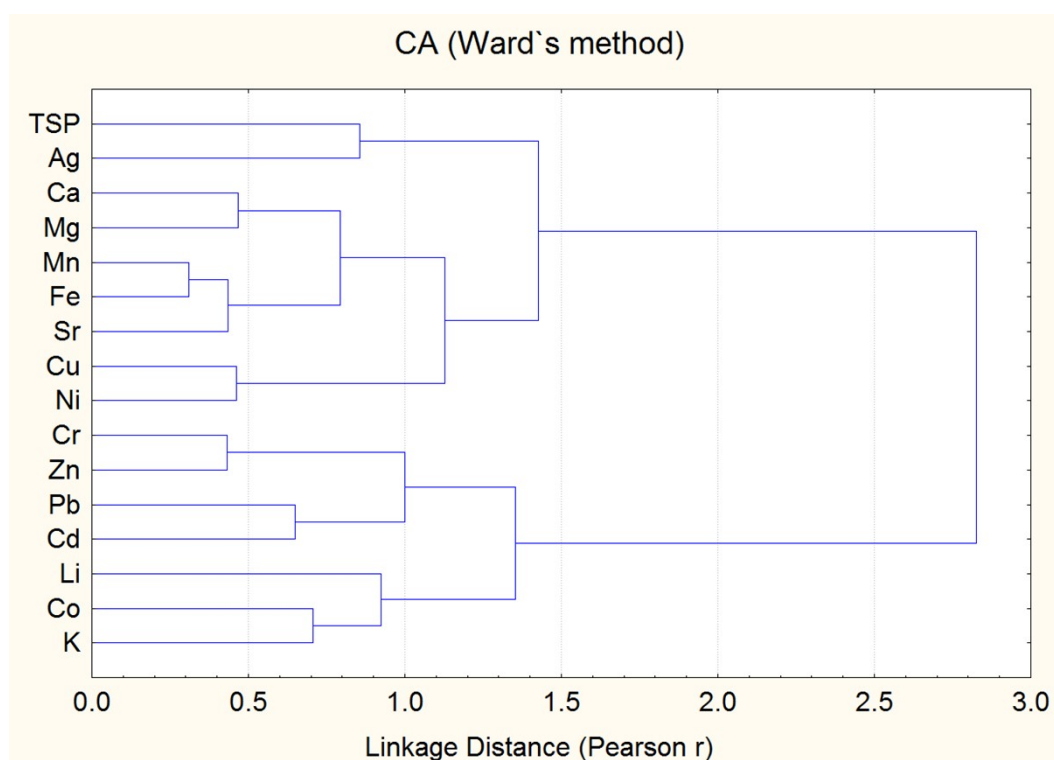


Figure S2. Cluster analysis of TSP and selected metal levels in the atmospheric particulates