Supplementary information

Long-term sensor measurements of lung deposited surface area of particulate matter emitted from local vehicular and residential wood combustion sources

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Table S1. Correlation factors of LDSA and BC during different seasons at different stations.

Station	SC		UB		DH1	
Factor	Slope	Intercept	Slope	Intercept	Slope	Intercept
Winter	16.3	4.5	11.8	2.7	8.5	4.5
Spring	13.0	8.4	14.0	4.3	7.6	6.7
Summer	11.8	9.8	13.1	6.3	12.0	8.3
Fall	14.4	5.3	14.6	2.6	8.4	5.5

Table S2. Seasonal LDSA levels and their differences to annual means (units in $\mu m^2\ cm^{-3}$).

Station	Winter	Spring	Summer	Fall	Annual (mean ± std)
SC	19.7 (-2.3)	20.7 (-1.3)	24.8 (+2.8)	20.8 (-1.2)	22 ± 14
UB	8.9 (-0.5)	8.6 (-0.8)	11.1 (+1.7)	9.3 (-0.1)	9.4 ± 6.9
DH1	10.6 (-1.4)	10.7 (-1.3)	13.9 (+1.9)	11.6 (-0.4)	12 ± 9.2
DH2	12.0 (±0)	12.0 (±0)	13.6 (+1.6)	11.6 (-0.4)	12 ± 11

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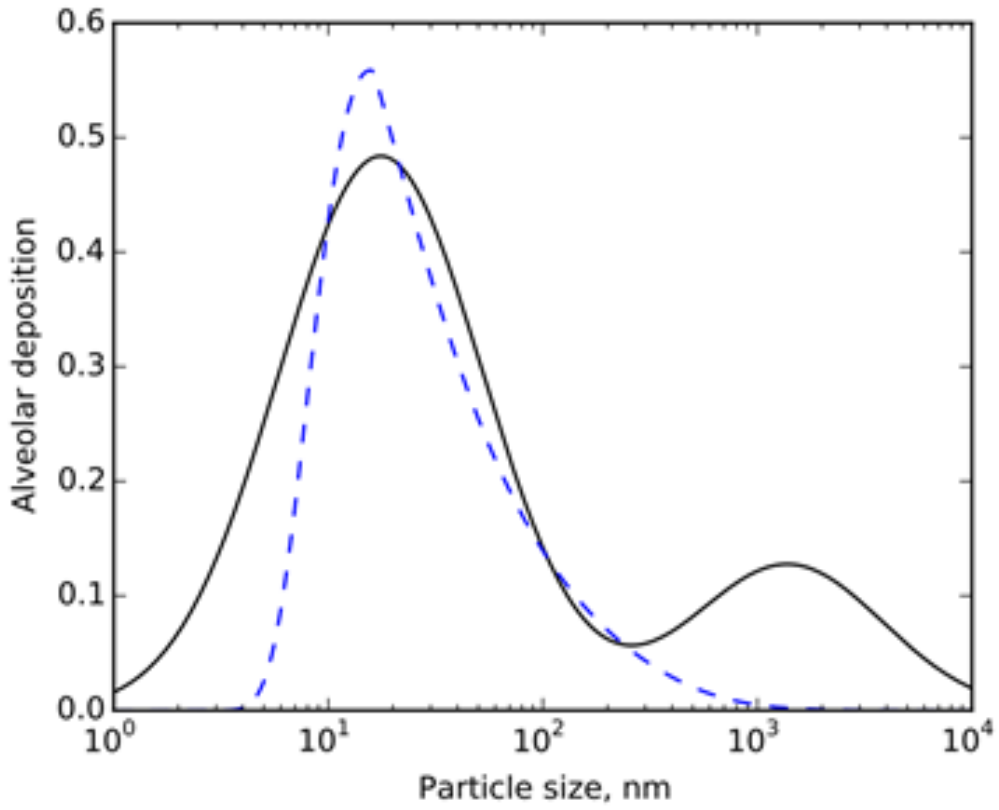
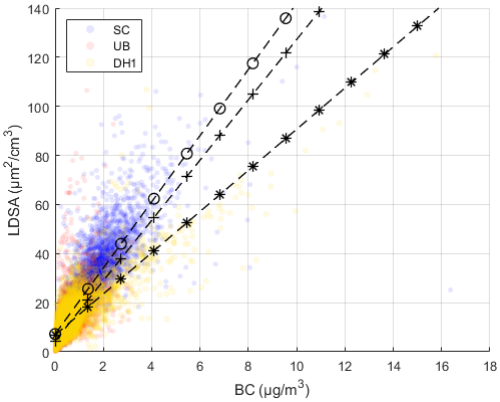
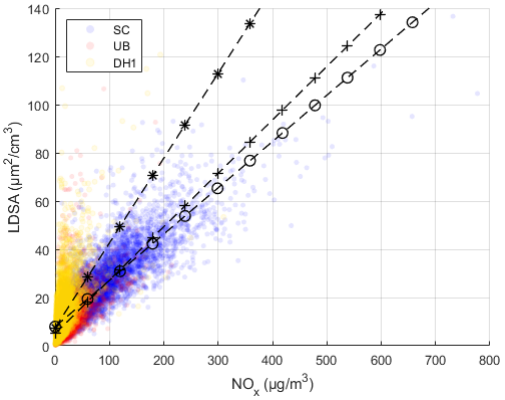


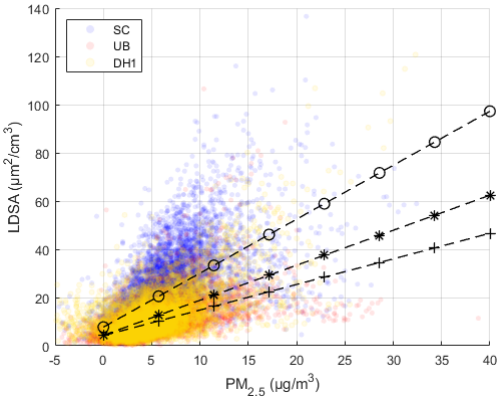
Fig. S1. Alveolar deposition fraction (solid line) and the Pegasor AQ Urban response curve (dashed line) as a function of particle size.



a)

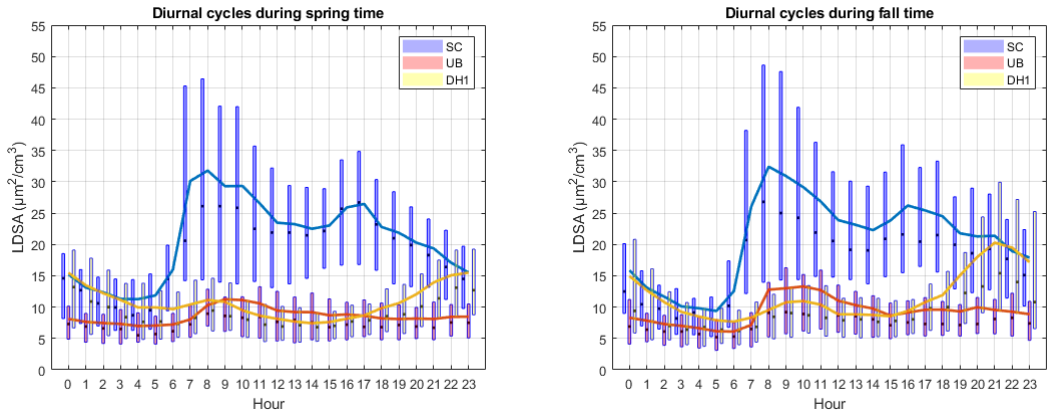


b)



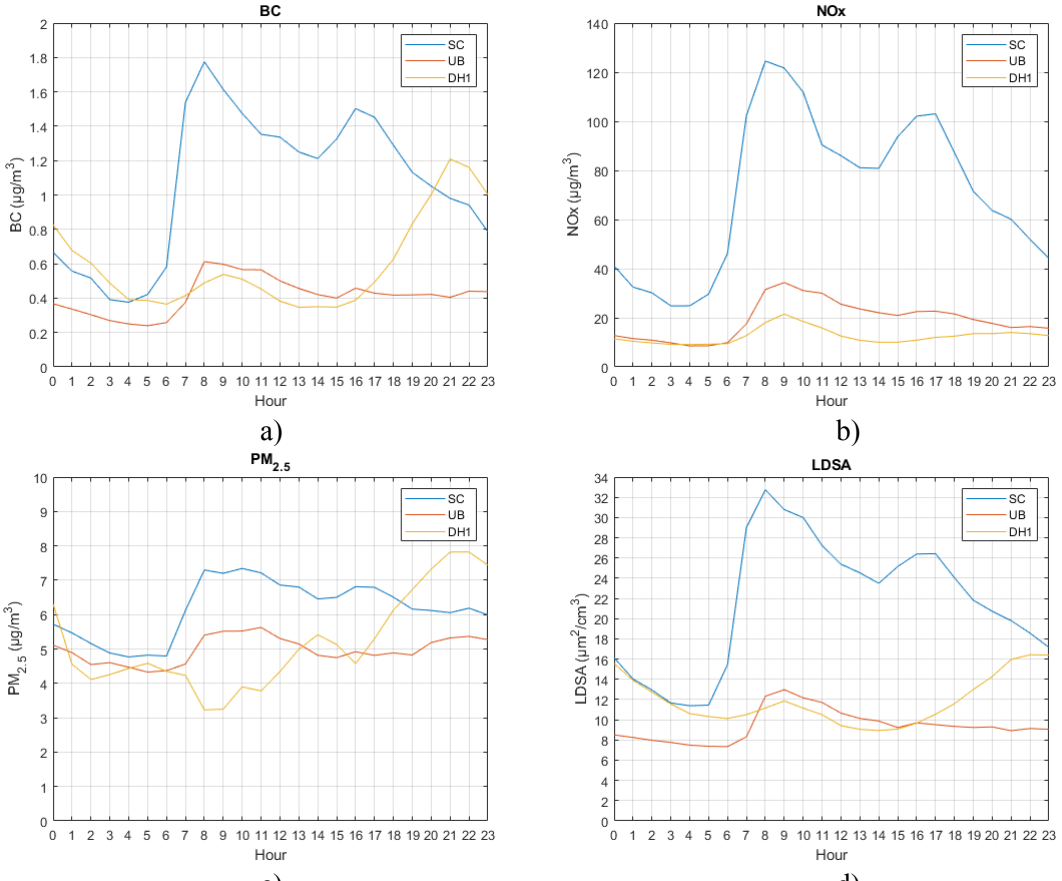
c)

Figure S2. Scatter plots of LDSA and BC (a), NO_X (b) and $PM_{2.5}$ (c) at different sites. For the linear fits, O-marker stands for SC station, +-marker for UB stations, and *-marker for DH1 station.



a) b)

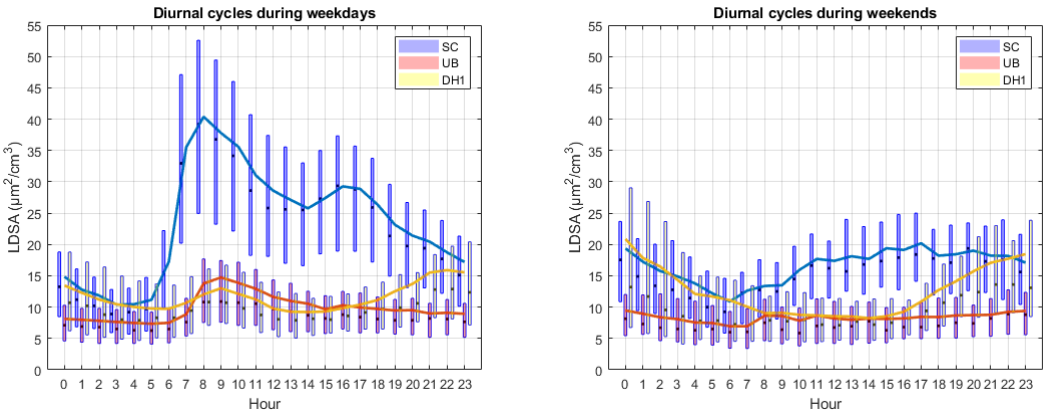
Figure S3. Diurnal cycles at different sites during spring (a) and fall (b). Solid continuous lines represent mean values, boxes 25th and 75th percentiles and the line inside the quantile boxes median values. Both weekday and weekend data is included.



a) b)

c) d)

Fig. S4. Mean diurnal cycles of BC (a), NO_X (b), $PM_{2.5}$ (c), and LDSA (d). All season combined and both weekday and weekend data is included.



a) b)

Figure S5. Diurnal cycles during weekdays (a) and weekends (b). Solid continuous lines represent mean values, boxes 25th and 75th percentiles and the line inside the quantile boxes median values. All seasons combined.

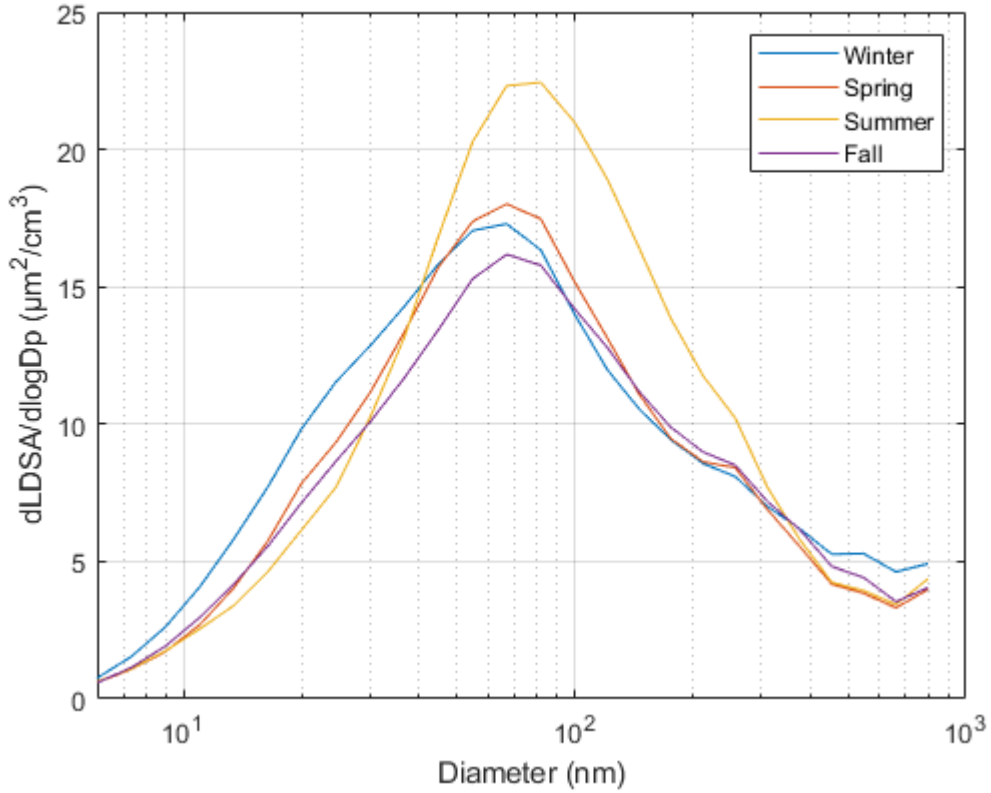
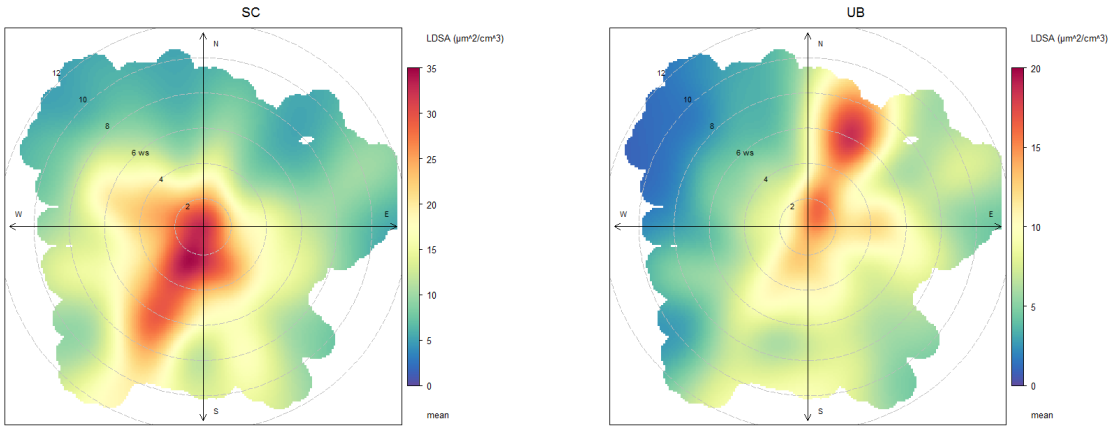


Figure S6. Seasonal changes in LDSA size distribution at the SC station.



a) b)

Fig S7. Pollution roses of LDSA measured at the SC (a) and UB (b) stations.

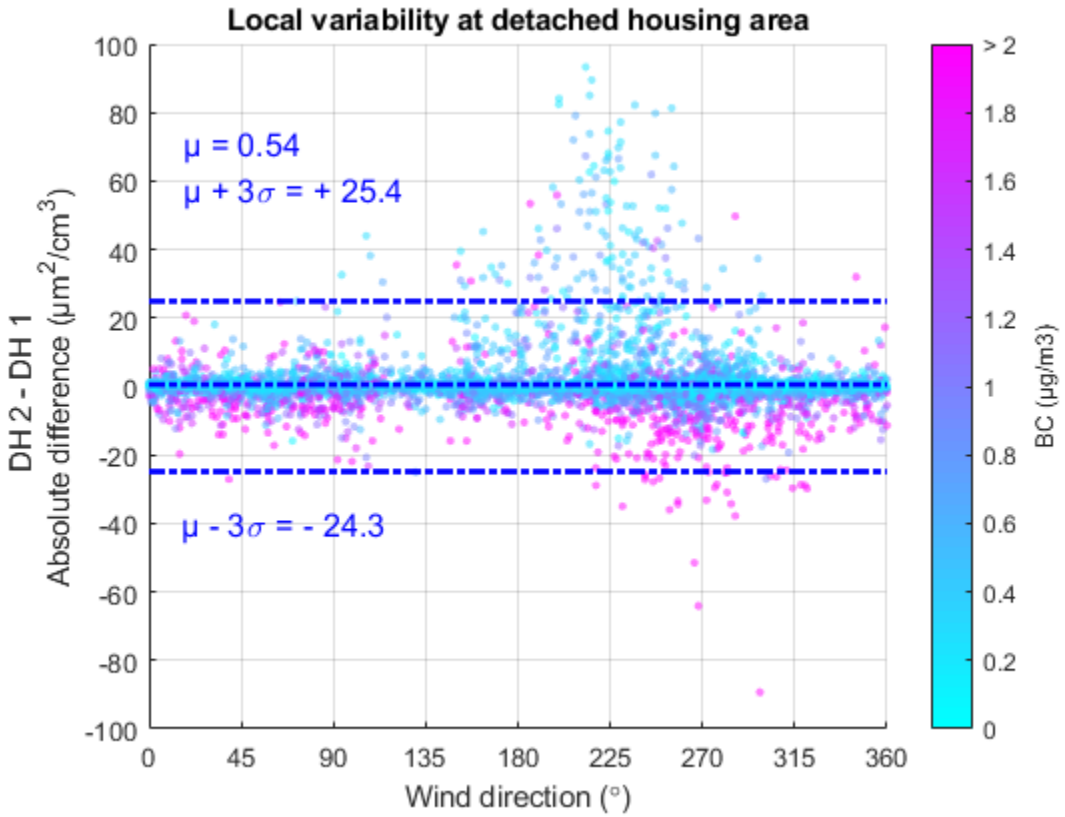
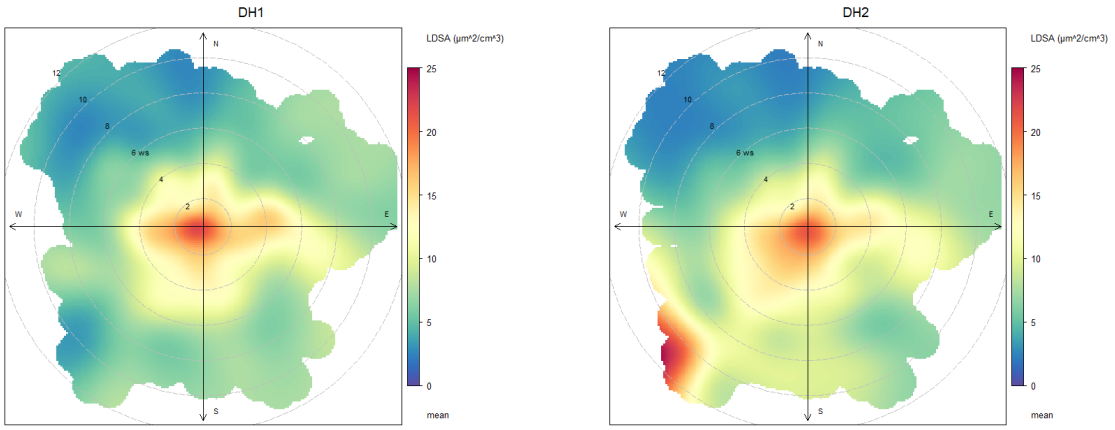


Fig S8. Differences of measured LDSA values at DH1 and DH2 stations as a function of wind direction and DH1 BC concentration.



a) b)

Fig S9. Pollution roses of LDSA measured at the DH1 (a) and DH2 (b) stations.