

Supplementary material

**Dominant factors influencing the concentrations of particulate matters inside train carriages traveling in different environments in the Taipei Mass Rapid Transit system**

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**Table S1** Mean, standard deviation, minimum, and maximum values for temperature, relative humidity, CO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and PN inside metro train carriages at different MRT lines

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>	<b>BL</b>
<b>T, °C</b>							
Mean	25.1	26.2	25.7	25.4	25.5	25.7	25.4
S.D.	1.6	1.5	1.5	0.8	0.7	1.1	0.7
Min	22.8	24.7	23.9	24.5	24.6	24.4	24.7
Max	27.7	29.9	29.1	26.7	26.9	27.3	26.8
<b>RH, %</b>							
Mean	62.7	61.9	64.0	71.9	70.5	68.8	68.8
S.D.	6.2	7.4	8.6	3.8	5.5	4.6	4.1
Min	52.6	48.6	46.9	66.8	61.0	62.0	61.1
Max	72.3	76.0	77.8	77.1	77.5	76.1	74.4
<b>CO<sub>2</sub>, ppm</b>							
Mean	907	1118	1191	903	809	1053	1104
S.D.	199	170	320	147	114	259	363
Min	680	801	707	712	668	713	770
Max	1326	1408	1680	1223	1038	1434	1751
<b>PM<sub>10</sub>, µg m<sup>-3</sup></b>							
Mean	15.6	10.9	53.1	75.5	88.3	100.9	54.2
S.D.	7.6	3.9	9.5	20.6	21.0	26.2	10.4
Min	6.6	2.9	39.4	49.1	48.7	42.3	32.3
Max	30.0	16.7	73.3	114.8	129.0	134.5	69.7
<b>PM<sub>2.5</sub>, µg m<sup>-3</sup></b>							
Mean	14.6	8.4	45.8	66.7	76.1	85.2	48.8
S.D.	7.5	3.4	8.6	16.7	16.1	20.5	9.7
Min	5.7	1.5	32.1	44.7	44.8	39.4	29.5
Max	28.9	14.6	63.1	97.4	106.0	112.4	61.9
<b>PN, particles cm<sup>-3</sup></b>							
Mean	16824	17452	9984	8677	12270	12022	9850
S.D.	3761	5084	2902	864	2050	1179	1560
Min	12873	12574	6571	7865	9386	10561	7335
Max	22906	28001	14951	10330	15596	14043	12639

**Table S2** p-values for the independent-samples *t*-test (two-tail)**Temperature**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.075					
<b>R (UG)</b>	0.309	0.408				
<b>G</b>	0.526	0.120	0.549			
<b>O (A)</b>	0.364	0.164	0.709	0.714		
<b>O (B)</b>	0.281	0.338	0.966	0.516	0.696	
<b>BL</b>	0.463	0.117	0.575	0.917	0.764	0.539

**Relative Humidity**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.764					
<b>R (UG)</b>	0.679	0.520				
<b>G</b>	0.000	0.001	0.011			
<b>O (A)</b>	0.005	0.005	0.043	0.474		
<b>O (B)</b>	0.016	0.014	0.112	0.113	0.461	
<b>BL</b>	0.013	0.012	0.103	0.096	0.451	0.987

**CO<sub>2</sub>**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.011					
<b>R (UG)</b>	0.018	0.497				
<b>G</b>	0.963	0.005	0.014			
<b>O (A)</b>	0.161	0.000	0.002	0.122		
<b>O (B)</b>	0.163	0.504	0.277	0.135	0.018	
<b>BL</b>	0.148	0.911	0.563	0.131	0.032	0.722

**PM<sub>10</sub>**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.075					
<b>R (UG)</b>	0.000	0.000				
<b>G</b>	0.000	0.000	0.012			
<b>O (A)</b>	0.000	0.000	0.000	0.188		
<b>O (B)</b>	0.000	0.000	0.000	0.030	0.245	
<b>BL</b>	0.000	0.000	0.796	0.016	0.000	0.000

**PM<sub>2.5</sub>**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.020					
<b>R (UG)</b>	0.000	0.000				
<b>G</b>	0.000	0.000	0.006			
<b>O (A)</b>	0.000	0.000	0.000	0.220		
<b>O (B)</b>	0.000	0.000	0.000	0.044	0.274	
<b>BL</b>	0.000	0.000	0.445	0.015	0.000	0.000

**PN**

<b>Route</b>	<b>BR</b>	<b>R (G)</b>	<b>R (UG)</b>	<b>G</b>	<b>O (A)</b>	<b>O (B)</b>
<b>R (G)</b>	0.734					
<b>R (UG)</b>	0.000	0.000				
<b>G</b>	0.000	0.000	0.162			
<b>O (A)</b>	0.002	0.005	0.040	0.000		
<b>O (B)</b>	0.001	0.004	0.042	0.000	0.736	
<b>BL</b>	0.000	0.000	0.892	0.056	0.007	0.003

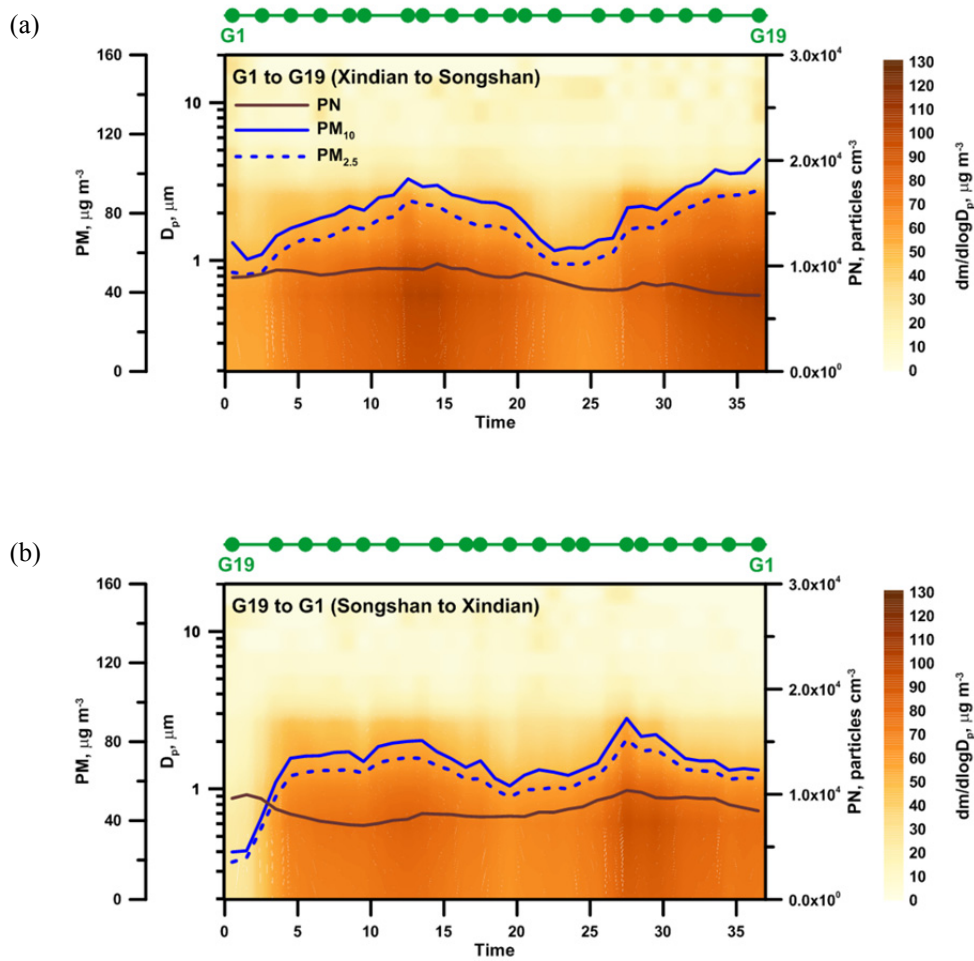


Fig. S1 Variation trends of  $PM_{10}$ ,  $PM_{2.5}$ , and PN concentrations and particle mass size distributions inside metro train carriages on G from (a) G01 to G19 and (b) G19 to G01.

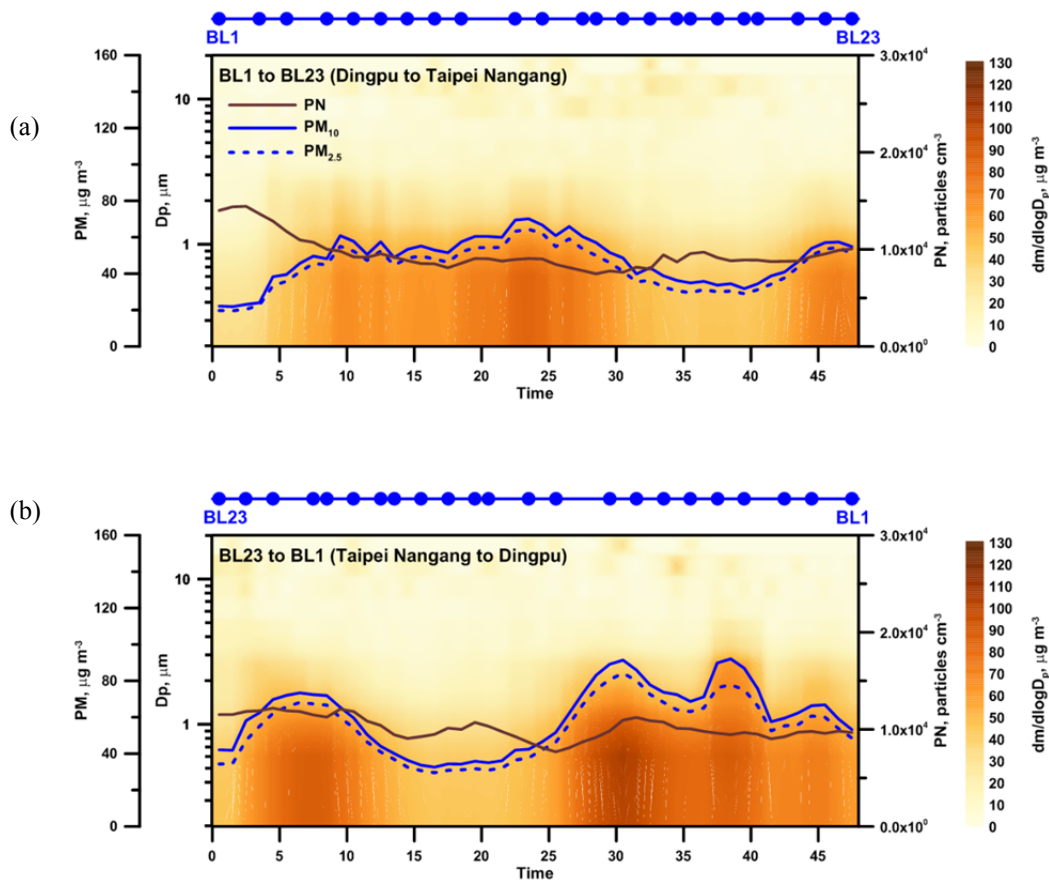


Fig. S2 Variation trends of  $PM_{10}$ ,  $PM_{2.5}$ , and PN concentrations and particle mass size distributions inside metro train carriages on BL from (a) BL01 to BL23 and (b) BL23 to BL01.