

**Supporting Information**

**for**

**Time-dependent Size-Resolved Bacterial and Fungal Aerosols in Beijing Subway**

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Submitted to

Aerosol and Air Quality Research

**Table S1** Temperature and humidity data with 3 hours time resolution in Beijing collected from Historical Weather Data of Beijing(WMO ID 54511) :

For Weekday

Site	Date	Time	Temperature(°C)	Humidity(%)
Beida	April 17, 2015, Thursday	5:30-6:30	11.9	76
		7:30-8:30	11.9	88
		12:00-13:00	12.0	79
		17:30-18:30	16.8	69
		22:00-23:00	14.6	72
Xizhi-a	May 16, 2015, Friday	5:30-6:30	16.2	52
		7:30-8:30	19.8	41
		12:00-13:00	24.6	29
		17:30-18:30	27.2	24
		22:00-23:00	22.1	30
Xizhi-b	May 23, 2015, Friday	5:30-6:30	23.2	52
		7:30-8:30	26.1	47
		12:00-13:00	31.5	36
		17:30-18:30	31.6	31
		22:00-23:00	27.2	43
Xidan	April 15, 2015, Tuesday	5:30-6:30	16.4	64
		7:30-8:30	18.2	63
		12:00-13:00	21.8	51
		17:30-18:30	17.7	25
		22:00-23:00	14.9	33

For Weekend:

Site	Date	Time	Temperature(°C)	Humidity(%)
Beida	May 18, 2015, Sunday	5:30-6:30	15.5	61
		7:30-8:30	21.2	23
		12:00-13:00	26.0	34
		17:30-18:30	29.3	34
		22:00-23:00	24.5	46
Xizhi-a	May 11, 2015, Sunday	5:30-6:30	10.6	92
		7:30-8:30	11.3	94
		12:00-13:00	11.2	91
		17:30-18:30	14.1	66
		22:00-23:00	12.1	87
Xizhi-b	May 24, 2015, Saturday	5:30-6:30	20.0	90
		7:30-8:30	19.4	93
		12:00-13:00	20.0	94
		17:30-18:30	21.7	84
		22:00-23:00	20.1	88
Xidan	May 17, 2015, Saturday	5:30-6:30	16.2	52
		7:30-8:30	19.8	41
		12:00-13:00	24.6	29
		17:30-18:30	27.2	24
		22:00-23:00	22.1	30

**Table S2.** Relative abundances of top twenty most abundant bacterial genera identified in each monitoring station

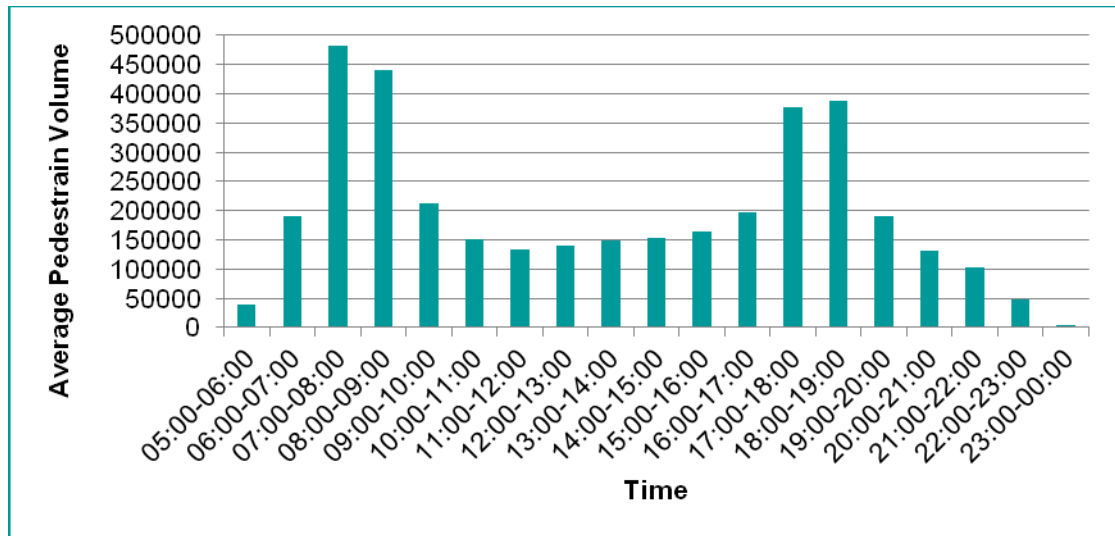
Beida		Xizhi-a		Xizhi-b		Xidan		Outside	
Top 20 genera	RA(%)	Top 20 genera	RA(%)	Top 20 genera	RA(%)	Top 20 genera	RA(%)	Top 20 genera	RA(%)
Staphylococcus	31.28	Staphylococcus	66.69	Staphylococcus	84.67	Vagococcus	61.22	Bacillus	23.29
Acinetobacter	30.33	Pseudomonas	9.38	Micrococcus	4.71	Staphylococcus	27.63	Staphylococcus	18.17
Bacillus	15.75	Bacillus	6.34	Bacillus	2.46	Bacillus	6.01	Pantoea	17.14
Exiguobacterium	10.10	Micrococcus	5.93	Corynebacterium	1.97	Micrococcus	1.88	Lactococcus	14.47
Micrococcus	4.03	Exiguobacterium	4.29	Lysinibacillus	1.64	Macrococcus	0.83	Acinetobacter	14.38
Enterococcus	3.51	Enterococcus	1.15	Exiguobacterium	1.34	Corynebacterium	0.52	Enterococcus	2.55
Aerococcus	2.20	Corynebacterium	0.92	Enterobacteriaceae	0.58	Aerococcus	0.23	Achromobacter	2.42
Pantoea	0.63	Acinetobacter	0.83	Sphingobacterium	0.44	Paenibacillus	0.21	Psychrobacter	1.66
Psychrobacter	0.32	Macrococcus	0.74	Aerococcus	0.29	Pantoea	0.19	Aerococcus	1.10
Sporosarcina	0.22	Pantoea	0.69	Sporosarcina	0.26	Exiguobacterium	0.17	Lysinibacillus	1.07
Corynebacterium	0.20	Microbacterium	0.45	Rhodococcus	0.18	Chryseobacterium	0.17	Exiguobacterium	1.02
Macrococcus	0.20	Stenotrophomonas	0.45	Macrococcus	0.15	Kocuria	0.13	Micrococcus	0.71
Enhydrobacter	0.18	Brachybacterium	0.26	Vagococcus	0.15	Synechococcus	0.13	Corynebacterium	0.58
Microbacterium	0.18	Aerococcus	0.25	Pseudomonas	0.14	Brevundimonas	0.10	Kocuria	0.35
Lysinibacillus	0.16	Chryseobacterium	0.23	Kocuria	0.14	Streptococcus	0.10	Microbacterium	0.26
				Microbacterium	0.11			Rothia	0.20
Luteococcus	0.12	Kocuria	0.20			Lactococcus	0.08		
Kocuria	0.10	Planomicrobium	0.20	Rothia	0.11	Enterococcus	0.08	Pseudomonas	0.18

Synechococcus	0.10	Rothia	0.19	Lactococcus	0.09	Microbacterium	0.06	Planococcus	0.15
Lactococcus	0.08	Synechococcus	0.18	Brachybacterium	0.08	Acinetobacter	0.06	Arthrobacter	0.07
Hydrogenophaga	0.06	Pseudoclavibacter	0.09	Brevibacterium	0.08	Lysinibacillus	0.04	Planomicrobium	0.07

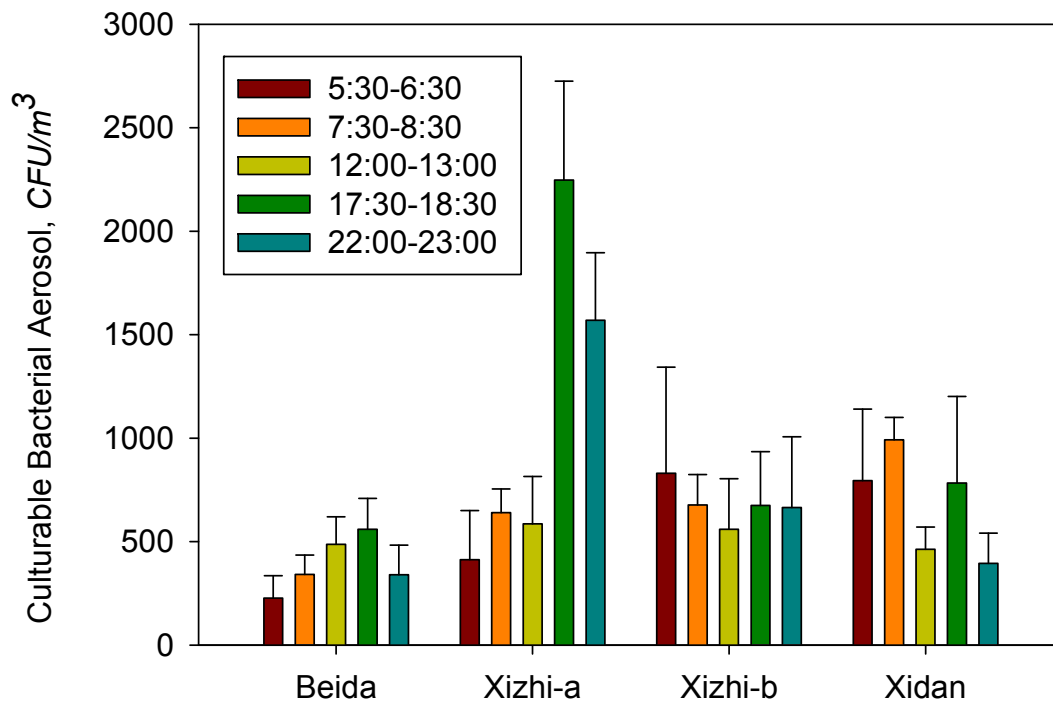
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**Table S3** Biodiversity analysis on bacterial community was according to the results of 16S rRNA gene sequencing. The sample coverages of the OTU-based alpha diversity analysis were all above 97%.

<b>Biodiversity Statistics</b>	<b>Beida</b>	<b>Xizhi-a</b>	<b>izhi-b</b>	<b>Xidan</b>	<b>Outside</b>
Reads	4958	6847	6544	5204	6080
OTU	61	72	66	59	63
Ace	75 (66,99)	76 (73,87)	73 (68,88)	66 (61,81)	73 (66,93)
Chao	76 (65,112)	84 (75,126)	71 (67,88)	67 (61,90)	72 (65,100)
Coverage	0.996975	0.998686	0.998472	0.997886	0.998191
Shannon	2.51 (2.48,2.55)	2.6 (2.57,2.64)	2.25 (2.22,2.29)	1.63 (1.59,1.68)	2.63 (2.6,2.66)
Simpson	0.1314 (0.1258,0.137)	0.142 (0.1365,0.1476)	0.2015 (0.1946,0.2083)	0.4006 (0.3861,0.4151)	0.1088 (0.1057,0.1118)

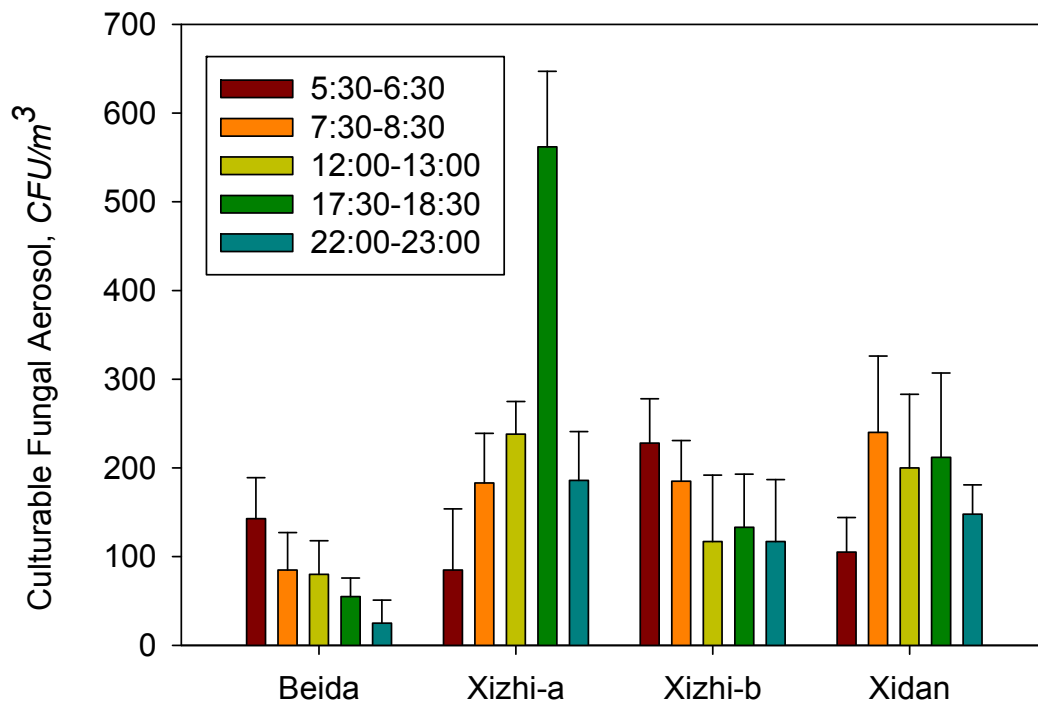


**Fig. S1.** Average volume of riders of Beijing subway system (from Beijing Railway Corporation).



**Fig. S2.** Concentrations of culturable bacterial aerosols at different time periods on weekends (Beida on May 18, 2015, Sunday; Xizhi-a on May 11, 2015, Sunday; Xizhi-b on May 24, 2015 Saturday; Xidan on May 17, 2015 Saturday).





**Fig. S3.** Concentrations of culturable fungal aerosols at different time periods on weekends (Beida on May 18, 2015, Sunday, Xizhi-a on May 11, 2015, Sunday; Xizhi-b on May 24, 2015 Saturday; Xidan on May 17, 2015 Saturday).