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Development of a vehicle emission inventory with high temporal–spatial resolution based on NRT traffic data and its impact on air pollution in Beijing – Part 2: Impact of vehicle emission on urban air quality

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Table 1 Performance statistics of near surface meteorological parameters.

	IOA	R	STD _O	STD _F	RMSE	MB	ME
T ₂ ^a	0.85	0.81	4.0 K	4.9 K	3.4 K	1.9 K	2.7 K
Q ₂ ^a	0.75	0.56	2.5 g kg ⁻¹	2.7 g kg ⁻¹	2.4 g kg ⁻¹	0.1 g kg ⁻¹	1.9 g kg ⁻¹
WS ₁₀ ^a	0.61	0.37	1.1 m s ⁻¹	1.3 m s ⁻¹	1.4 m s ⁻¹	0.5 m s ⁻¹	1.1 m s ⁻¹
T ₂ ^b	0.89	0.87	5.7 K	6.0 K	3.8 K	-2.4 K	3.1 K
Q ₂ ^b	0.61	0.82	0.5 g kg ⁻¹	0.6 g kg ⁻¹	0.9 g kg ⁻¹	0.8 g kg ⁻¹	0.8 g kg ⁻¹
WS ₁₀ ^b	0.73	0.57	1.7 m s ⁻¹	1.8 m s ⁻¹	1.7 m s ⁻¹	0.6 m s ⁻¹	1.3 m s ⁻¹

^a and ^b represent July and December.

Table 2 Performance statistics of hourly NO₂ and PM_{2.5} concentrations in July.

	IOA	R	STD _O	STD _F	RMSE	MB	ME
NO ₂ ^a	0.56	0.28	25.2 µg m ⁻³	22.4 µg m ⁻³	31.4 µg m ⁻³	-12.9 µg m ⁻³	23.4 µg m ⁻³
PM _{2.5} ^a	0.70	0.63	40.7 µg m ⁻³	32.9 µg m ⁻³	43.4 µg m ⁻³	-28.6 µg m ⁻³	32.7 µg m ⁻³
NO ₂ ^b	0.54	0.24	25.2 µg m ⁻³	26.1 µg m ⁻³	31.9 µg m ⁻³	-3.1 µg m ⁻³	23.9 µg m ⁻³
PM _{2.5} ^b	0.73	0.63	40.7 µg m ⁻³	34.5 µg m ⁻³	41.1 µg m ⁻³	-24.5 µg m ⁻³	30.4 µg m ⁻³

^a and ^b represent SIM1 and SIM2.

Table 3 Performance statistics of hourly NO₂ and PM_{2.5} concentrations in December.

	IOA	R	STD _O	STD _F	RMSE	MB	ME
NO ₂ ^a	0.62	0.38	49.3 µg m ⁻³	40.1 µg m ⁻³	51.2 µg m ⁻³	-5.8 µg m ⁻³	37.1 µg m ⁻³
PM _{2.5} ^a	0.68	0.56	100.1 µg m ⁻³	95.1 µg m ⁻³	87.8 µg m ⁻³	-28.7 µg m ⁻³	55.3 µg m ⁻³
NO ₂ ^b	0.62	0.38	49.3 µg m ⁻³	40.9 µg m ⁻³	51.0 µg m ⁻³	-7.8 µg m ⁻³	37.1 µg m ⁻³
PM _{2.5} ^b	0.68	0.56	100.1 µg m ⁻³	95.8 µg m ⁻³	87.5 µg m ⁻³	-28.6 µg m ⁻³	54.1 µg m ⁻³

^a and ^b represent SIM1 and SIM2.