Supplement Information

Journal: Atmospheric Chemistry and Physics

Title: Rapid assessment of drivers and air quality effects of regional daily changes in air pollutant emissions based on near-real-time techniques: A case in Jiangsu Province, China

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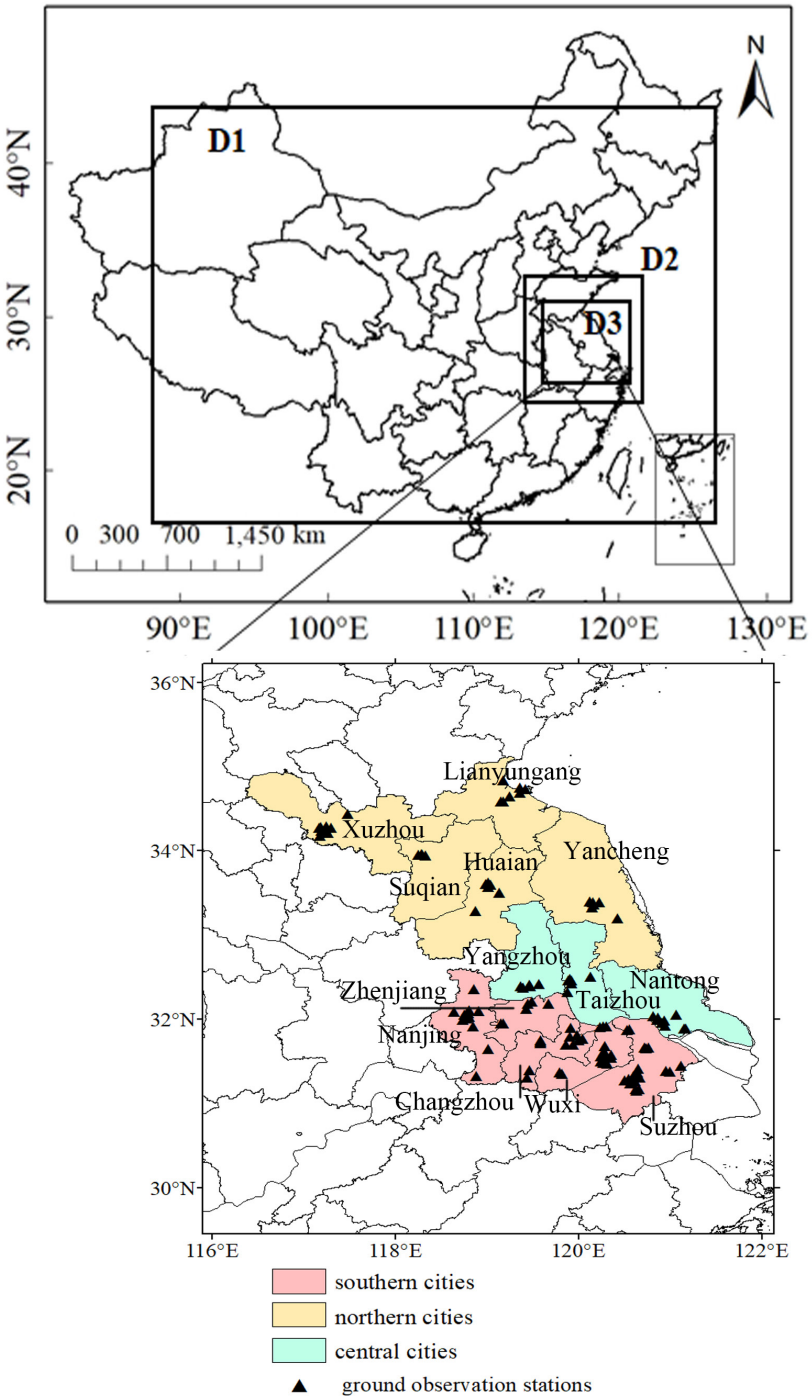
Meteorological parameters	Evaluation metrics	Jan	Apr	Jul	Oct	Criterion
WS10	OBS (m/s)	2.84	3.10	2.85	2.55	
	SIM (m/s)	3.53	3.48	3.33	3.13	
	Bias (m/s)	0.51	0.27	0.33	0.45	≤±0.5
	RMSE (m/s)	2.25	2.11	1.82	2.2	≤2.0
	IOA	0.71	0.71	0.73	0.68	≥0.6
T2	OBS (℃)	3.18	17.89	28.84	17.60	
	SIM (℃)	3.92	17.35	28.57	17.73	
	Bias (℃)	0.53	-0.22	-0.35	-0.17	≤±0.5
	RMSE (℃)	1.96	0.99	0.87	1.03	≤2.0
	IOA	0.95	0.98	0.99	0.94	≥0.8
RH2	OBS (%)	73.09	68.08	78.00	64.65	
	SIM (%)	67.42	62.01	71.31	56.47	
	Bias (%)	-4.01	-6.06	-6.88	-7.43	
	RMSE (%)	12.27	16.85	15.22	16.28	
	IOA	0.97	0.99	0.97	0.92	≥0.7

Table S2 Comparison of the observed and simulated concentrations of specific air pollutants for selected months in Jiangsu. In total, 110 state-operated observation sites were included in the comparison.

Species	Period	Observation ($\mu g/m^3$)	Simulation ($\mu g/m^3$)	R^2		NMB (%)		NME (%)	
			This work	This work	MEIC	This work	MEIC	This work	MEIC
SO_2	2022/1	11.9	14.6	0.49	0.41	23.0	24.1	53.5	49.0
	2022/4	16.1	14.4	0.44	0.32	-26.7	-30.4	33.7	45.6
	2022/7	10.7	11.1	0.44	0.36	24.1	25.5	38.6	40.9
	2022/10	16.7	14.1	0.57	0.43	-37.1	-33.4	51.2	51.8
NO_2	2022/1	78.0	71.1	0.59	0.55	-2.5	-16.1	15.9	24.3
	2022/4	59.0	61.5	0.37	0.30	21.3	30.0	36.2	55.1
	2022/7	45.7	54.5	0.45	0.38	27.0	35.6	25.8	22.3
	2022/10	72.1	60.1	0.47	0.44	-20.2	-19.9	26.2	31.7
$PM_{2.5}$	2022/1	108.1	108.9	0.58	0.47	10.8	14	33.2	37.5
	2022/4	61.8	56.7	0.38	0.29	-18.6	21.7	39.2	55.3
	2022/7	40.8	39.7	0.39	0.25	-3.2	25.2	48.1	62.5
	2022/10	41.5	31.7	0.49	0.38	-1.91	-8.58	42.6	51.3
O_3	2022/1	79.2	66.9	0.66	0.30	-23.1	-39.1	49.3	51.4
	2022/4	203.2	159.3	0.46	0.26	-41.2	-30.6	41.1	54.0
	2022/7	158.8	130.4	0.62	0.56	-24.2	-28.1	32.7	44.3
	2022/10	128.8	102.3	0.52	0.32	-30.5	-39.9	44.6	54.5



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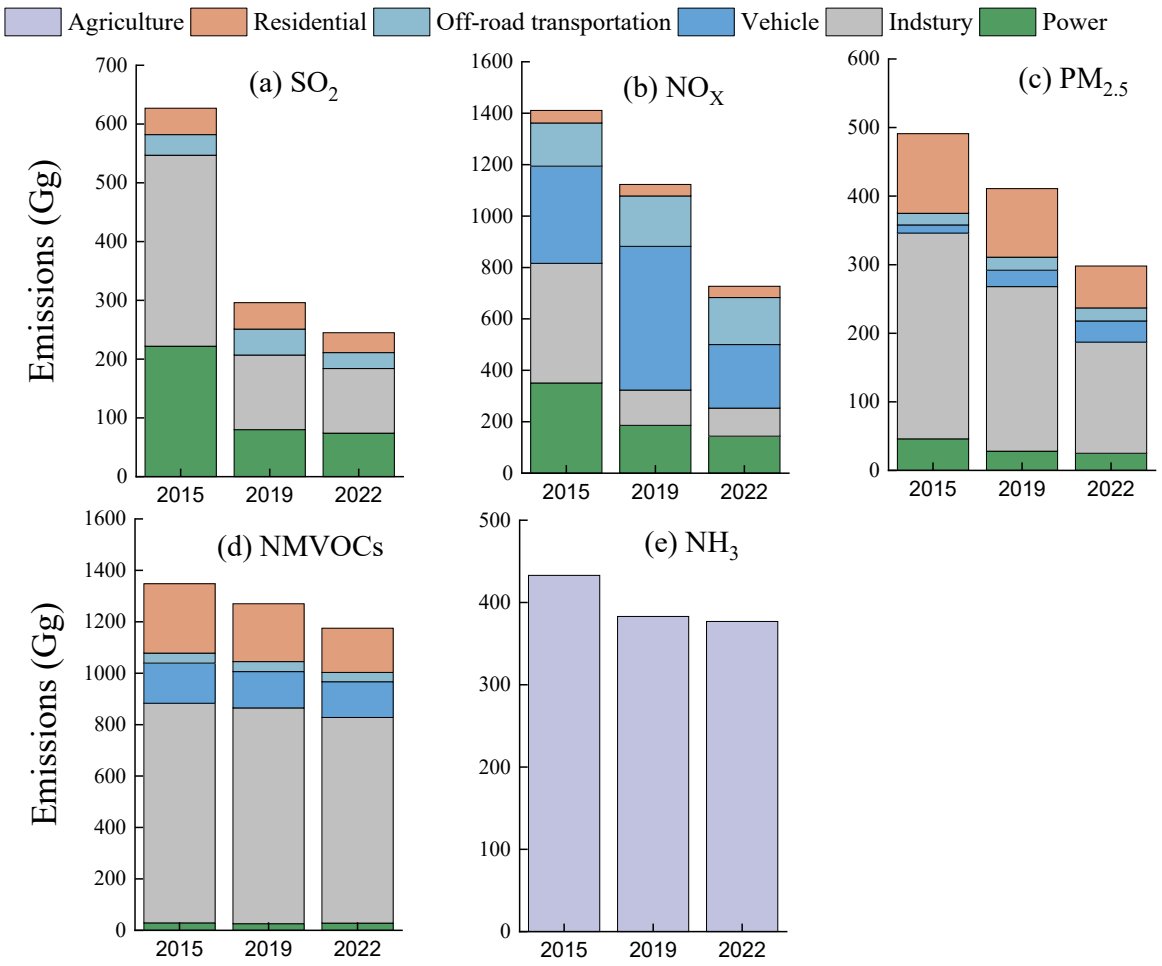

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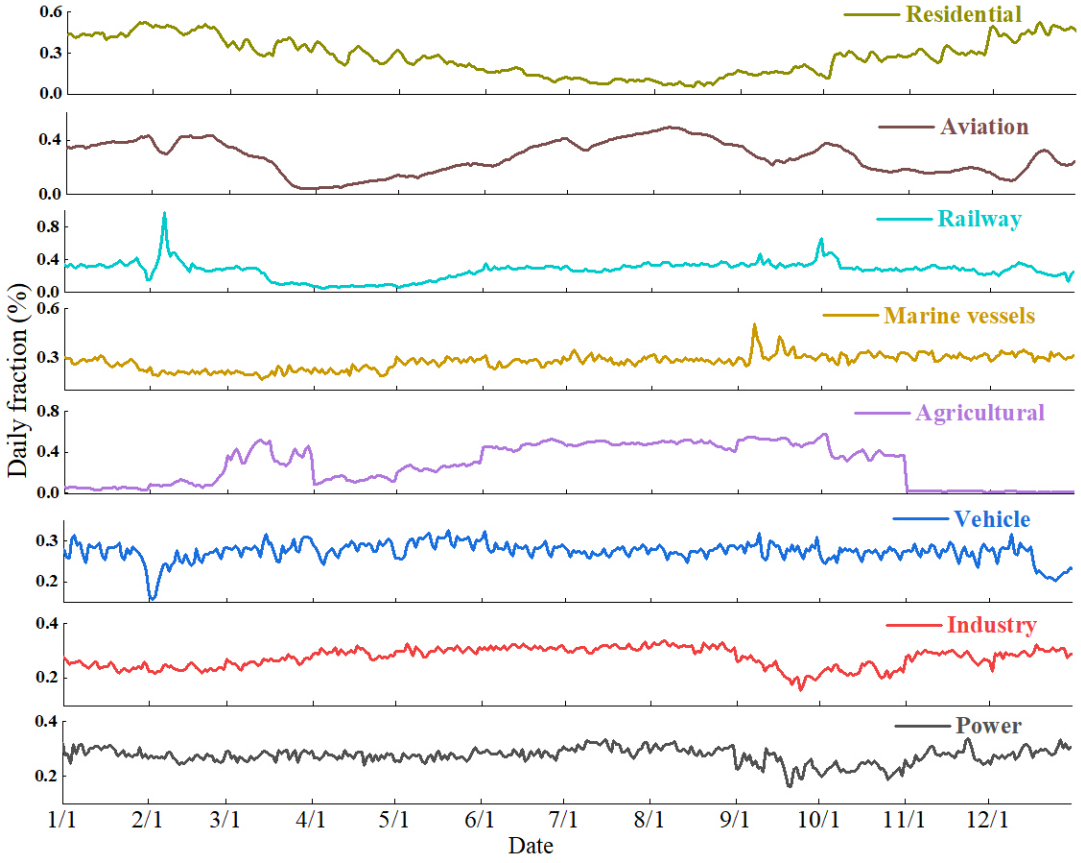

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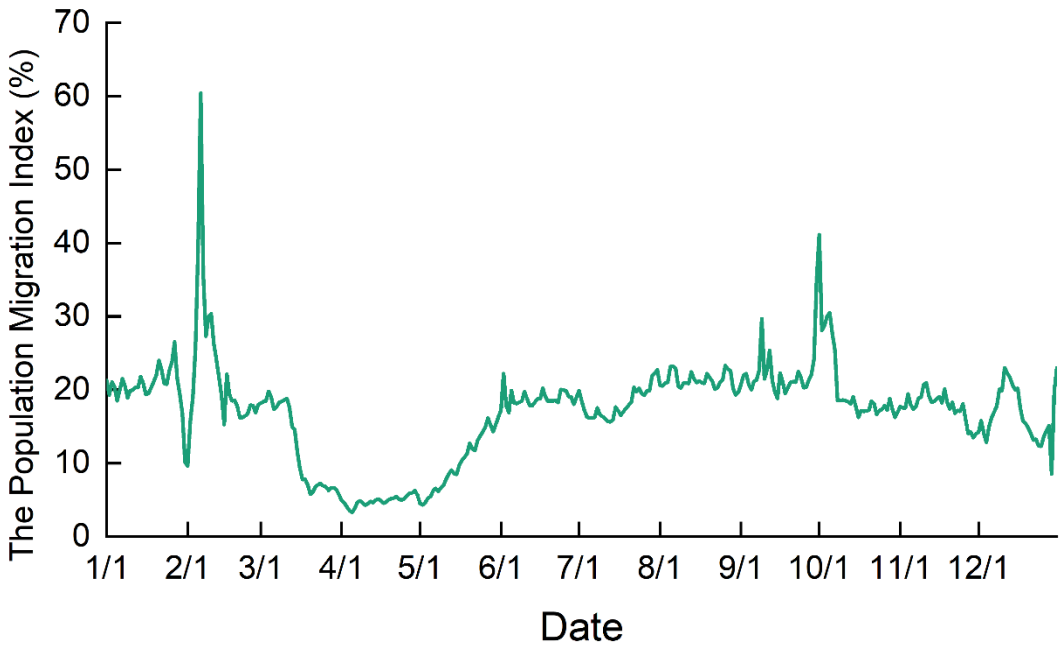

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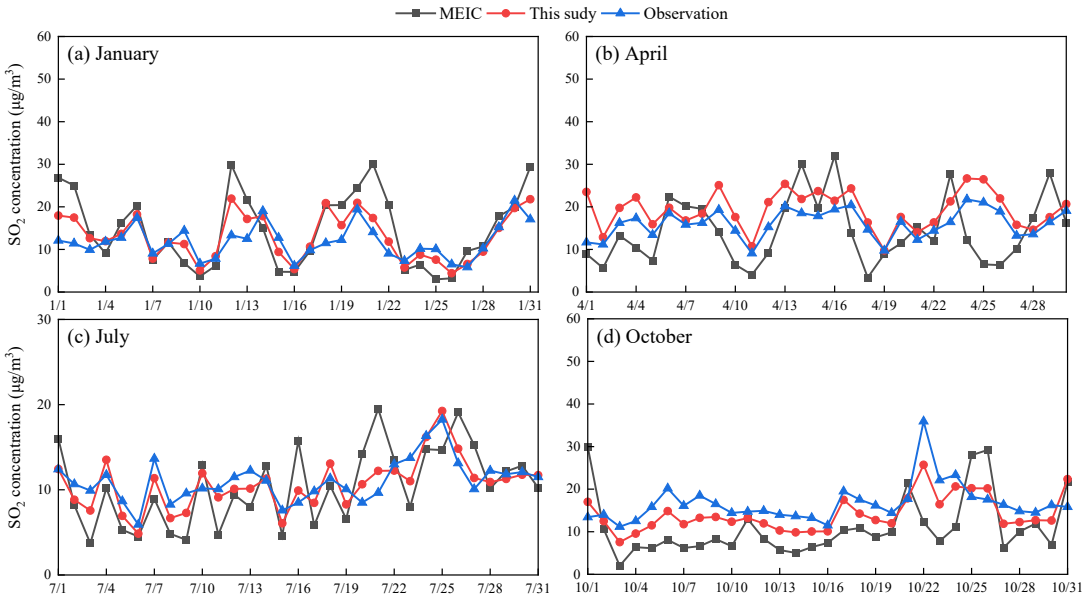

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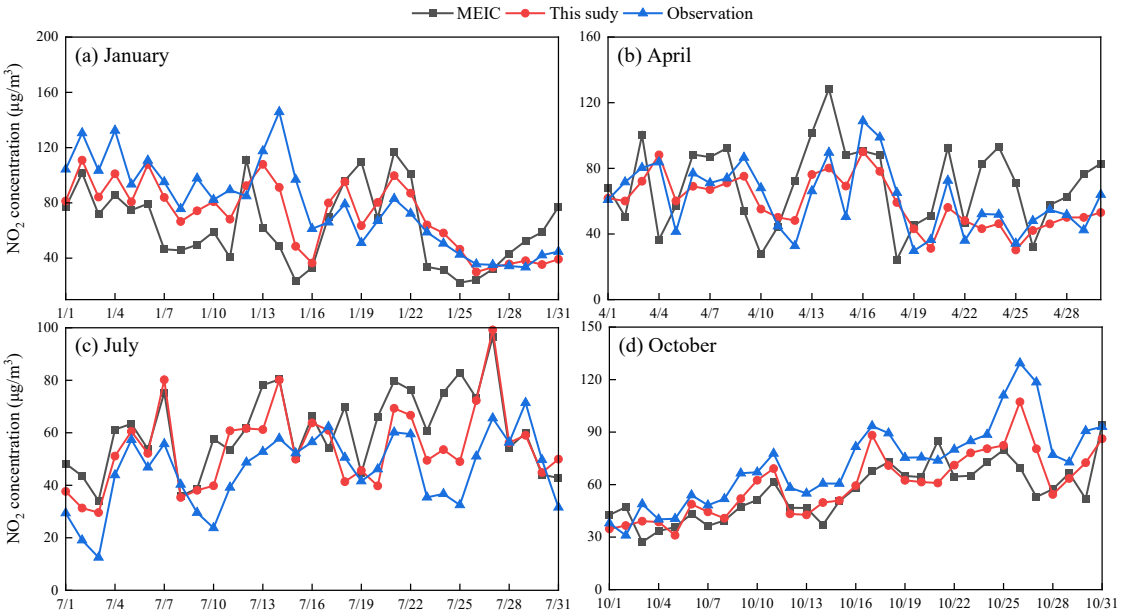

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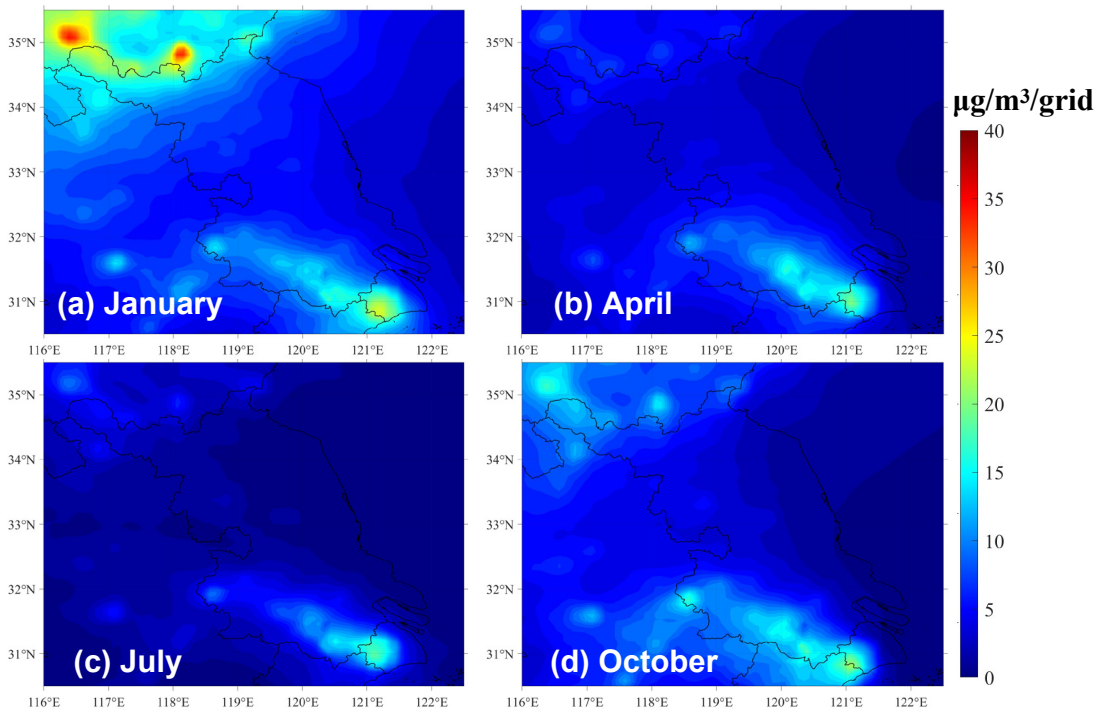

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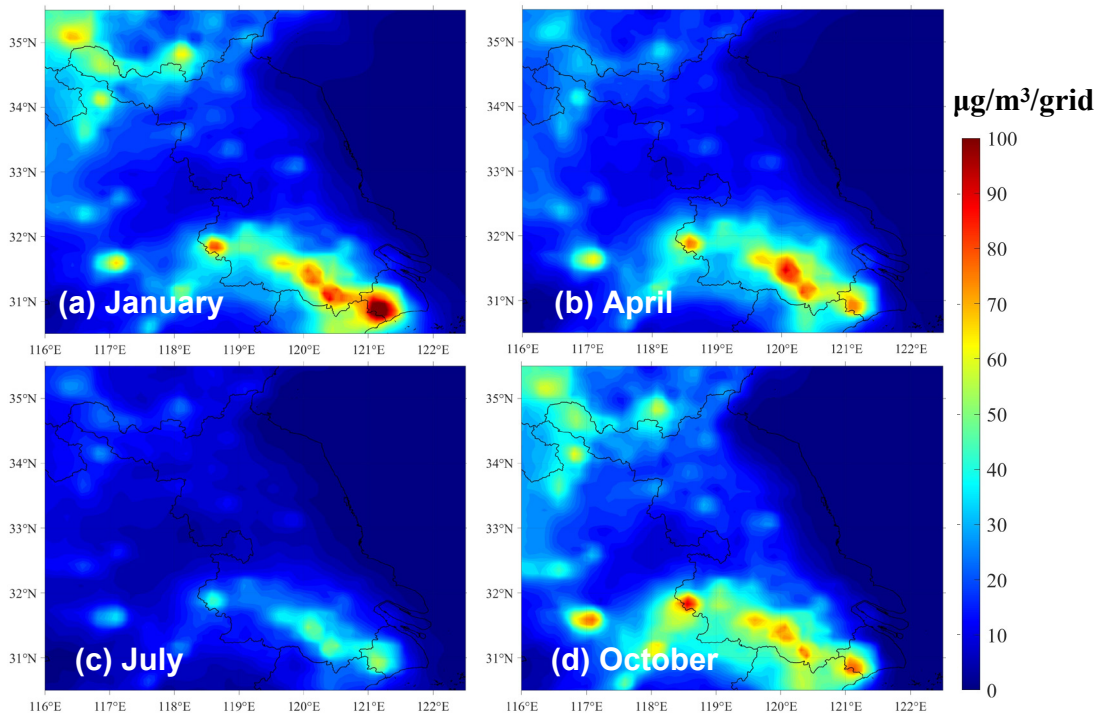

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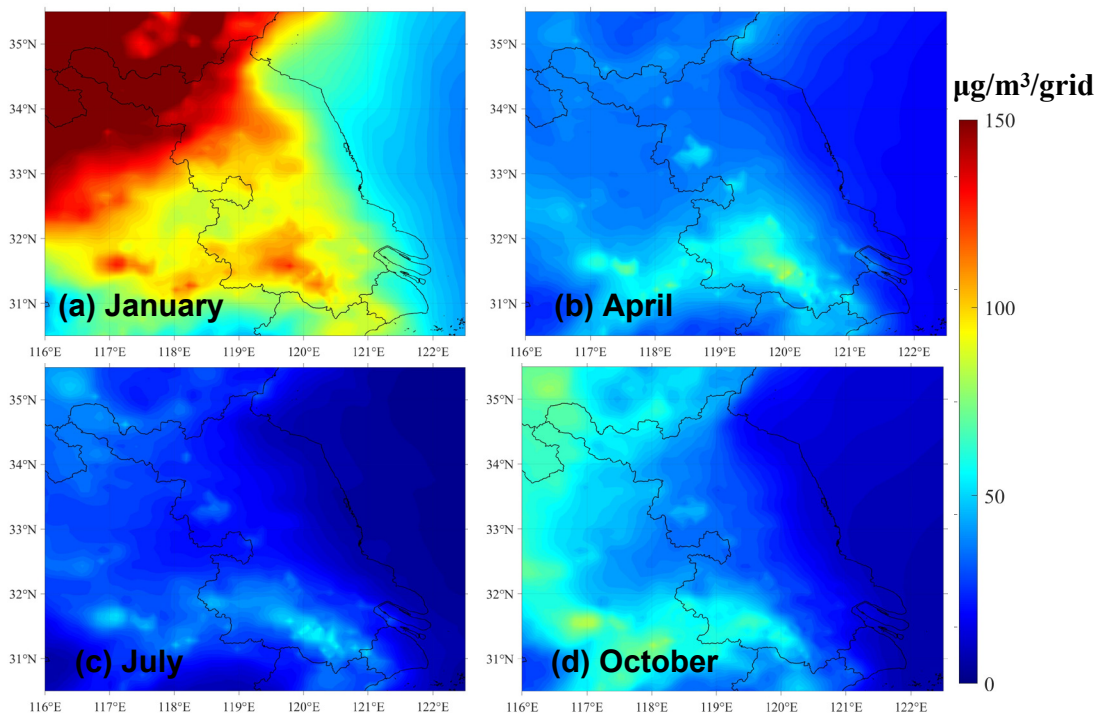

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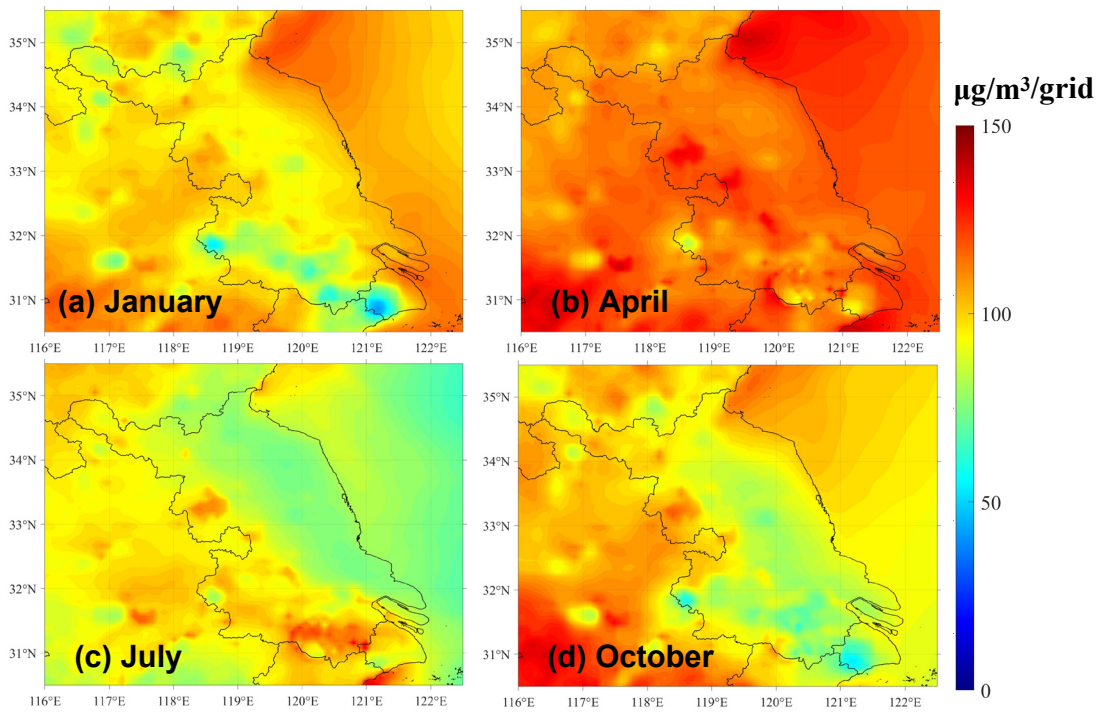

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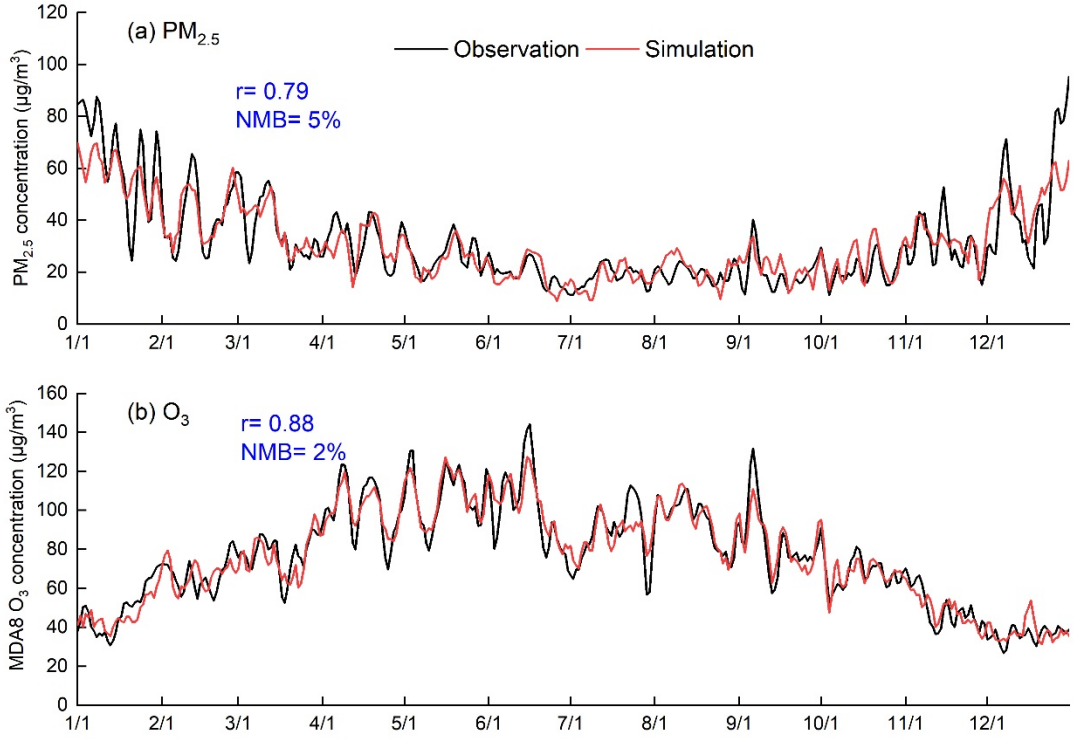

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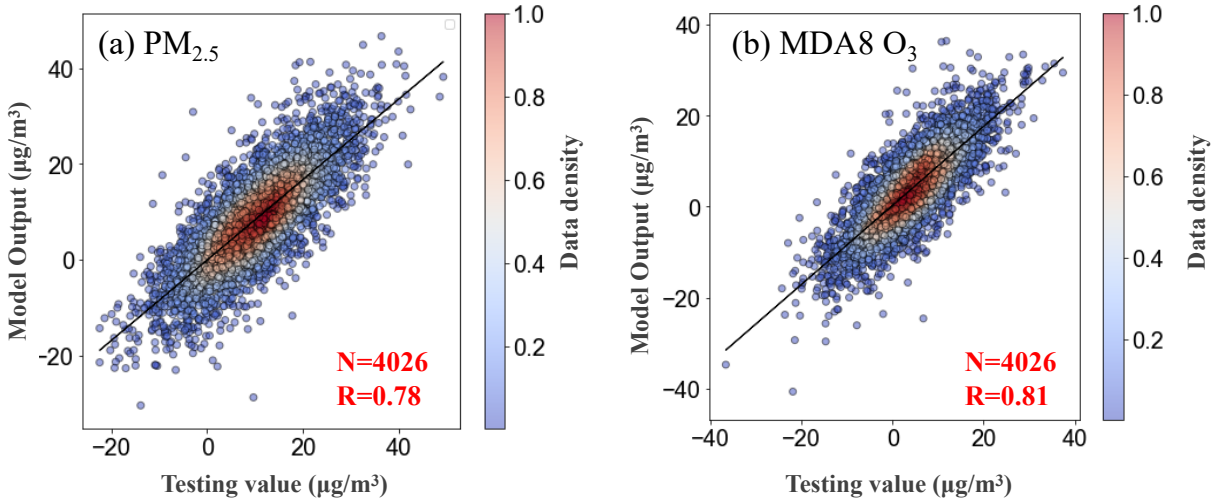

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