

1 *Supplement of*

2 **Long-term trends and drivers of aerosol pH in eastern China**

3 Min Zhou et al.

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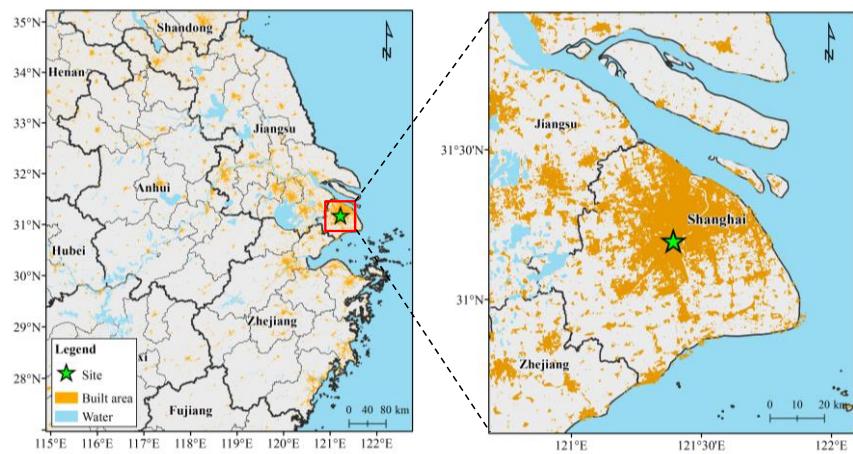
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- 40 Figure S1 Location of the sampling site
- 41 Figure S2 Comparisons of anions and cations in Shanghai during 2011-2019
- 42 Figure S3 Comparisons of predicted and measured NH₃, NH₄⁺, NO₃⁻ and HNO₃ in
43 Shanghai during 2011-2019
- 44 Figure S4 (a-g) The sensitivity tests of aerosol pH to SO₄²⁻, TNO₃, Cl⁻, NVCs, TNHx,
45 temperature and RH from 2011 to 2019. RH, relative humidity; NVCs, non-volatile
46 cations; NHx, total ammonia; TNO₃, total nitrate
- 47 Figure S5 Annual variations of different chemical species in PM_{2.5} from 2011 to 2019
- 48 Figure S6 Monthly mean of PM_{2.5}, SO₄²⁻, NO₃⁻, NH_x, Cl⁻ and NVCs from 2011 to
49 2019
- 50 Table S1 Comparison of the PM_{2.5} pH values in this study with other sites
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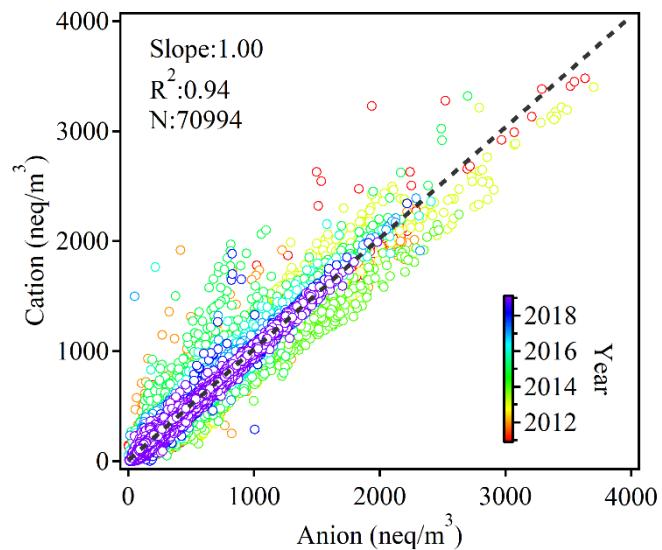
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Figure S1 Location of the sampling site

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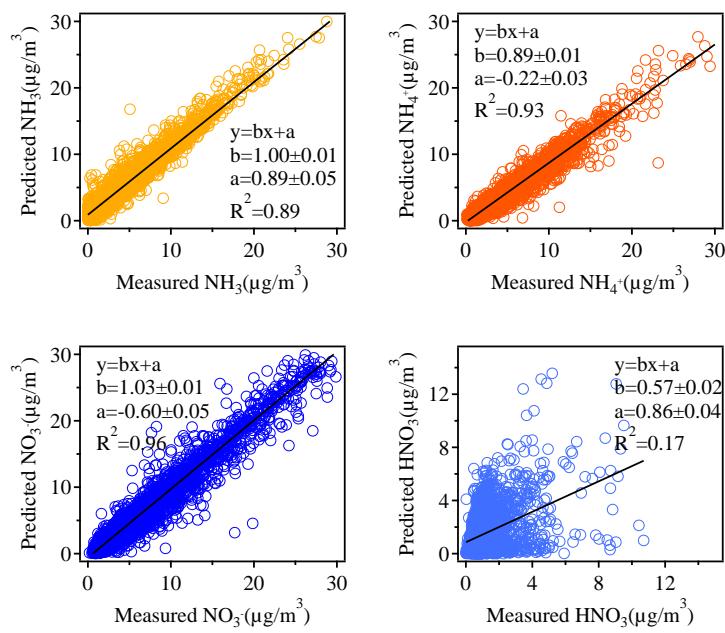
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Figure S2 Comparisons of anions and cations in Shanghai during 2011-2019

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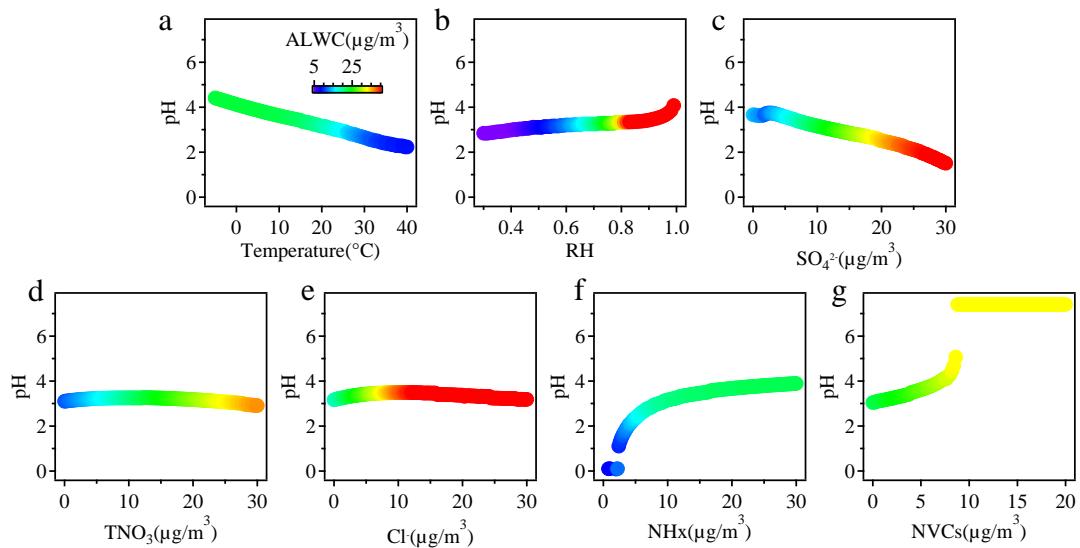
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Figure S3 Comparisons of predicted and measured NH_3 , NH_4^+ , NO_3^- and HNO_3 in Shanghai during 2011-2019

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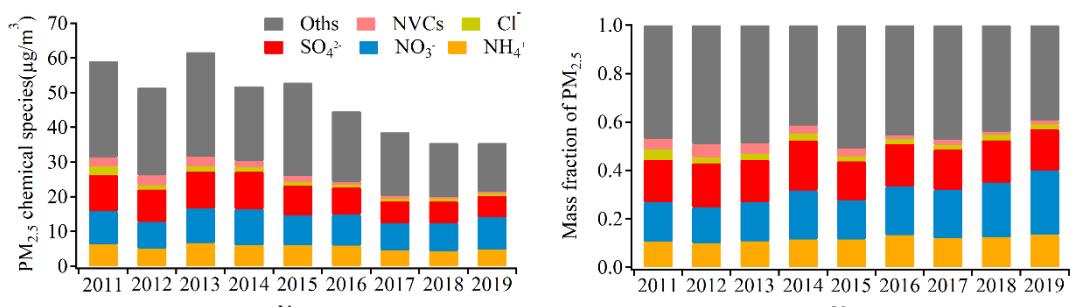
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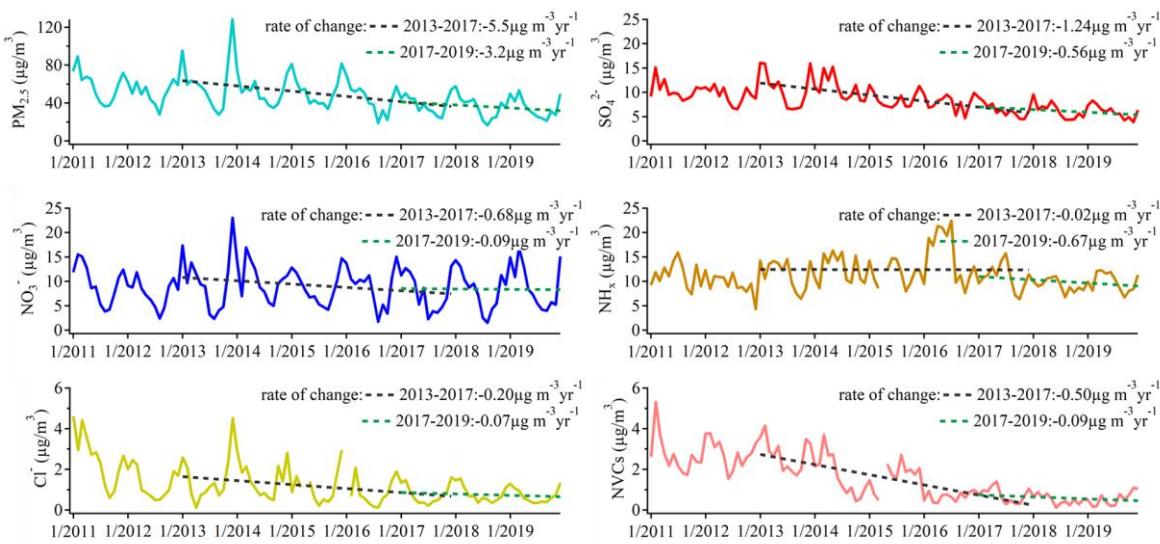


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77 Figure S5 Annual variations of different chemical species in PM_{2.5} from 2011 to 2019

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81 Figure S6 Monthly mean of PM_{2.5}, SO₄²⁻, NO₃⁻, NH_x, Cl⁻ and NVCs from 2011 to 2019

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Table S1 Comparison of the PM_{2.5} pH values in this study with other sites

Summer Site	Aerosol size	Measurement periods	pH	Reference	Winter Site	Aerosol size	Measurement periods	pH	Reference
Guangzhou	PM _{2.5}	2013	2.8	(Jia et al., 2018)	Shanghai	PM _{2.5}	2011-2019	3.52	This study
Shanghai	PM _{2.5}	2011-2019	2.93	This study	Anyang	PM _{2.5}	2018	4.8	(Wang et al., 2020)
Tianjin	PM _{2.5}	2015	3.4	(Shi et al., 2019)	Zhengzhou	PM _{2.5}	2018	4.5	(Wang et al., 2020)
Beijing	PM _{2.5}	2014	1.82	(Tan et al., 2018)	Beijing	PM _{2.5}	2014	4.11	(Tan et al., 2018)
Beijing	PM _{2.5}	2017	3.8	(Ding et al., 2019)	Beijing	PM _{2.5}	2017	4.5	(Ding et al., 2019)
Inner Mongolia	PM _{2.5}	2014	5	(Wang et al., 2019)	Inner Mongolia	PM _{2.5}	2015	5.7	(Wang et al., 2019)
Cabauw	PM _{2.5}	2013	3.3	(Guo et al., 2018)	Cabauw	PM _{2.5}	2012	3.9	(Guo et al., 2018)
Po Valley	PM _{2.5}	2012	2.3	(Masiol et al., 2020)	Po Valley	PM _{2.5}	2012/2013	3.9	(Masiol et al., 2020)
JST	PM _{1.0}	2011	0.55	(Guo et al., 2015)	JST	PM ₁	2012	2.2	(Guo et al., 2015)
Yorkville	PM _{1.0}	2012	1.1	(Guo et al., 2015)	Yorkville	PM ₁	2012	1.8	(Guo et al., 2015)
Atlanta	PM _{1.0}	2012	1.1	(Guo et al., 2015)	Atlanta	PM ₁	2012	1.3	(Guo et al., 2015)
Centreville	PM _{2.5}	2013	1.1	(Pye et al., 2018)	Yorkville	PM ₁	2016	2.2	(Nah et al., 2018)

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