Supplementary Material

A Review of Aerosol Chemical Composition and Sources in Representative Regions of China during Wintertime

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Table S1. Summary of publications selected in this study.

Region	Site	Measurement time	Method	NR_PM ($\mu g\ m^{-3}$)	Type	Reference
BTH	Beijing	Nov.-Dec.2010	AMS	54.0	PM_1	(Hu et al., 2016)
	Beijing	Nov.2011-Jan.2012	ACSM	66.8	PM_1	(Sun et al., 2013)
	Beijing	Nov.2012-Dec.2012	ACSM	78.7	PM_1	(Wang et al., 2015)
	Beijing	Jan.2013	ACSM	77.0	PM_1	(Sun et al., 2014)
	Beijing	Jan.2013	Off-line AMS	130.6	$PM_{2.5}$	(Huang et al., 2014)
	Beijing	Jan.2013	AMS	89.3	PM_1	(Zhang et al., 2014)
	Beijing	Jan.-Mar.2013	AMS	77.8	PM_1	(Hu et al., 2017)
	Beijing	Dec.2013-Jan.2014	AMS	56.2	PM_1	(Sun et al., 2015)
	Beijing	Dec.2013-Jan.2014	AMS	64	PM_1	(Sun et al., 2016a)
	Beijing	Jan.2014	AMS	87.7	$PM_{2.5}$	(Elser et al., 2016)
	Beijing	Dec.2014	AMS	90.3	PM_1	(Zhang et al., 2016a)
	Shijiazhuang	Jan.-Feb. 2014	ACSM	178.0	PM_1	(Huang et al., 2019)
	Handan	Dec.2015-Feb.2016	ACSM	178.1	PM_1	(Li et al., 2017)
GZ	Xi'an	Dec.2012-Jan.2013	ACSM	138.8	PM_1	(Wang et al., 2014)
	Xi'an	Jan.2013	Off-line AMS	184.3	$PM_{2.5}$	(Huang et al., 2014)
	Xi'an	Dec.2013-Jan.2014	AMS	247.0	$PM_{2.5}$	(Elser et al., 2016)
	Baoji	Feb.-Mar.2014	ACSM	54.0	PM_1	(Wang et al., 2017)
PRD	Shenzhen	Jan.-Feb.2009	AMS	57.3	PM_1	(Huang et al., 2010)
	Shenzhen	Oct.-Dec.2009	AMS	38.3	PM_1	(He et al., 2011)
	Heshan	Nov.-Dec.2010	AMS	39.7	PM_1	(Gong et al., 2012)
	Hongkong	Jan.-Mar.2012	AMS	15.4	PM_1	(Li et al., 2015)
	Guangzhou	Jan.2013	Off-line AMS	52.4	PM2.5	(Huang et al., 2014)
	Hongkong	Nov.-Dec.2013	ACSM	25.9	PM_1	(Sun et al., 2016b)
	Dongguan	Dec.2013-Jan.2014	AMS	52.1	PM_1	(Lan et al., 2017)
	Guangzhou	Nov.2014-Jan.2015	AMS	50.7	PM_1	(Qin et al., 2017)
	Shenzhen	Jan.2015	AMS	37.5	PM_1	(Cao et al., 2018)
	Shanghai	Jan.2013	Off-line AMS	75.7	$PM_{2.5}$	(Huang et al., 2014)

YRD	Lin'an	Nov.-Dec.2013	AMS	63	PM_1	(Zhang et al., 2015a)
	Nanjing	Dec.2013	ACSM	89.3	PM_1	(Zhang et al., 2015b)

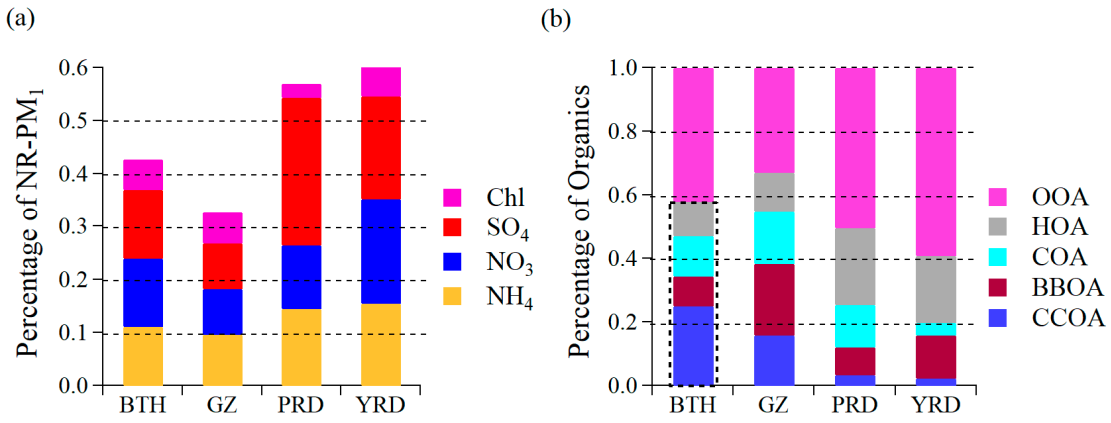

Figure S1. (a) Chemical compositions of inorganic aerosols and (b) fractions of organic sources in four representative regions of China during wintertime on the days of the lowest 5% PM concentrations. The dotted box refers to the primary organic aerosols.

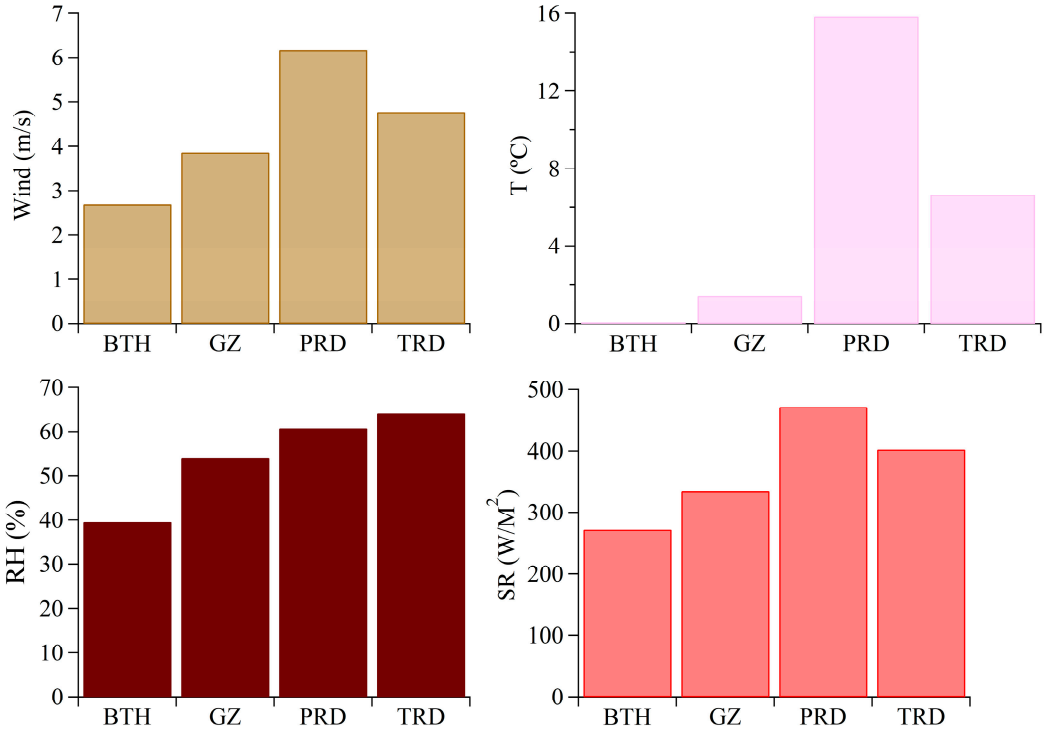

Figure S2. Comparison of meteorological data (wind speed, temperature, relative humidity, and solar radiation) in the four regions during the selected study period. The SR refers to the average solar radiation from 12:00 to 18:00.

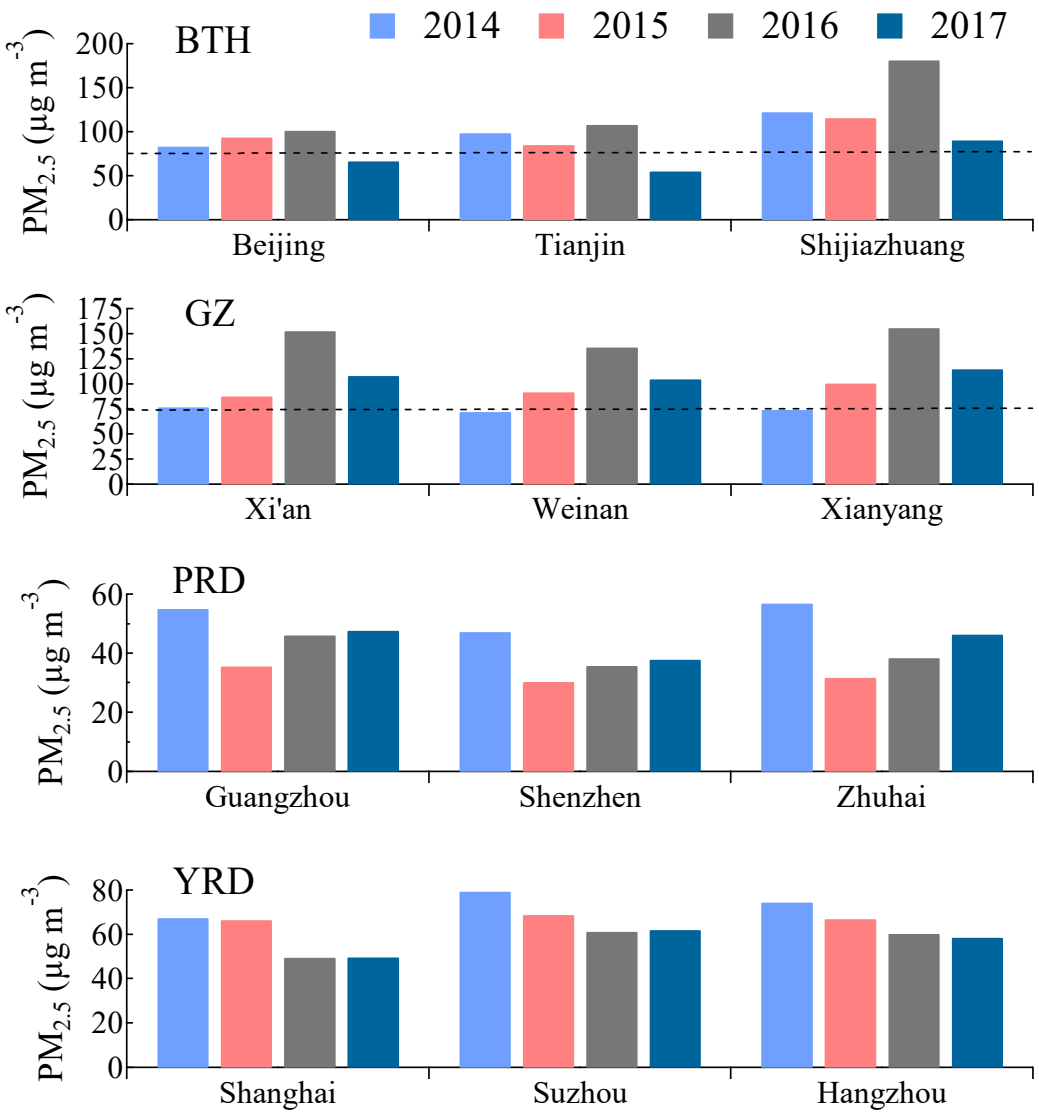

Figure S3. Average mass concentration of $PM_{2.5}$ during wintertime from 2014 to 2017 in representative cities of four regions.

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