Supplementary materials

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Figure S3. Backward trajectories (48 h) of air masses at 500 m above ground level clustered during the following sampling periods: summer (from 18 July to 1 August 2014) and winter (from 27 January to 8 February 2015).

Table S1. Marker ions used to classify the major groups of amine-containing particles in this work.

Species	*m/z*	Marker Ion	Area	Relative Area	Function
Elemental and organic carbon (ECOC)	±12	$[C]^{\pm}$	50	0.005	or
	±24	$[C_2]^{\pm}$	50	0.005	or
	±36	$[C_3]^{\pm}$	50	0.005	and
	37	$[C_3H]^{+}$	50	0.005	and
	43	$[C_3H_7]^{+}/[C_2H_3O]^{+}$	50	0.005	and
Biomass Burning (BB)	39	$[K]^{+}$	1500	0.3	and
	113,115	$[K_2Cl]^{+}$	50	0.005	or
	213	$[K_3SO_4]^{+}$	50	0.005	or
	-26	$[CN]^{-}$	50	0.005	or
	-59	$[C_2H_3O_2]^{-}$	50	0.005	and
	-73	$[C_3H_3O_2]^{-}$	50	0.005	and
Nitrate-rich	-46	$[NO_2]^{-}$	1000	0.1	and
	-62	$[NO_3]^{-}$	1000	0.1	and
Ammonium	18	$[NH_4]^{+}$	50	0.005	
Nitrate	-46	$[NO_2]^{-}$	100	0.05	or
	-62	$[NO_3]^{-}$	100	0.05	or
Sulfate	-80	$[SO_3]^{-}$	100	0.05	or
	-97	$[HSO_4]^{-}$	100	0.05	or

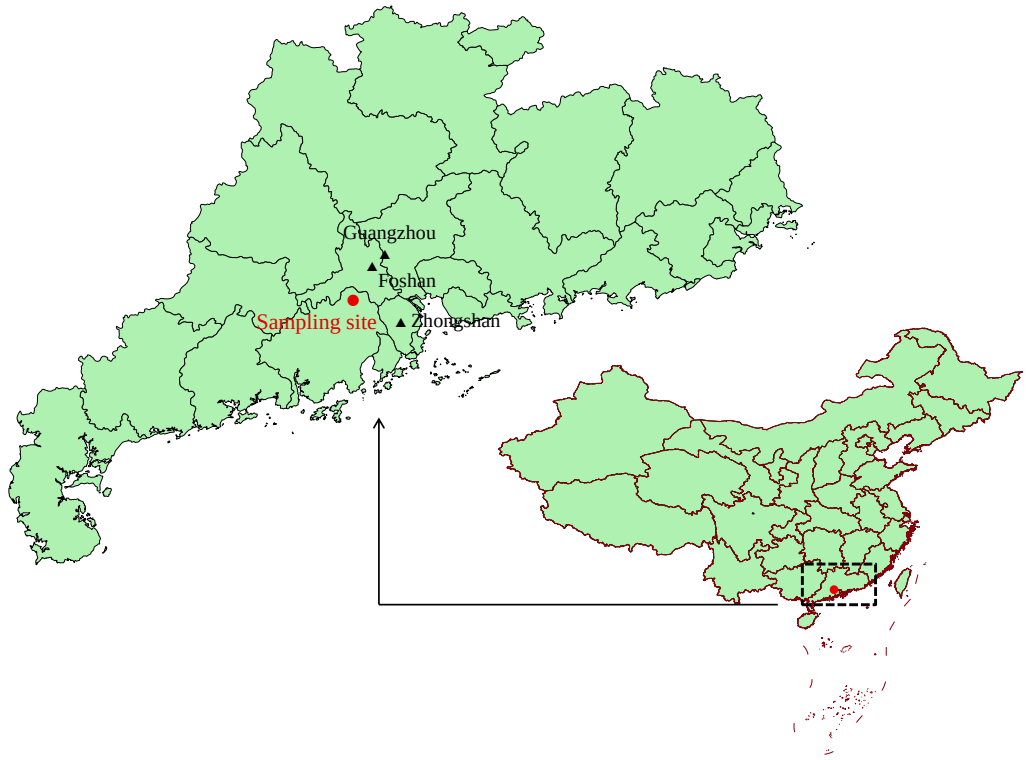

Figure S1. The location of the SPAMS measurements at the Heshan sampling site (22.73° N, 112.93° E) in the PRD, China.

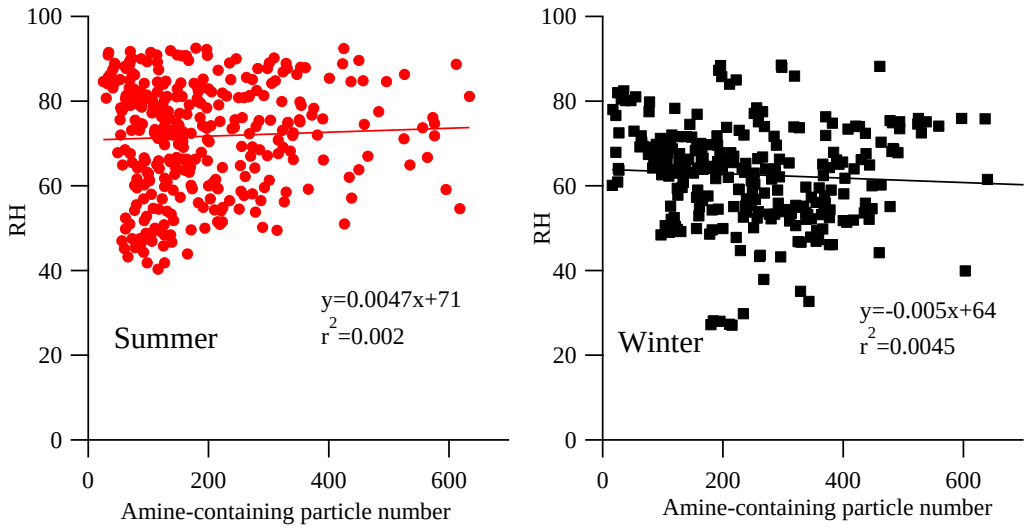

Figure S2. Linear regressions between amine-containing particle number count and ambient relative humidity (RH) in summer and winter in Heshan.

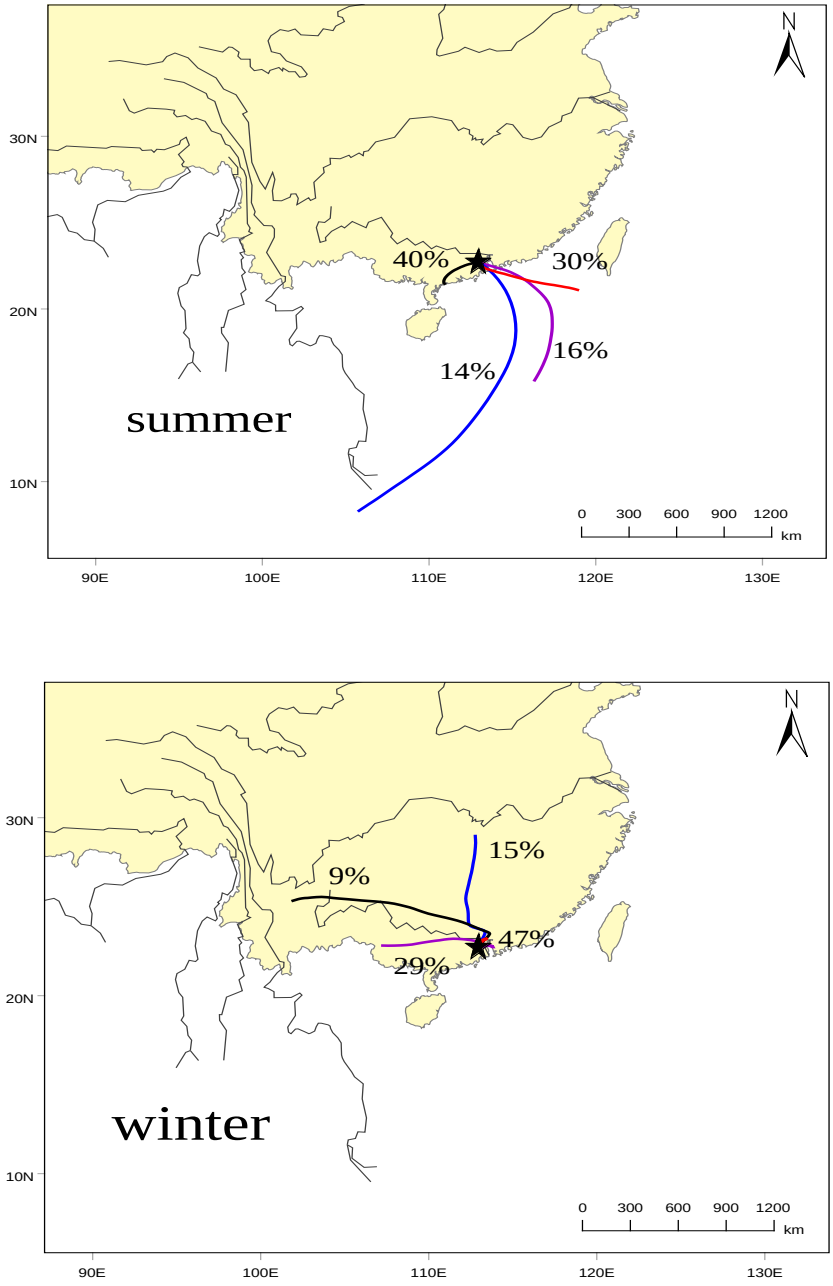

Figure S3. Backward trajectories (48 h) of air masses at 500 m above ground level clustered during the following sampling periods: summer (from 18 July to 1 August 2014) and winter (from 27 January to 8 February 2015).