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Supplement of

Chemical characterization of submicron aerosol and particle growth events at a national background site (3295 m a.s.l.) in the Tibetan Plateau

W. Du et al.

Correspondence to: Y. L. Sun (sunyele@mail.iap.ac.cn)

Table S1. A summary of mass concentration and composition of PM_1 species measured by AMS at different locations in East Asia.

Location		Okinawa	Fukue	Jeju	Jiaxing	Changdao	Mount.Tai	Kaiping	Lanzhou
Time		10/3/2003 10/28/2003	3/20/2003 4/18/2003	4/13/2001 4/30/2001	6/29/2013 7/15/2013	3/21/2011 4/24/2011	2011	10/12/2008 11/18/2008	7/11/2012 8/7/2012
Org	Mass	3.1	5.0	3.5	10.6	13.4	11.2	11.2	11.5
	Frac.	21.4	41.7	40.7	32.1	28.8	32.6	33.9	47
SO_4	Mass	9.2	4.8	3.1	8.2	8.3	9.2	11.1	3.9
	Frac.	63.4	40.0	36.0	25.2	17.8	26.7	33.6	16
NO_3	Mass	0.19	0.56	0.51	5.9	12.2	7.2	3.5	2.5
	Frac.	1.3	4.7	5.9	18.0	26.1	20.9	10.7	10
NH_4	Mass	1.9	1.6	1.5	4.2	6.5	5.8	4.6	2.7
	Frac.	13.1	13.3	17.4	12.6	13.9	16.9	14.0	11
Cl	Mass.	0.06	0.07		1.0	1.3	0.95	0.36	1.0
	Frac.	0.4	0.6		3.0	2.8	2.8	1.1	4
BC	Mass				3.0	2.5		2.2	2.9
	Frac.				9.1	5.4		6.7	12
NR-PM_1		14.5	12.0	8.6	29.9	44.1	34.4	30.8	21.6
PM_1					32.9	46.6		33.1	24.5
References		(Zhang et al., 2007)	(Takami et al., 2005)	(Topping et al., 2004)	(Huang et al., 2013)	(Hu et al., 2013)	(Zhang et al., 2014)	(Huang et al., 2011)	(Xu et al., 2014)

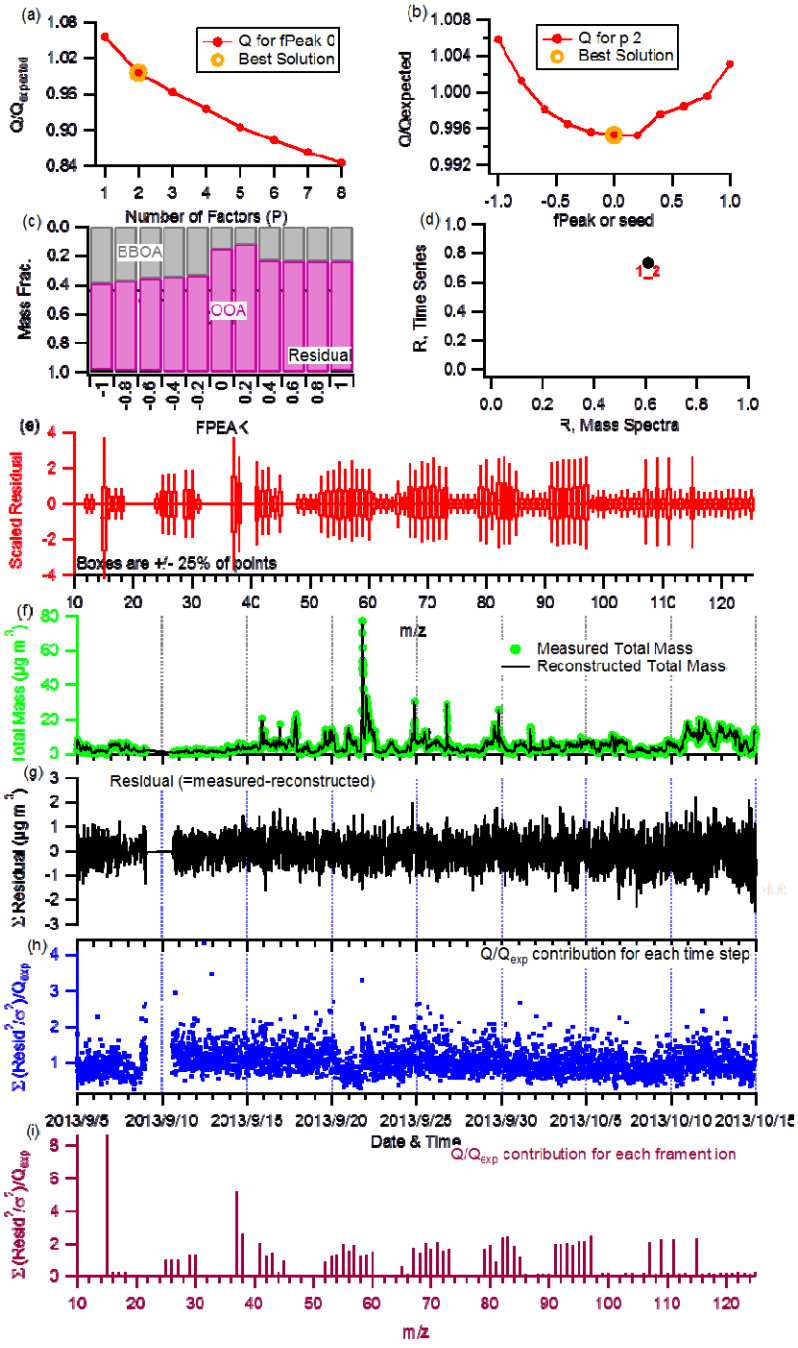

Fig. S1. Summary of key diagnostic plots of the PMF results for an ACSM data acquired at the NBS: (a) Q/Q_{exp} as a function of number of factor (P) selected for PMF modeling. For the two-factor solution (i.e., the best P): (b) Q/Q_{exp} as a function of FPEAK, (c) fractions of OA factors vs. FPEAK, (d) correlations among PMF factors, (e) the box and whiskers plot showing the distributions of scaled residuals for each organic mass, (g) variations of the residual (= measured – reconstructed) of the fit, (h) the Q/Q_{exp} for each point in time, and (i) the Q/Q_{exp} values for each m/z (Zhang et al., 2011).

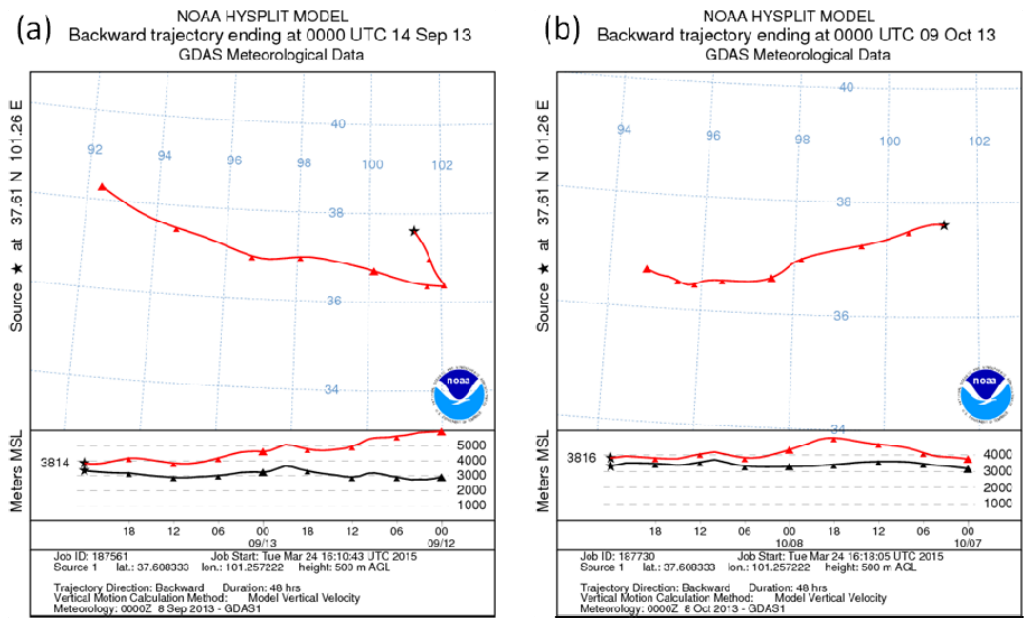

Fig. S2. Backward trajectory at the height of 500 m of during (a) Clean 1 and (b) Clean 2.

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