Contribution of Airborne Dust Particles to HONO Sources

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Supplementary Materials

Table S-1 Concentrations of particles, associated anions (Cl^-, NO_3^- and SO_4^{2-}) and gases during non-dusty days

	Particle				Gases			
Date	**PM(μg/m^3)**	**Cl^-**	**NO_3^-**	**SO_4^{2-}**	**HCl**	**HNO_2**	**HNO_3**	**H_2SO_4**
19-Aug-09	65.93	0.00	6.09	12.41	1.68	0.78	2.19	6.18
25-Aug-09	45.63	2.01	9.59	14.41	1.97	0.33	1.46	4.42
31-Aug-09	43.70	2.96	5.24	8.45	11.24	0.40	2.04	12.00
6-Sep-09	46.15	0.91	4.28	13.69	2.31	0.48	1.24	12.21
24-Sep-09	30.65	1.73	2.52	3.72	1.31	0.98	1.87	25.23
30-Sep-09	44.54	0.75	3.58	7.19	2.59	0.66	2.06	44.41
6-Oct-09	56.89	2.04	4.24	6.77	1.48	1.02	0.65	8.60
12-Oct-09	42.66	0.70	4.66	8.73	0.72	0.83	2.83	17.62
30-Oct-09	62.87	2.25	2.12	3.06	1.13	1.12	2.53	17.38
29-Nov-09	37.08	0.00	2.83	13.82	2.27	1.12	0.89	14.36
17-Dec-09	48.41	12.39	1.57	6.70	3.36	1.15	0.86	10.42
29-Dec-09	55.30	10.68	3.82	7.26	1.02	0.61	0.62	11.17
4-Jan-10	51.24	16.21	2.56	7.59	1.71	0.27	0.80	7.27
3-Feb-10	49.41	23.31	0.78	4.46	2.52		1.33	14.57
27-Feb-10	64.52	13.43	3.25	6.76	0.42	0.46	1.02	26.20
17-Mar-10	33.50	4.34	2.81	6.37	8.98	0.67	0.85	15.43
23-Mar-10	58.83	0.51	7.64	8.45	12.72	1.81	1.92	29.51
29-Mar-10	67.81	9.46	3.81	3.08	5.98	0.81	0.95	8.71
4-Apr-10	76.95	2.06	9.15	9.53	1.99	0.61	1.68	16.23
2-Mar-11	38.02	1.20	2.92	4.88	6.94	1.93	0.94	11.68
14-Mar-11	32.91	0.71	2.83	5.22	5.50	2.69	2.97	23.80
16-Mar-11	53.14	0.92	3.09	6.78	2.91	2.37	3.17	21.64
18-Mar-11	56.44	0.31	7.64	9.03	3.26	2.62	3.07	26.28
30-Mar-11	48.61	1.42	4.24	10.91	3.67	2.07	2.20	33.31
13-Apr-11	48.56	4.50	3.17	3.73	3.36	1.04	0.85	12.14
21-Apr-11	26.21	1.35	2.57	3.29	3.54	0.56	1.70	5.35
21-May-11	45.32	6.54	5.68	6.10	3.24	0.67	1.04	5.66
7-Mar-11	48.73	10.83	1.64	3.95	5.16	1.50	1.45	8.54
4-Apr-11	37.54	4.33	1.29	3.76	4.17	0.87	0.59	4.79
28-Apr-11	61.75	2.03	2.06	3.32	4.35	1.65	2.34	14.07
1-Jun-11	54.94	0.30	7.75	1.20	2.94	0.63	0.82	7.62
Average	**49.49**	**4.52**	**4.04**	**6.92**	**3.69**	**1.09**	**1.58**	**15.38**
Standard Deviation	**11.82**	**5.69**	**2.30**	**3.45**	**2.91**	**0.68**	**0.79**	**9.46**

Table S-2 Concentrations of particles, associated anions (Cl^-, NO_3^- and SO_4^{2-}) and gases during dusty days

	Particles				Gases			
Date	**PM(μg/m^3)**	**Cl^-**	**NO_3^-**	**SO_4^{2-}**	**HCl**	**HNO_2**	**HNO_3**	**H_2SO_4**
18-Oct-09	129.52	0.00	6.60	15.63	1.14	2.58	5.06	32.38
24-Oct-09	83.55	0.00	9.29	12.65	0.62	1.84	2.44	35.31
5-Nov-09	130.41	2.45	13.07	11.12	0.30	2.21	2.67	21.84
11-Nov-09	80.86	1.11	12.04	19.14	4.03	1.94	1.09	21.69
23-Nov-09	77.47	0.00	3.31	2.39	15.67	1.76	2.07	40.91
5-Dec-09	72.82	2.12	8.98	11.22	3.55	1.56	2.20	20.72
23-Dec-09	102.83	0.29	14.59	25.72	2.30	2.87	1.96	74.64
16-Jan-10	92.95	4.82	6.45	9.05	1.27	2.35	1.08	61.40
22-Jan-10	83.00	6.27	3.83	8.18	1.33	1.73	0.82	23.49
28-Jan-10	92.08	5.07	8.27	12.95	1.61	1.60	1.79	29.63
9-Feb-10	90.85	12.98	4.23	5.45	3.74	0.51	2.01	44.93
15-Feb-10	183.89	1.32	10.48	12.74	3.16	3.67	1.93	90.97
21-Feb-10	134.88	25.15	5.54	7.49	7.56		4.29	36.13
5-Mar-10	120.47	17.61	7.97	6.69	0.65	0.56	1.03	30.68
16-Apr-10	85.84	1.31	13.07	11.46	8.48	1.89	2.41	25.87
10-Jan-10	86.51	0.48	5.95	9.37	0.77	5.39	1.53	67.80
1-Apr-11	148.86				4.59	3.57	6.88	29.49
15-Apr-11	88.56	1.44	4.18	6.03	4.58	5.27	2.36	26.36
18-Apr-11	172.99	5.05	8.57	7.35	3.59	0.42	3.36	11.97
17-May-11	164.69	4.22	7.59	7.40	3.57	1.11	1.94	12.08
Average	**111.15**	**4.83**	**8.11**	**10.63**	**3.63**	**2.25**	**2.45**	**36.91**
Standard Deviation	**34.62**	**6.74**	**3.36**	**5.34**	**3.60**	**1.40**	**1.48**	**21.18**

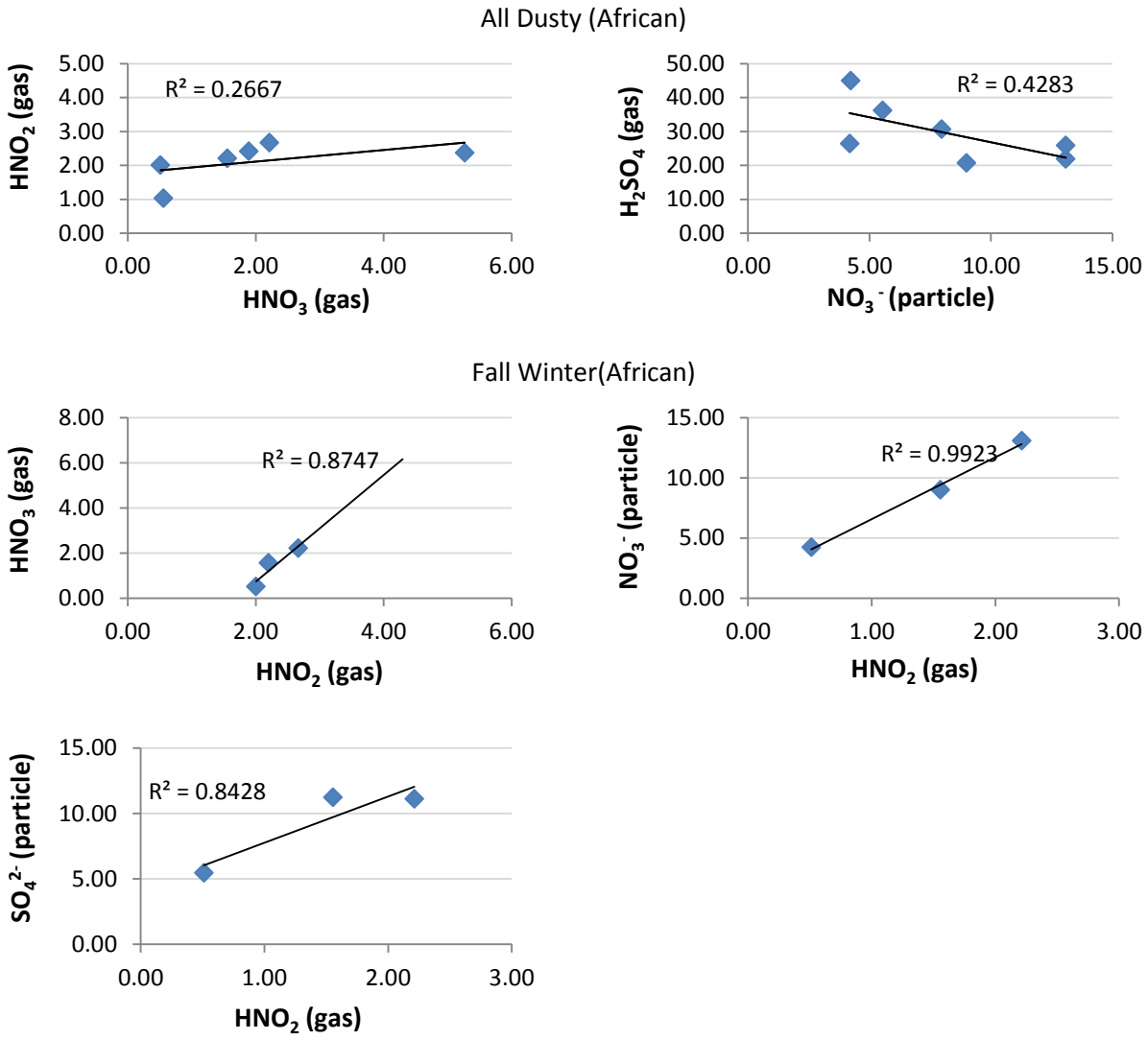

Figure S-1. Correlations between acidic gases and their corresponding anions in particles during African dust events. Correlations which are enhanced because of high relative humidity (average of 80%) in the Fall-Winter season are emphasized. The average relative humidity in the Spring-Summer season was less than 50%.

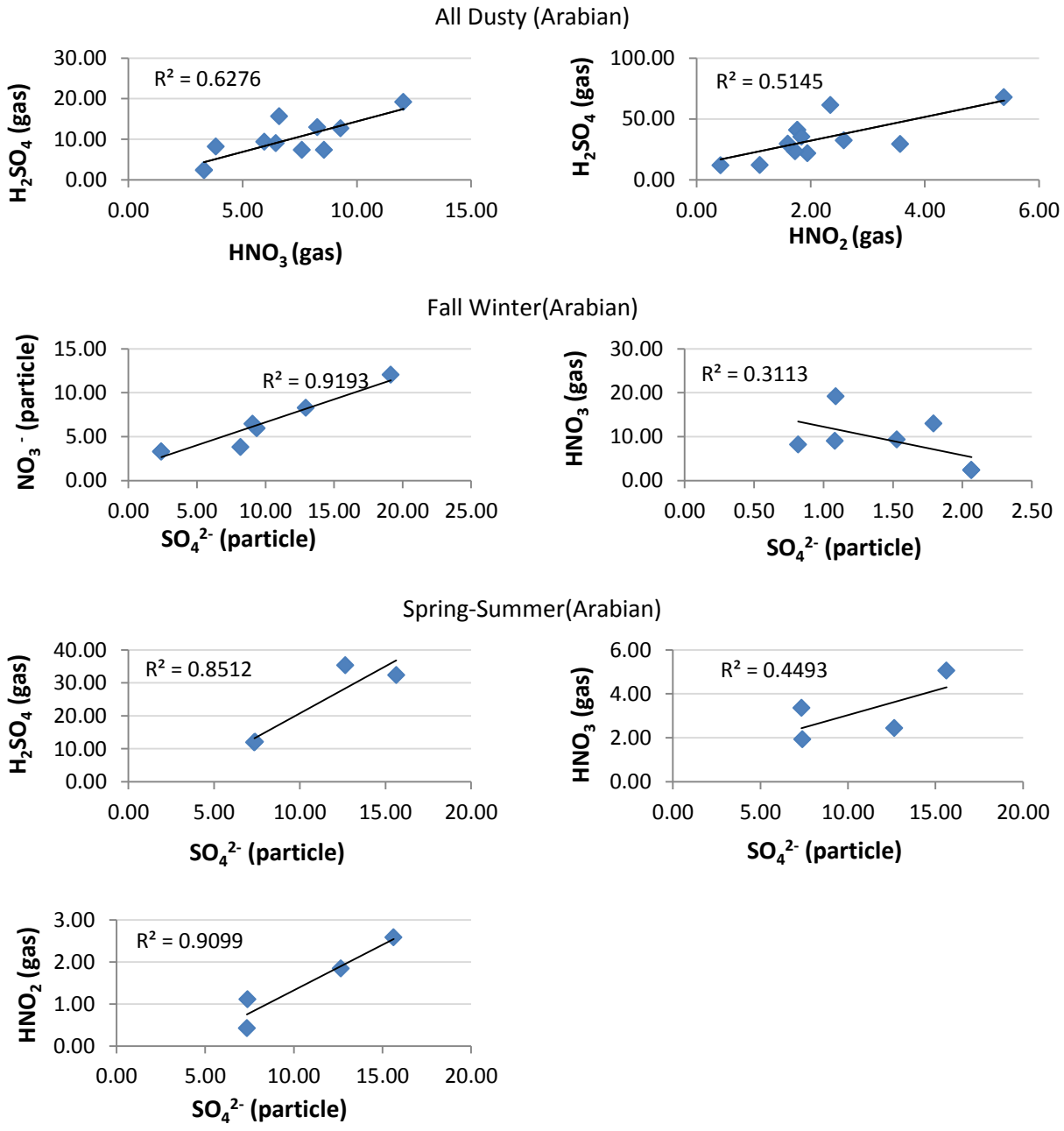

Figure S-2. Correlations between acidic gases and their corresponding anions in particles during Arabian dust events. Correlations which are enhanced because of low relative humidity with an average of 38% in the Fall-Winter and an average of 27% in the Spring Summer seasons are emphasized