Appendix I: Analysis of SF_6 Concentration Data for Test 11

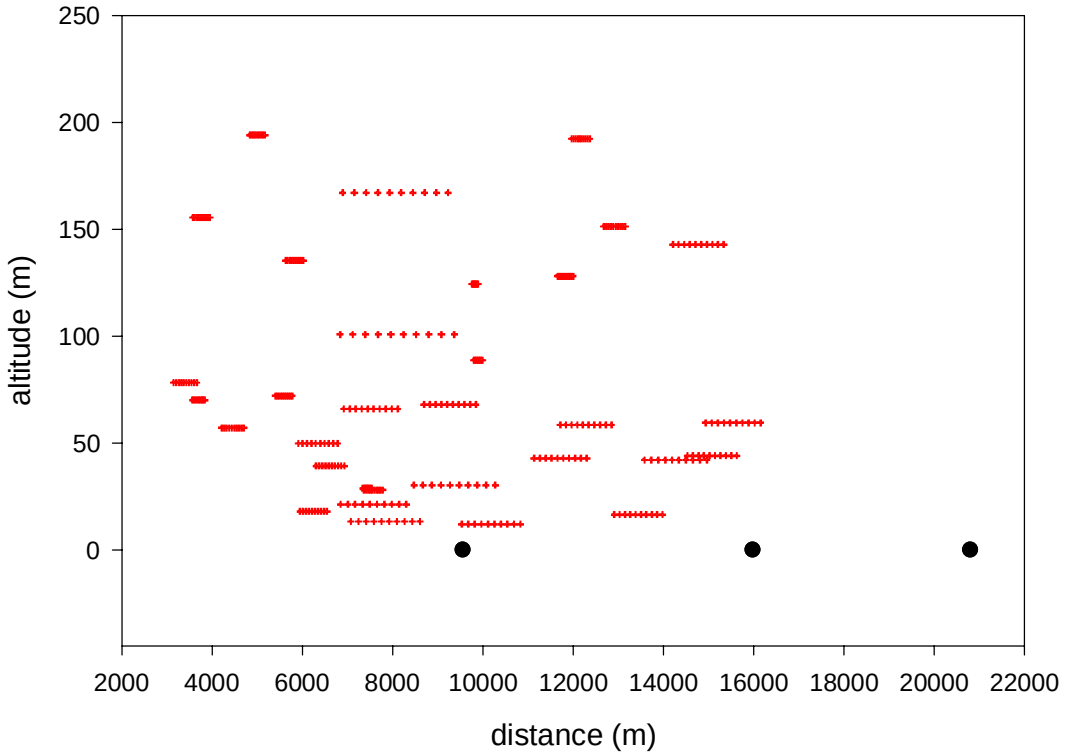

Figure I1. Test 11 continuous analyzer data. Altitude versus downwind distance. The red crosses are aircraft measurements. The black circles are the positions of sampling Lines 1, 2, and 3. The width is ± 1σ from the position of peak concentration.

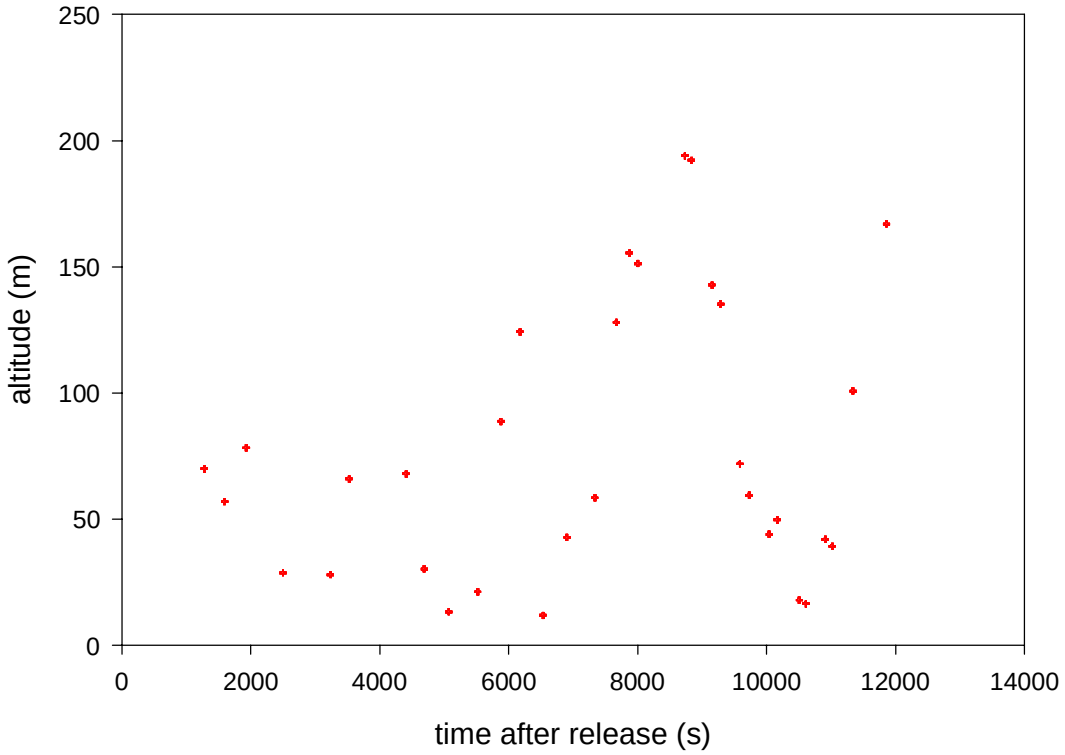

Figure I2. Test 11 continuous analyzer data. Altitude versus time after release. The red crosses are aircraft measurements.

Table I1. Test 11 SF_6 transport parameters from aircraft continuous analyzer.

	Pass							
	1	2	3	4	5	6	7	8
SF_6 Speed ($m\ s^{-1}$)	2.8	2.7	1.7	2.9	2.3	2.1	2.0	1.9
Error SF_6 Speed ($m\ s^{-1}$)	0.00	0.04	0.07	0.01	0.00	0.20	0.10	0.20
σ_x (m)	300	550	570	210	460	1330	1280	2000
Error σ_x (m)	110	80	530	130	160	1230	800	2030
Peak Detection Time (s)	1280	1600	1930	2500	3240	3530	4400	4700
Error Peak Detection Time (s)	22	22	22	22	22	26	24	27
Peak Concentration (pptv)	6620	12500	9120	5730	14000	10340	6620	13480
Error Peak Concentration (pptv)	2260	1390	5680	2830	4030	11000	3440	15040
Altitude (m)	70	60	80	30	30	70	70	30
Downwind Distance (m)	3700	4400	3400	7400	7600	7500	9200	9300
Error Downwind Distance (m)	0.0	0.07	0.13	0.03	0.0	0.9	0.7	1100

Table I1. Test 11 SF_6 transport parameters from aircraft continuous analyzer (continued).

	Pass							
	9	10	11	12	13	14	15	16
SF_6 Speed ($m\ s^{-1}$)	1.5	1.3	1.6	1.5	1.5	1.6	1.6	1.5
Error SF_6 Speed ($m\ s^{-1}$)	0.40	0.20	0.00	0.01	0.10	0.00	0.03	0.00
σ_x (m)	1700	1620	220	150	1450	1300	1260	390
Error σ_x (m)	1540	1550	40	60	1160	340	260	160
Peak Detection Time (s)	5080	5520	5880	6180	6530	6900	7340	7670
Error Peak Detection Time (s)	36	27	22	22	30	22	22	22
Peak Concentration (pptv)	1120	3030	3380	130	7130	4000	3400	350
Error Peak Concentration (pptv)	1280	2950	530	40	8610	1000	600	110
Altitude (m)	10	20	90	120	10	40	60	130
Downwind Distance (m)	7800	7500	9900	9800	10100	11700	12200	11800
Error Downwind Distance (m)	2000	1100	40	100	1300	30	300	0

Table I1. Test 11 SF_6 transport parameters from aircraft continuous analyzer (continued).

	Pass							
	17	18	19	20	21	22	23	24
SF_6 Speed ($m\ s^{-1}$)	0.4	1.6	0.5	1.3	1.6	0.6	0.5	1.5
Error SF_6 Speed ($m\ s^{-1}$)	0.01	0.02	0.00	0.00	0.03	0.00	0.00	0.09
σ_x (m)	410	520	380	450	1250	440	400	1360
Error σ_x (m)	220	350	140	580	720	130	70	530
Peak Detection Time (s)	7870	8000	8730	8840	9160	9290	9590	9730
Error Peak Detection Time (s)	22	22	22	22	22	22	22	25
Peak Concentration (pptv)	390	110	860	1000	2200	670	450	1920
Error Peak Concentration (pptv)	200	70	330	570	940	200	60	570
Altitude (m)	160	150	190	190	140	140	70	60
Downwind Distance (m)	3700	12900	5000	12100	14700	5800	5600	15500
Error Downwind Distance (m)	100	200	80	30	300	0.06	0	0.8

Table I1. Test 11 SF_6 transport parameters from aircraft continuous analyzer (continued).

	Pass							
	25	26	27	28	29	30	31	32
SF_6 Speed ($m\ s^{-1}$)	1.4	0.6	0.5	1.2	1.3	0.5	0.7	0.6
Error SF_6 Speed ($m\ s^{-1}$)	0.08	0.00	0.01	0.01	0.00	0.00	0.10	0.10
σ_x (m)	1210	970	660	1190	1530	690	2810	2590
Error σ_x (m)	940	600	110	460	720	130	1970	1550
Peak Detection Time (s)	10040	10170	10510	10610	10910	11020	11340	11860
Error Peak Detection Time (s)	25	22	22	22	22	22	32	32
Peak Concentration (pptv)	2580	400	460	810	530	690	450	430
Error Peak Concentration (pptv)	2230	170	60	240	180	110	330	300
Altitude (m)	40	50	20	20	40	40	100	170
Downwind Distance (m)	15000	6300	6200	13400	14200	6600	8000	7900
Error Downwind Distance (m)	0.8	0.03	0.1	0.1	0.0	0.03	1.6	1.6