

Supplemental Information for: “Emission Measurements with Gravimetric Impactors and Electrical Devices: An Aerosol Instrument Comparison”, Salo et al.

Table S1: PM10 mass in each particle size range

Sample number	PM10 A Measured mass in each particle size range (μg)				PM10 B Measured mass in each particle size range (μg)			
	> 10 μm	2.5-10 μm	1-2.5 μm	< 1 μm	> 10 μm	2.5-10 μm	1-2.5 μm	< 1 μm
1	440	260	-1570	60	590	250	190	90
2	50	40	200	80	60	50	70	70
3	100	70	180	30	110	10	100	40
4	-10	20	400	20	60	80	-380	30
5	110	1060	160	50	120	4260	100	50
6	70	740	80	30	190	3480	30	10
7	220	420	10130	40	250	310	9940	20
8	50	60	1710	30	60	40	1310	60
9	80	110	5160	50	170	140	5220	20
10	140	170	5460	-10	100	90	5490	30
11	310	360	5730	50	340	400	5950	90
12	120	140	5810	30	70	100	6250	20
13	80	90	3980	40	130	40	4060	40
14	60	140	3240	20	80	100	3300	60
15	60	90	2130	20	40	140	2200	60
16	90	190	8260	40	110	160	8190	20
17	50	90	5570	10	80	160	5400	80
18	30	100	7780	20	-70	140	7690	30

Figure S1: ELPI+ raw and corrected current distributions

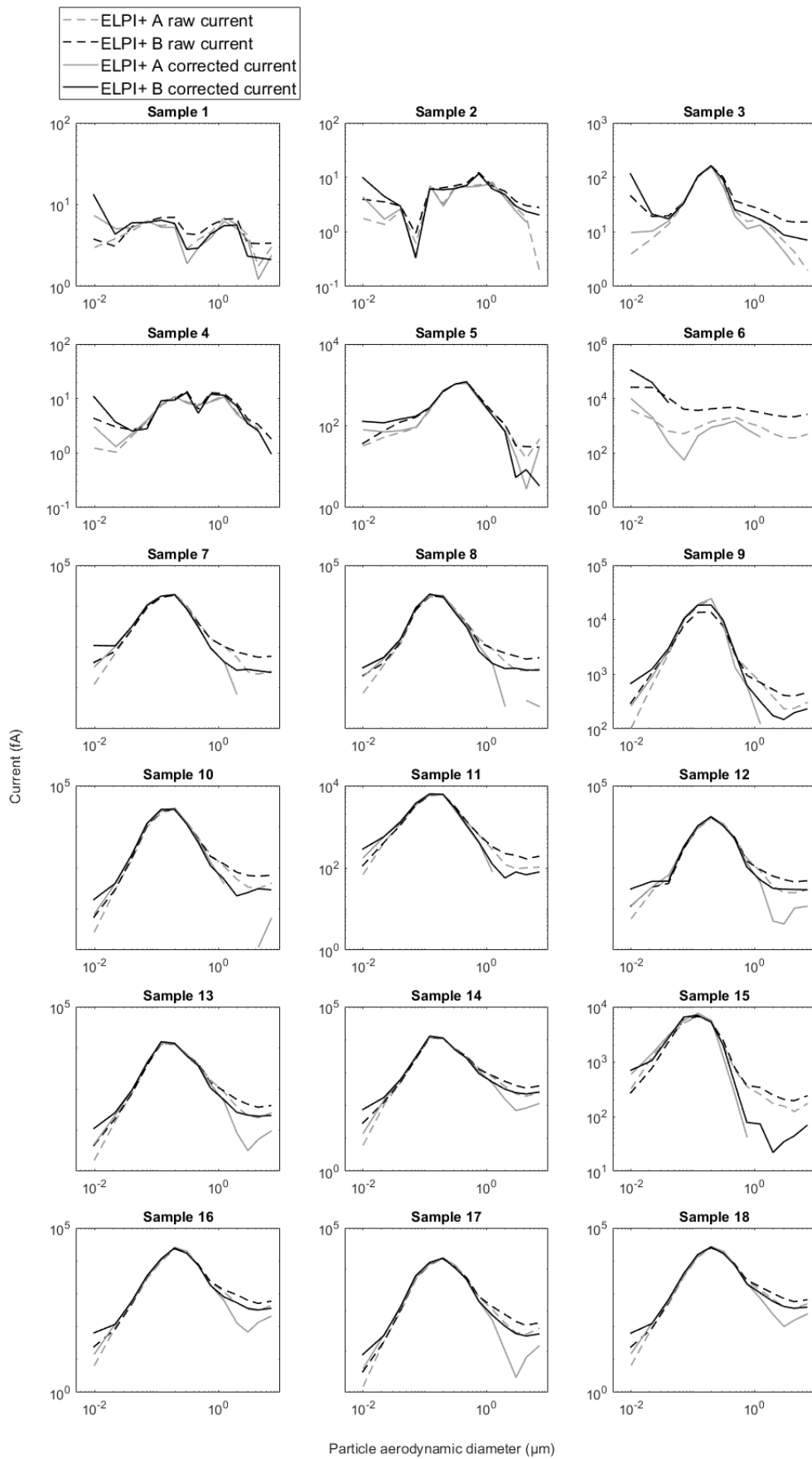


Figure S2: Number distributions for ELPI+ A and B

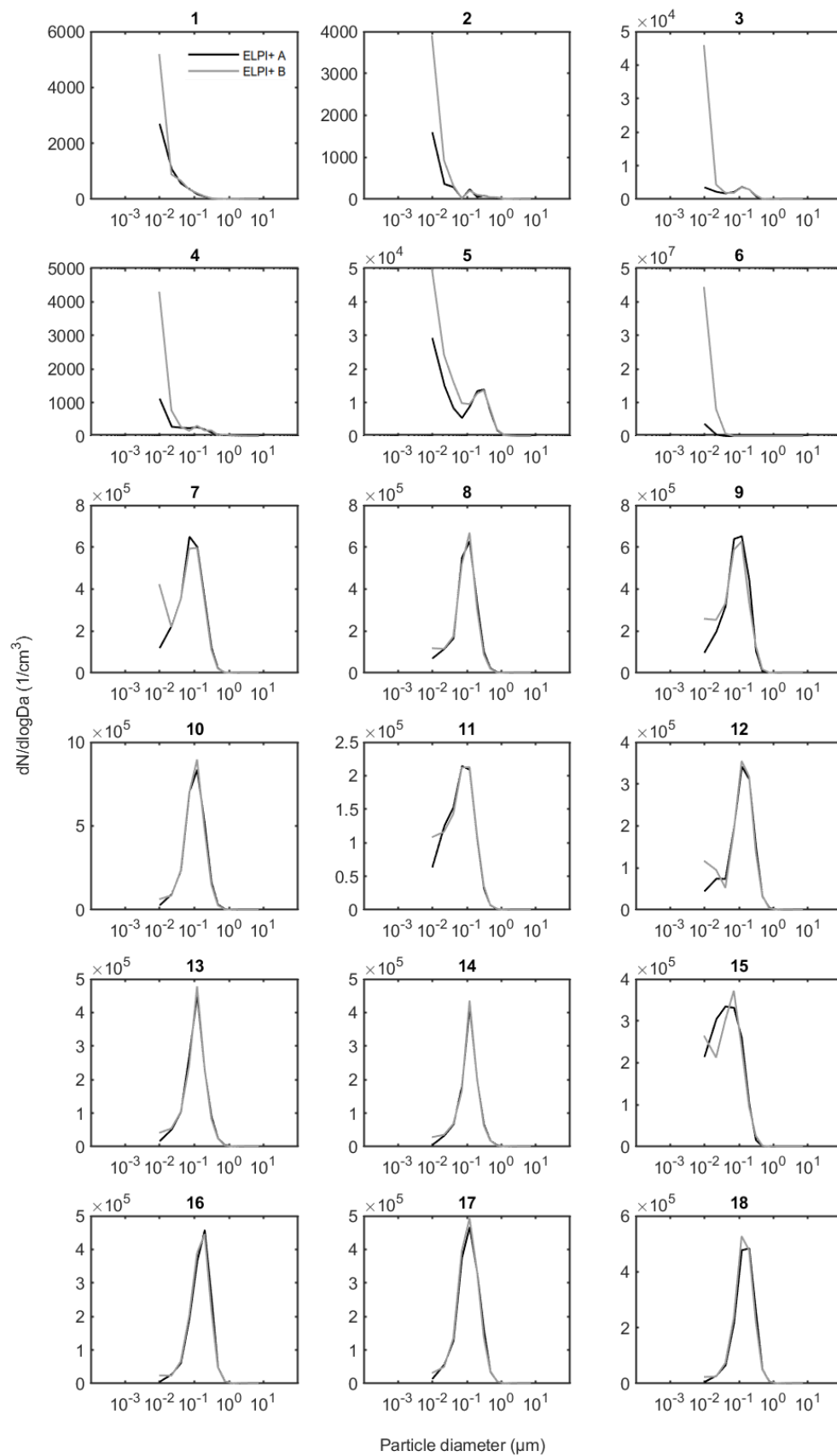


Figure S3: Mass distributions for ELPI+ A and B

Mass distributions, mass from stages with less than 2.5 % of the total current discounted

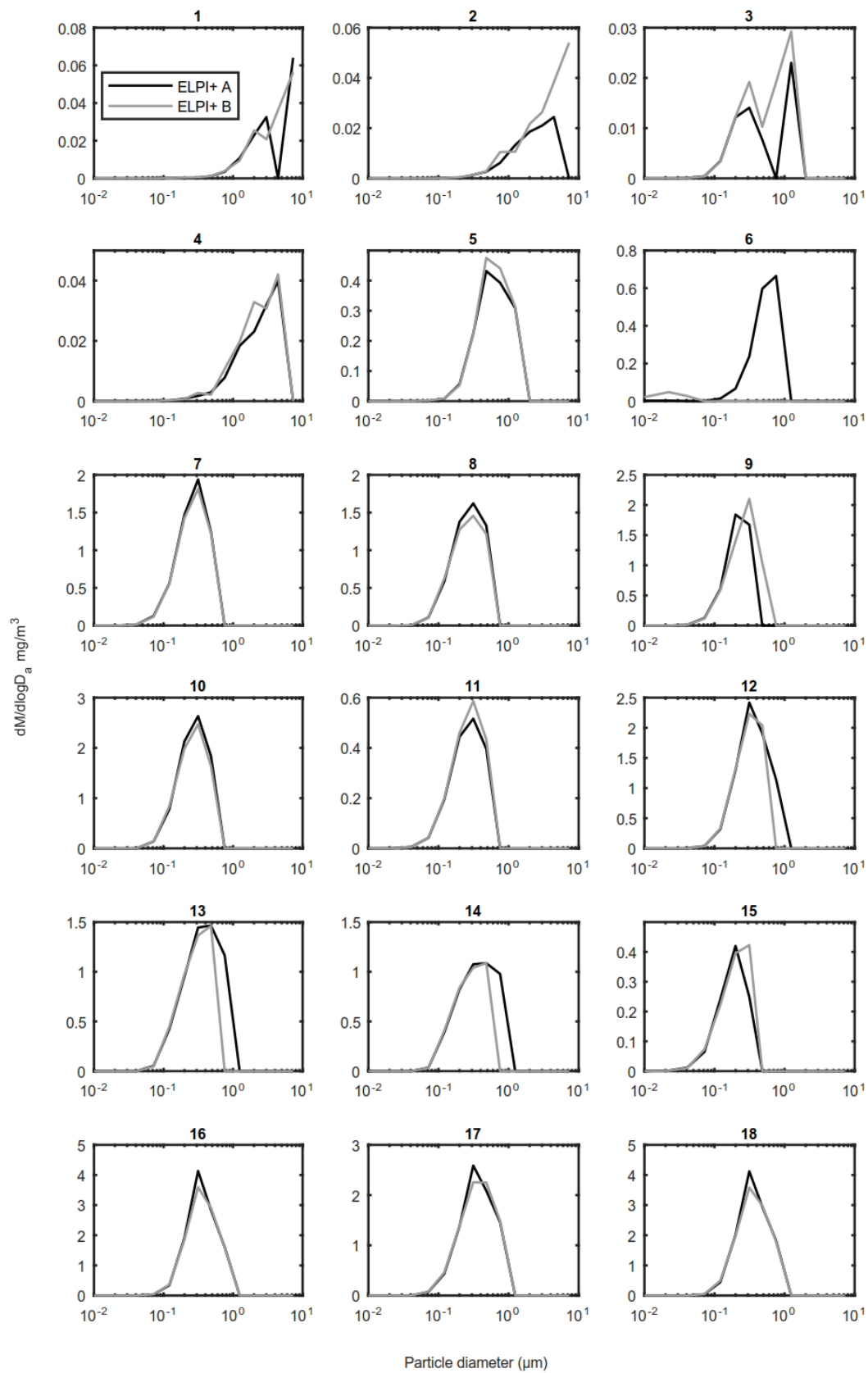


Figure S4: Current data for ELPI+ A and B and eFilter

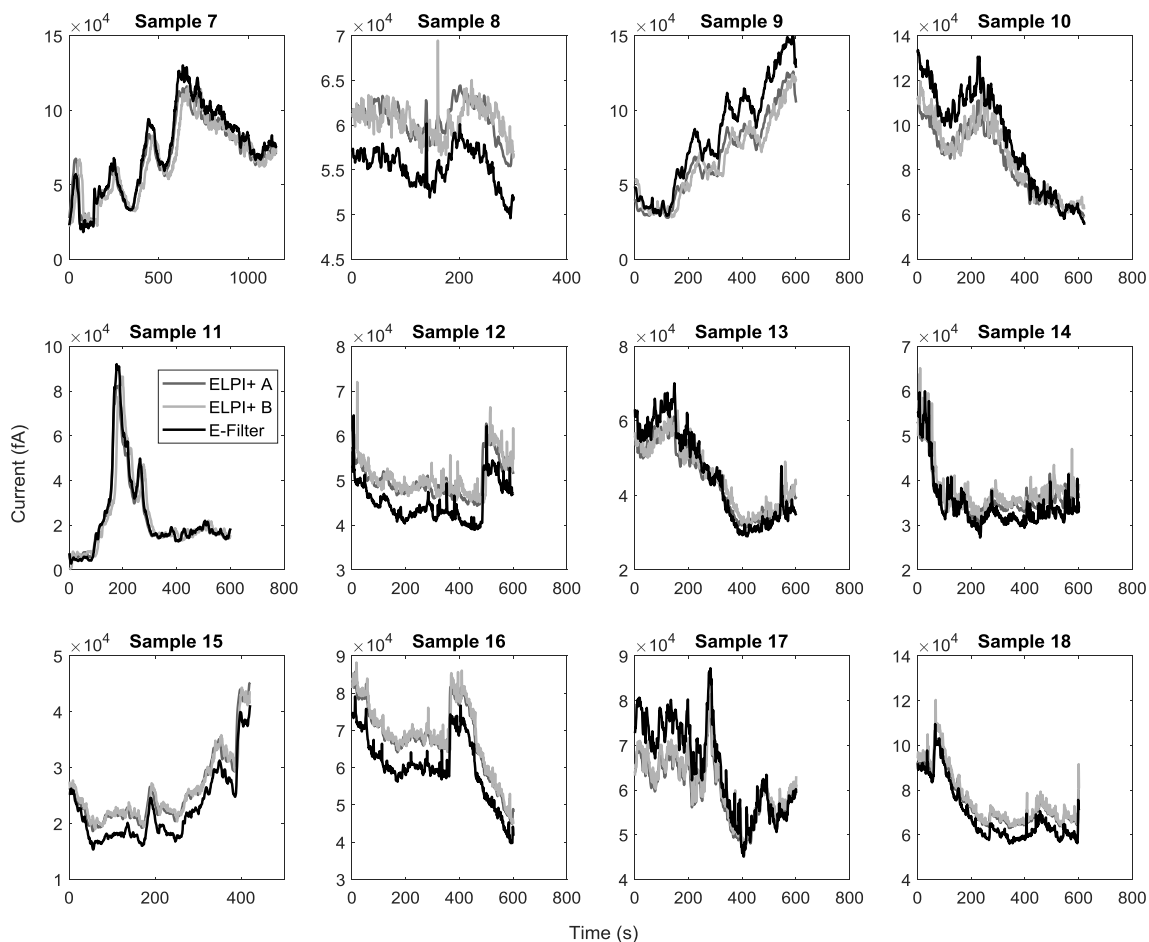


Figure S5: ELPI+ A and SMPS number distributions

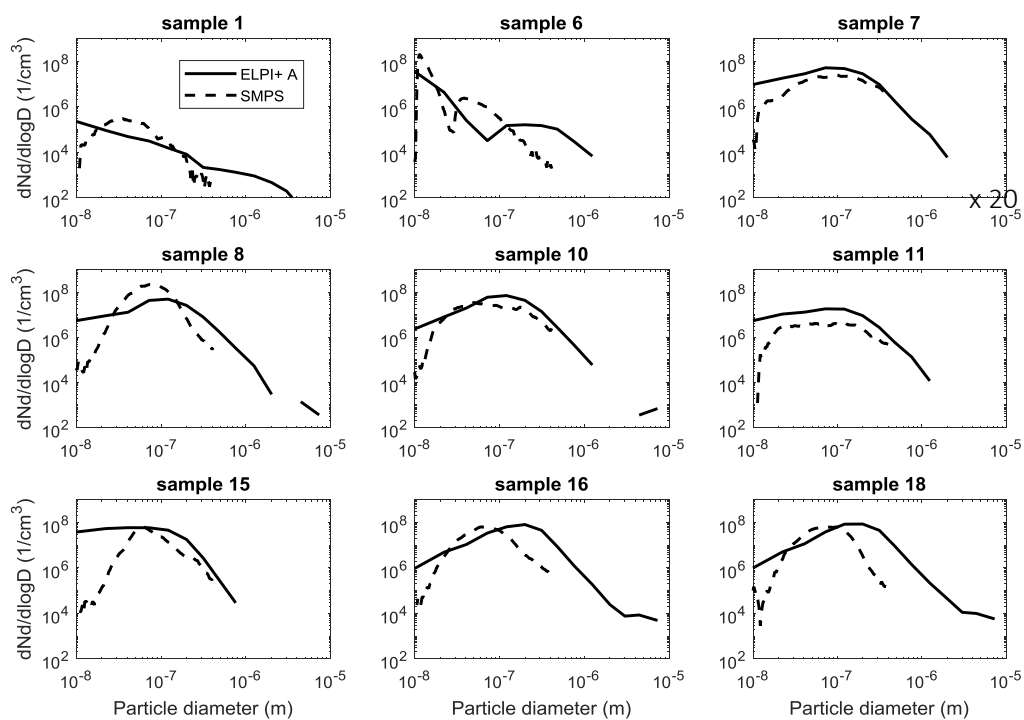


Figure S6: ELPI+ A (dashed line) and SMPS (solid line) mass distributions

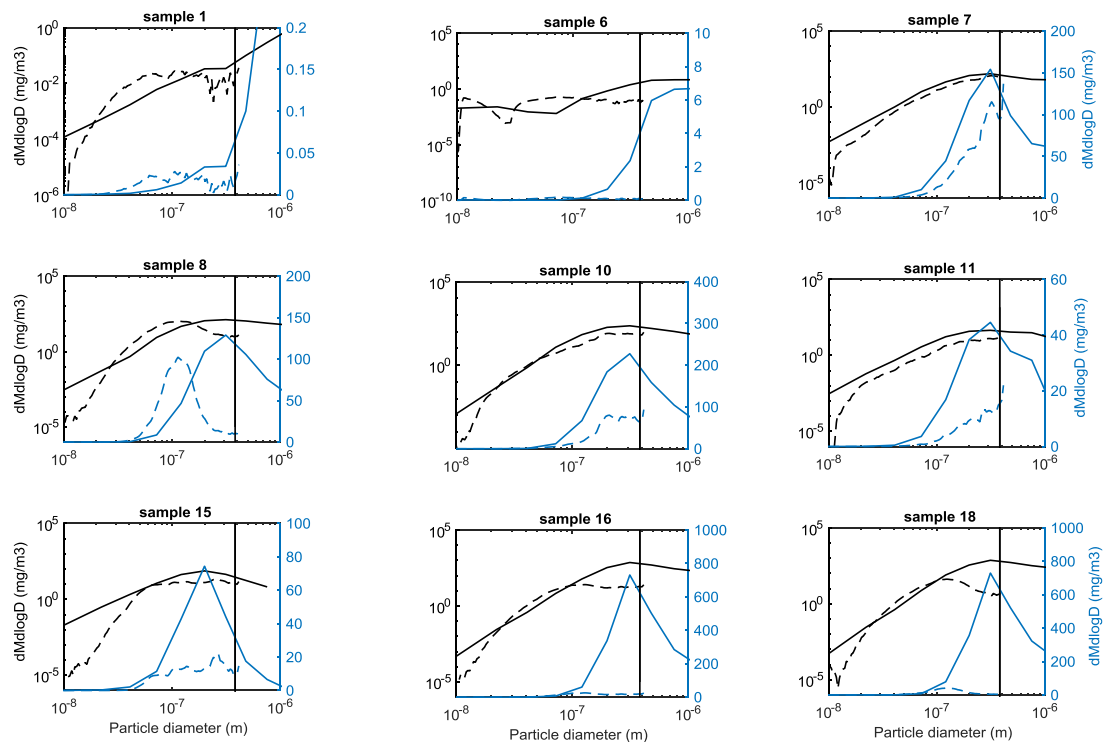


Table S2: ELPI+ results for mass concentration compared to SMPS results

Fuel type	Sample	SMPS mass concentration mg/m ³	ELPI+ A mass up to stage 7 (upper dp50 383 nm) mg/m ³
oil shale	1	0.019	0.0183
oil shale	6	0.1423	0.6052
wood	7	20.86175	64.5955
wood	8	20.8413	58.5081
wood	10	18.616	97.2185
wood + waste	11	3.06265	20.7449
wood + soot cleaner	15	5.67085	36.4785
wood + soot cleaner	16	8.13085	215.4268
wood + soot cleaner	18	8.13965	223.2899

Table S3: Densities calculated from comparing SMPS and ELPI+ distributions

The densities are calculated from times when the distributions were relatively steady (in order to improve SMPS data), and do not match the sample times in the study.

Sample #	Date	Time (start)	Time (end)	density calculated (g/cm ³)
7	17-Jan-2017	10:45:08	10:50:39	1.23
beginning from 8	17-Jan-2017	12:05:08	12:21:41	1.59
	17-Jan-2017	11:40:18	11:48:35	1.77
	17-Jan-2017	16:46:33	16:54:49	2.51
	18-Jan-2017	9:30:48	9:39:04	0.72
	18-Jan-2017	10:23:13	10:28:44	3.41
	18-Jan-2017	10:34:15	10:39:46	2.43
11	18-Jan-2017	12:13:34	12:24:37	0.72
	18-Jan-2017	12:27:22	12:35:39	2.79
	18-Jan-2017	13:28:04	13:36:21	2.33
	18-Jan-2017	13:41:52	13:55:39	2.80
	18-Jan-2017	16:13:36	16:24:38	2.31
beginning from 15	19-Jan-2017	9:39:14	9:55:47	1.74
16	19-Jan-2017	10:56:29	11:04:46	3.87
	19-Jan-2017	11:07:31	11:21:19	2.76
18	19-Jan-2017	14:34:26	14:48:14	3.01

Table S4: Conversion factors used to determine the time-resolved mass from eFilter

Sample number	Conversion factor A $\left(\frac{\text{mg}}{\text{m}^3} \times \frac{1}{f_A}\right)$
7	4.08E-08
8	4.08E-08
9	3.94E-08
10	3.90E-08
11	4.94E-08
12	4.94E-08
13	4.32E-08
14	4.32E-08
15	5.95E-08
16	5.95E-08
17	5.00E-08

Figure S7: Relative difference in mass results from the PM10 cascade impactors, depending on the measured mass

