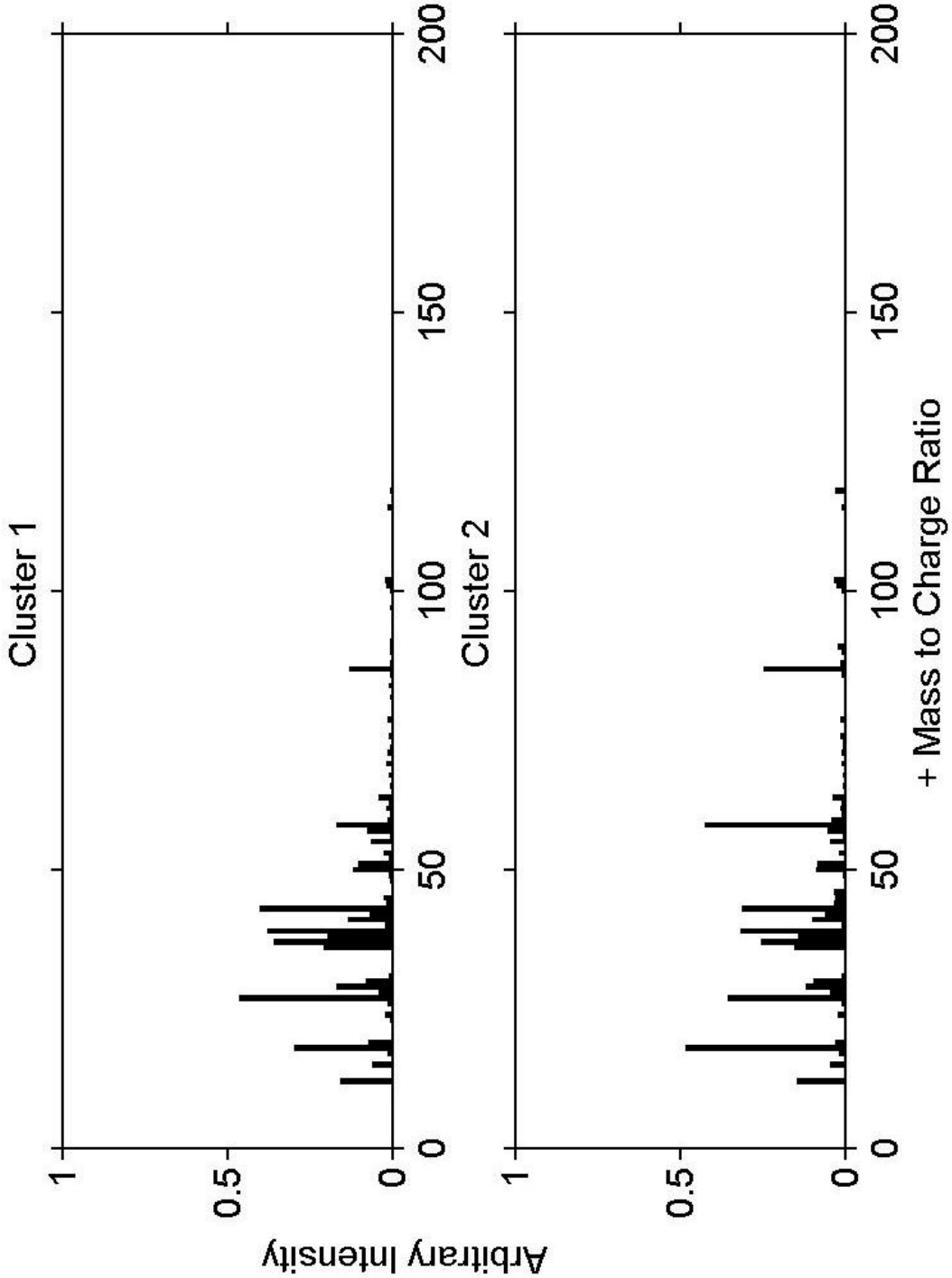
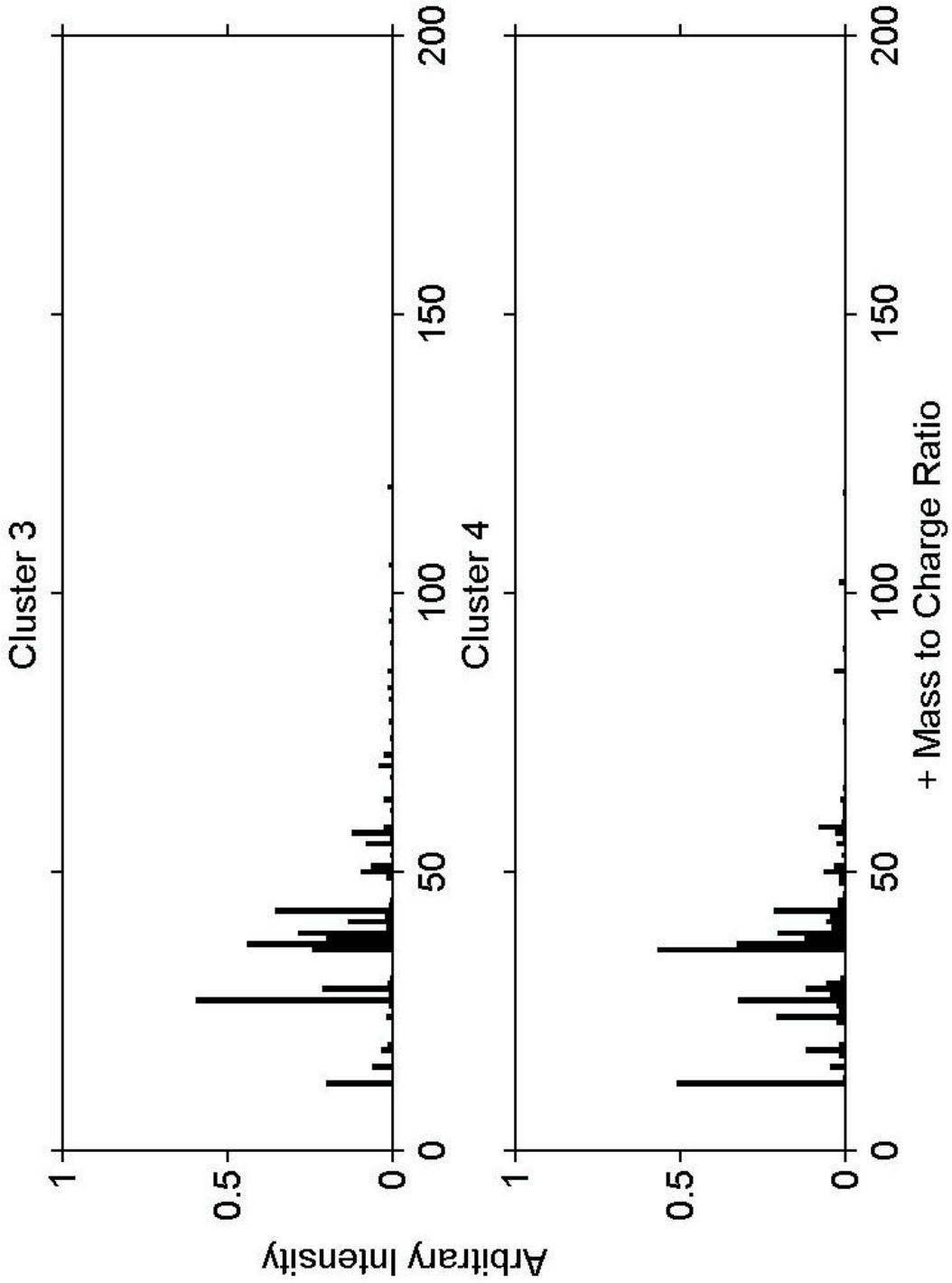
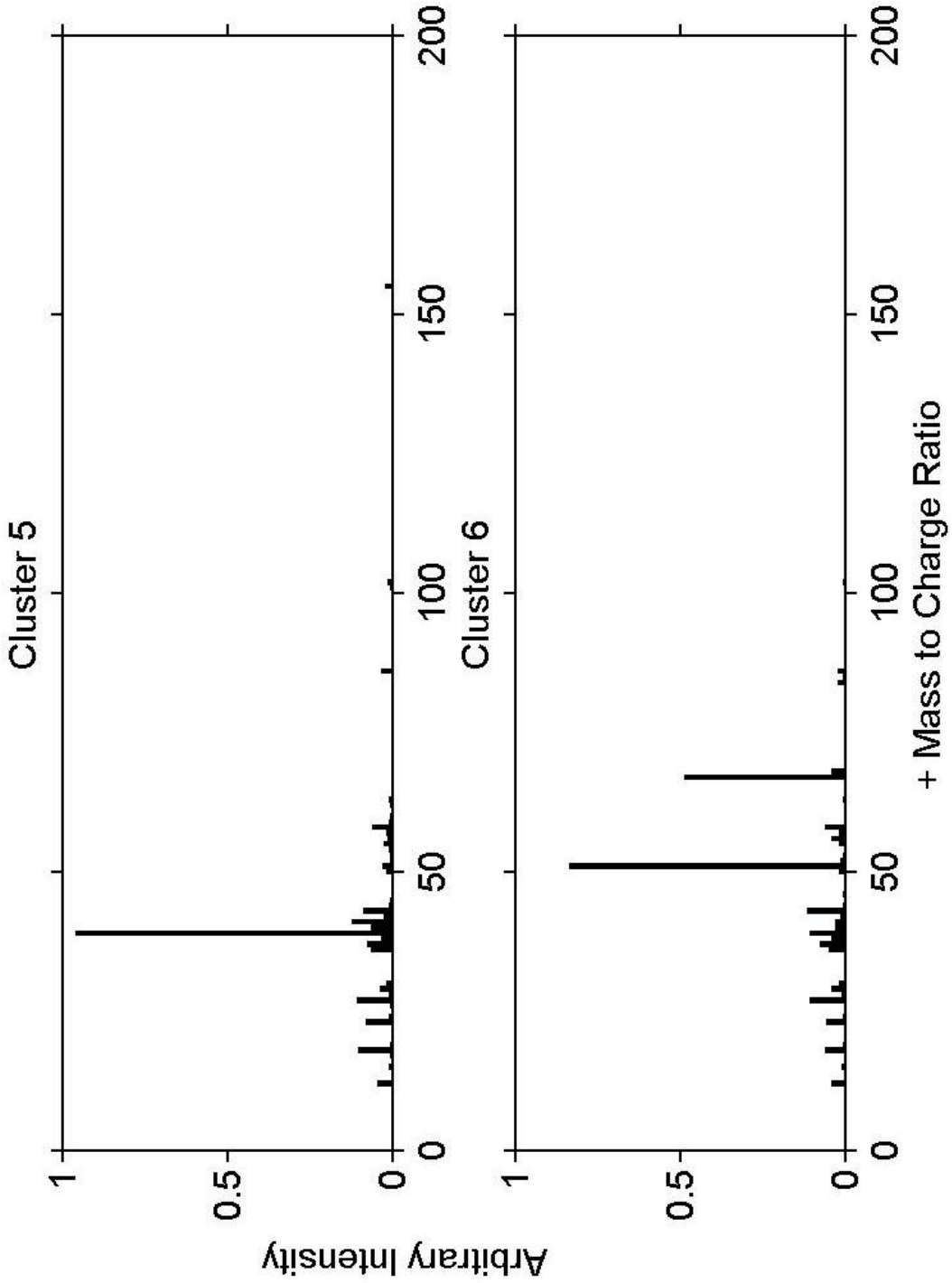
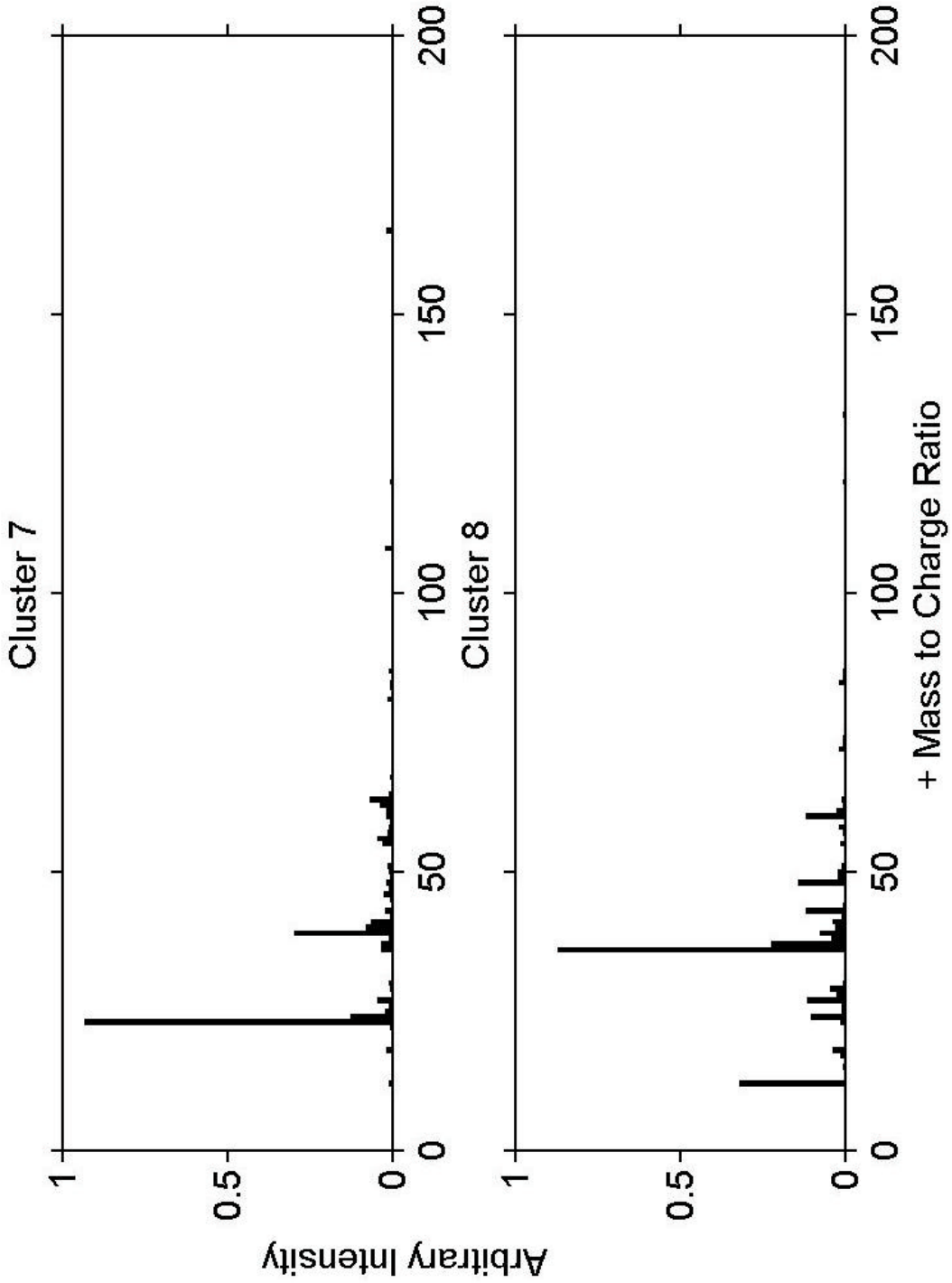
Appendix J: ART-2a positive-ion weight vectors for car vehicle dynamometer: mass-to-charge ratio and normalized intensity (vigilance factor = 0.5; 14 clusters).

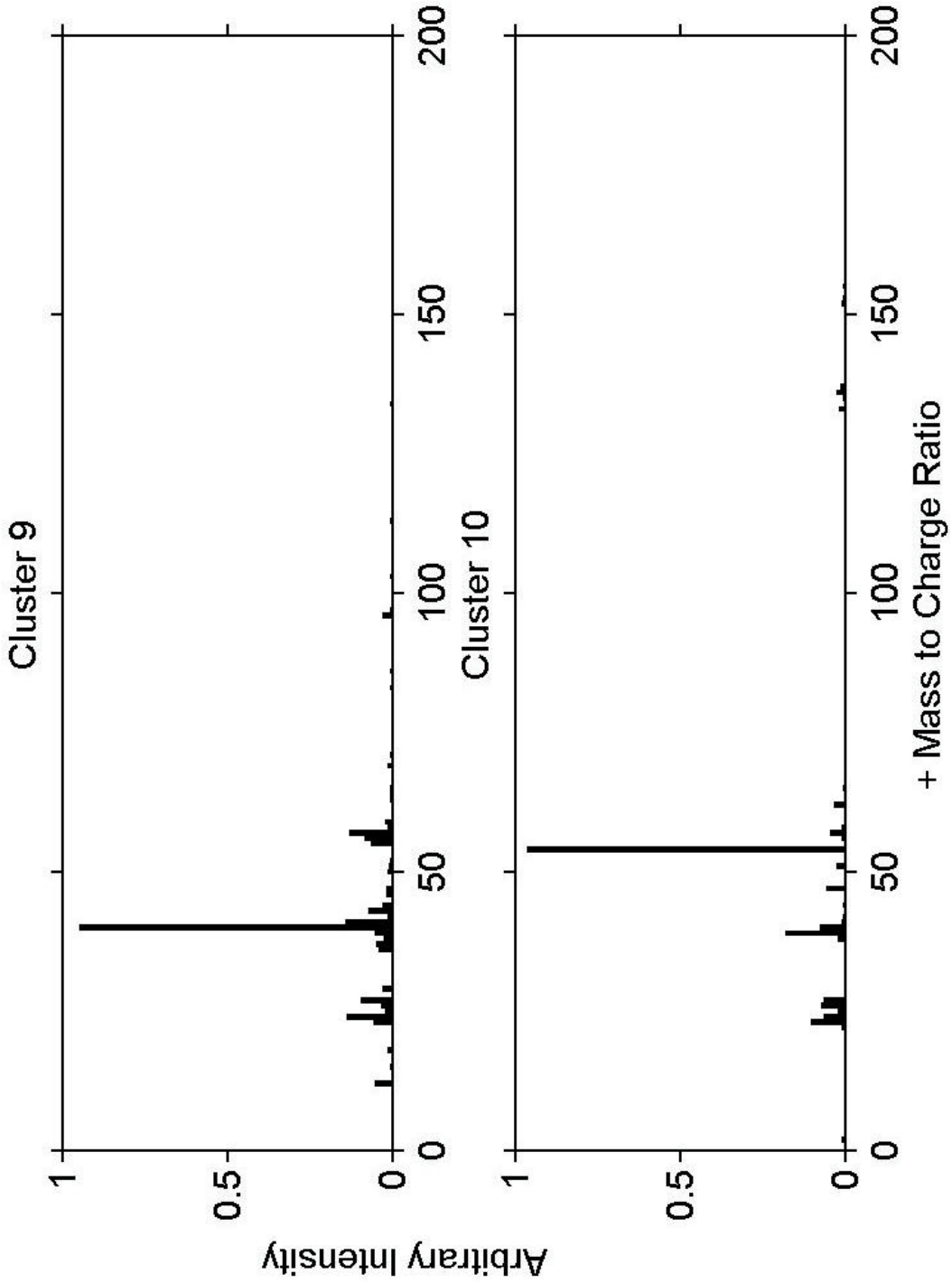
Class #	Number of particles in the class Car	Number of particles matched to the class Azusa
1	335	636
2	147	574
3	134	607
4	102	559
5	93	378
6	90	91
7	82	746
8	48	277
9	35	126
10	18	13
11	17	56
12	12	1
13	11	12
14	10	235

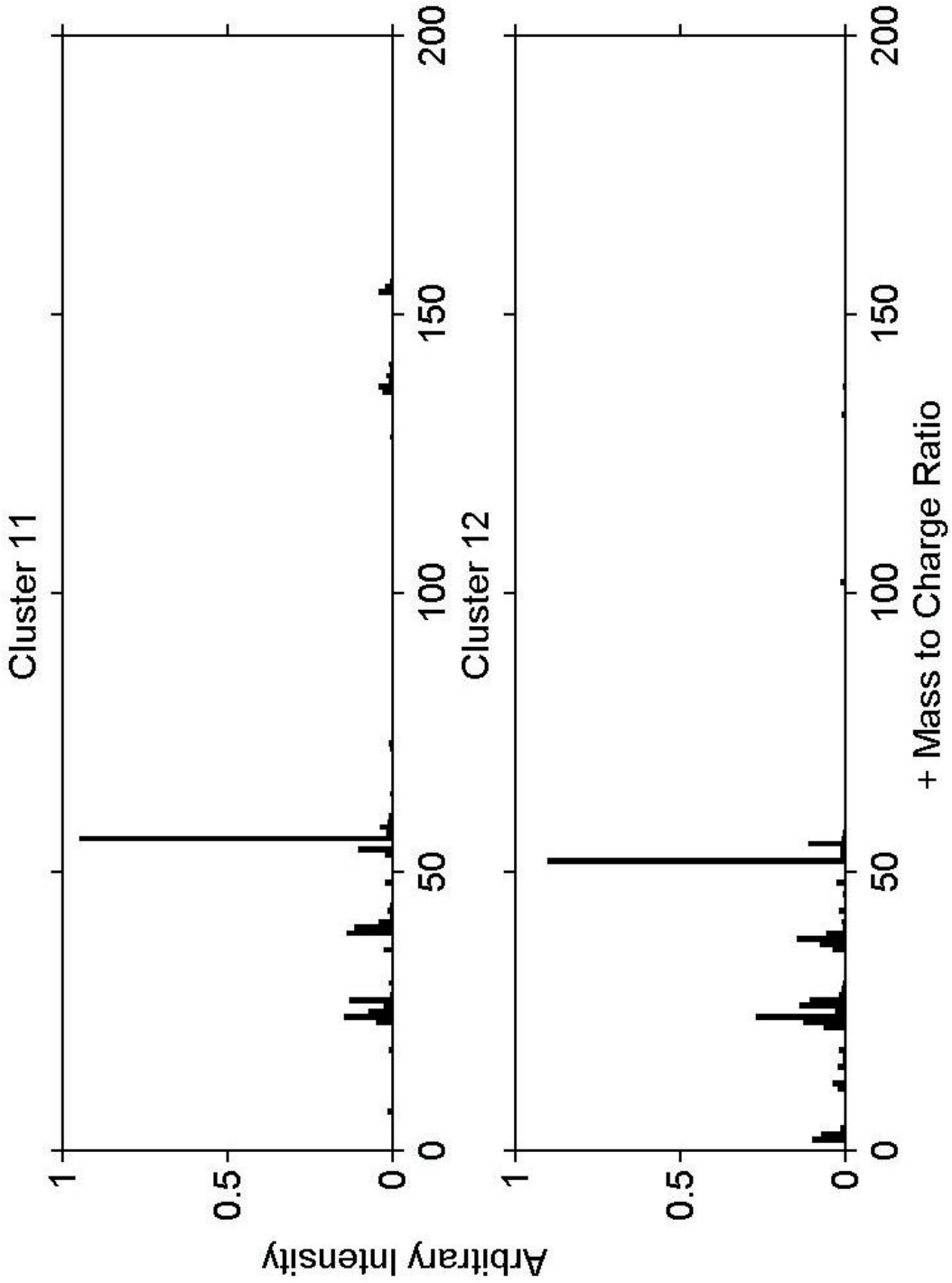

Cluster 1
Cluster 2
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200

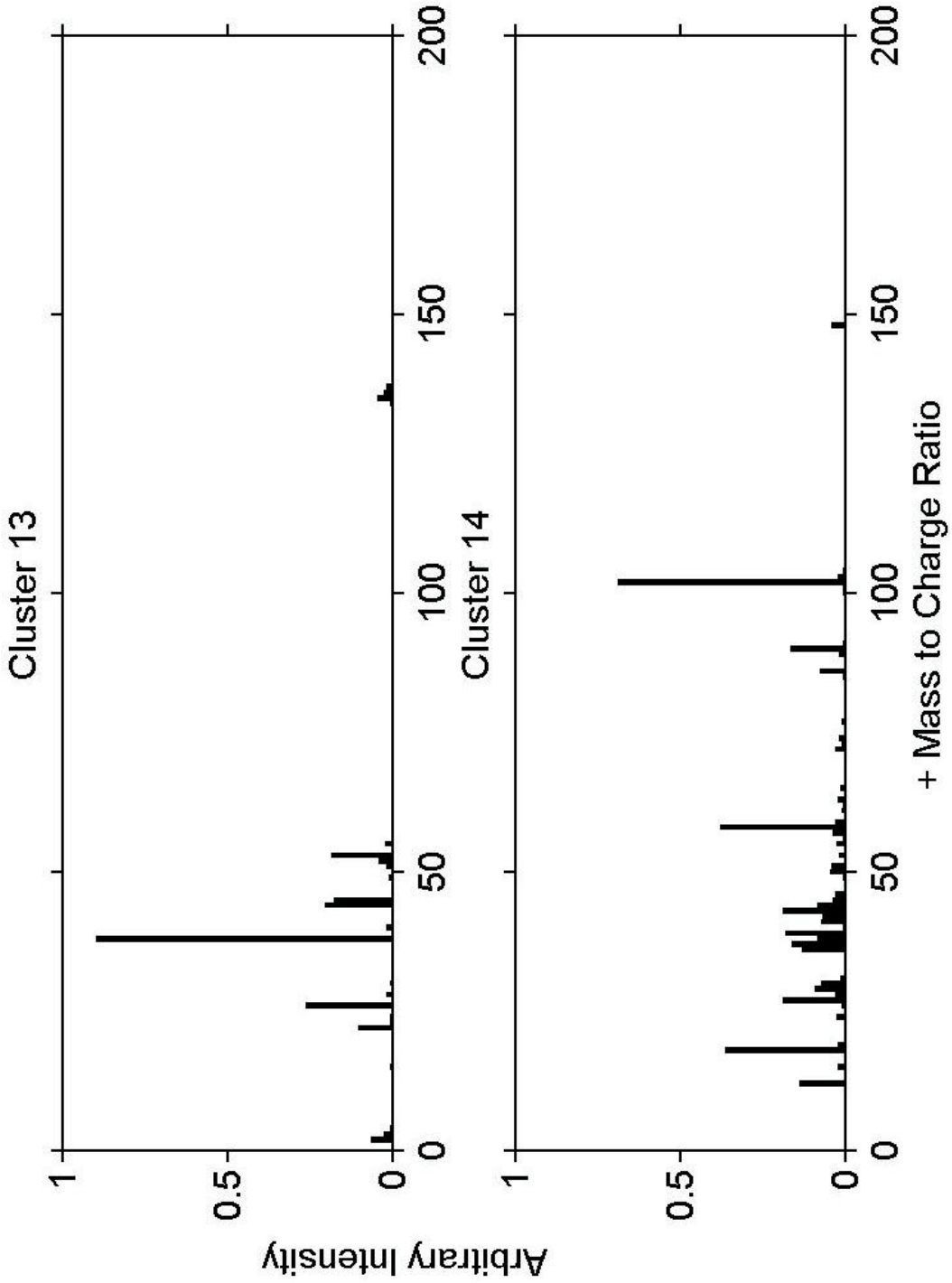

Cluster 3
Cluster 4
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200


Cluster 5
Cluster 6
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200


Cluster 7
Cluster 8
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200

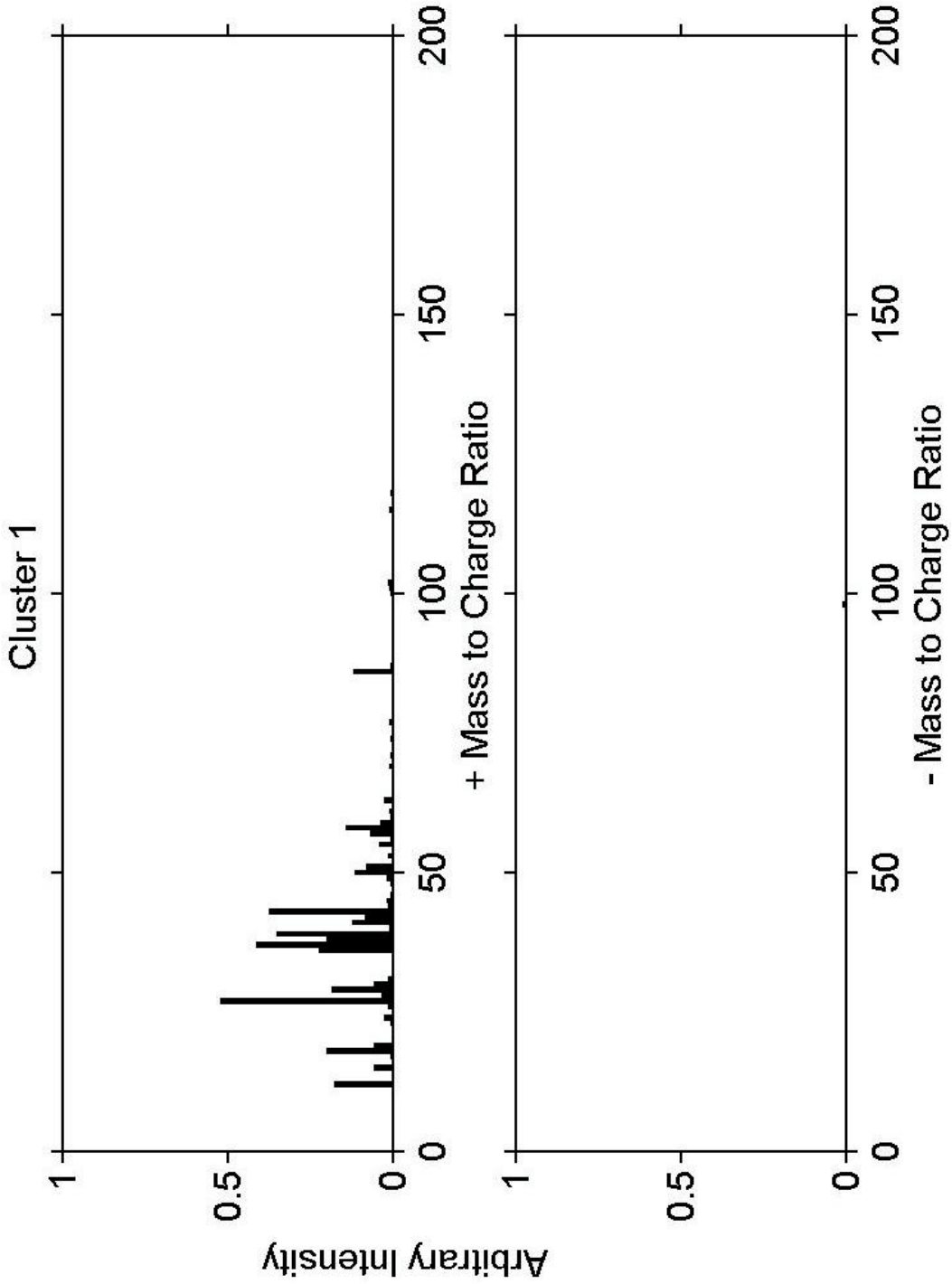

Cluster 9
Cluster 10
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200

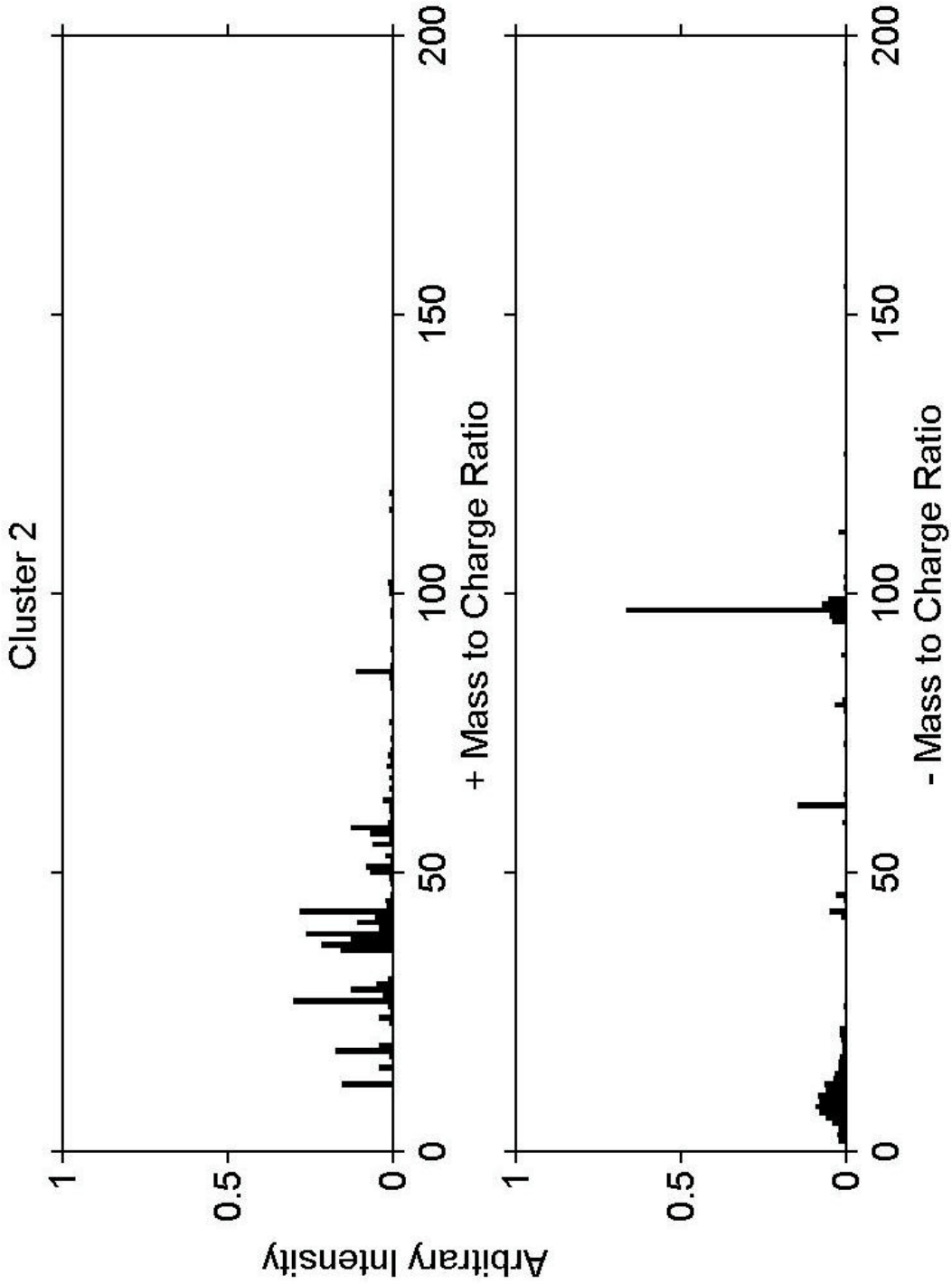

Cluster 11
Cluster 12
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200

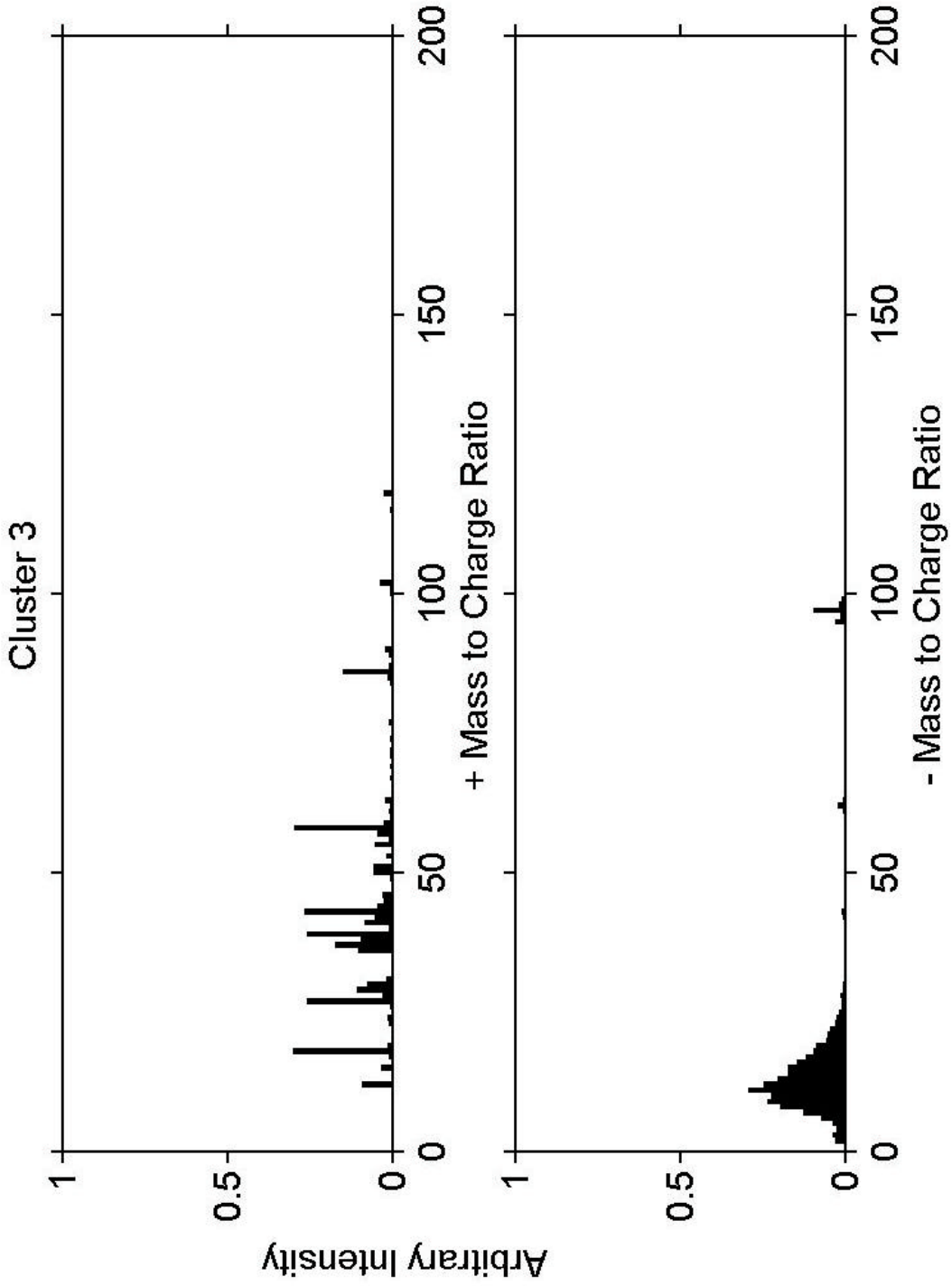

Cluster 13
Cluster 14
Arbitrary Intensity
+ Mass to Charge Ratio
0
0.5
1
0
50
100
150
200

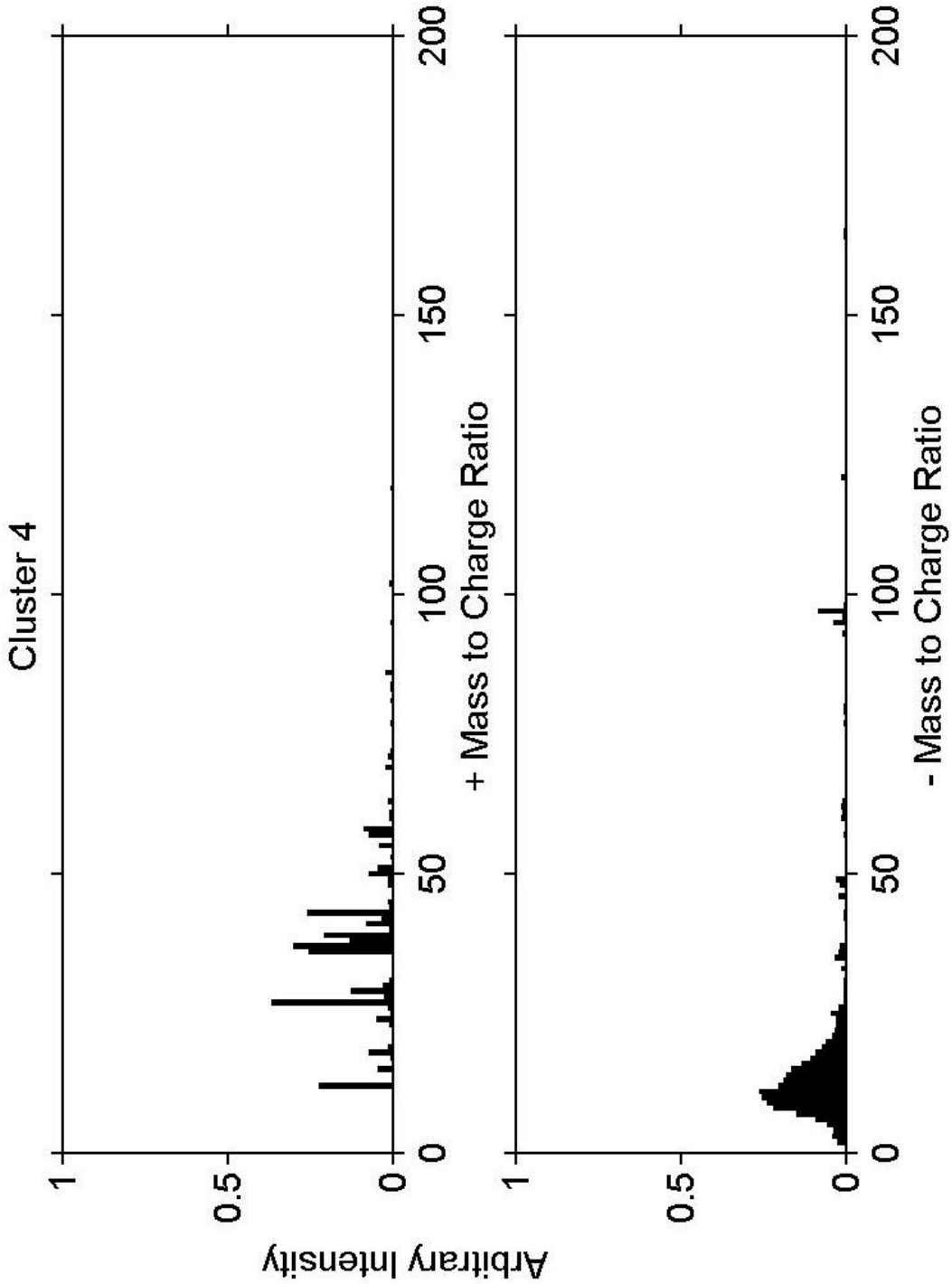
Appendix K: ART-2a dual-ion weight vectors for car vehicle dynamometer: mass-to-charge ratio and normalized intensity (vigilance factor = 0.5; 22 clusters)

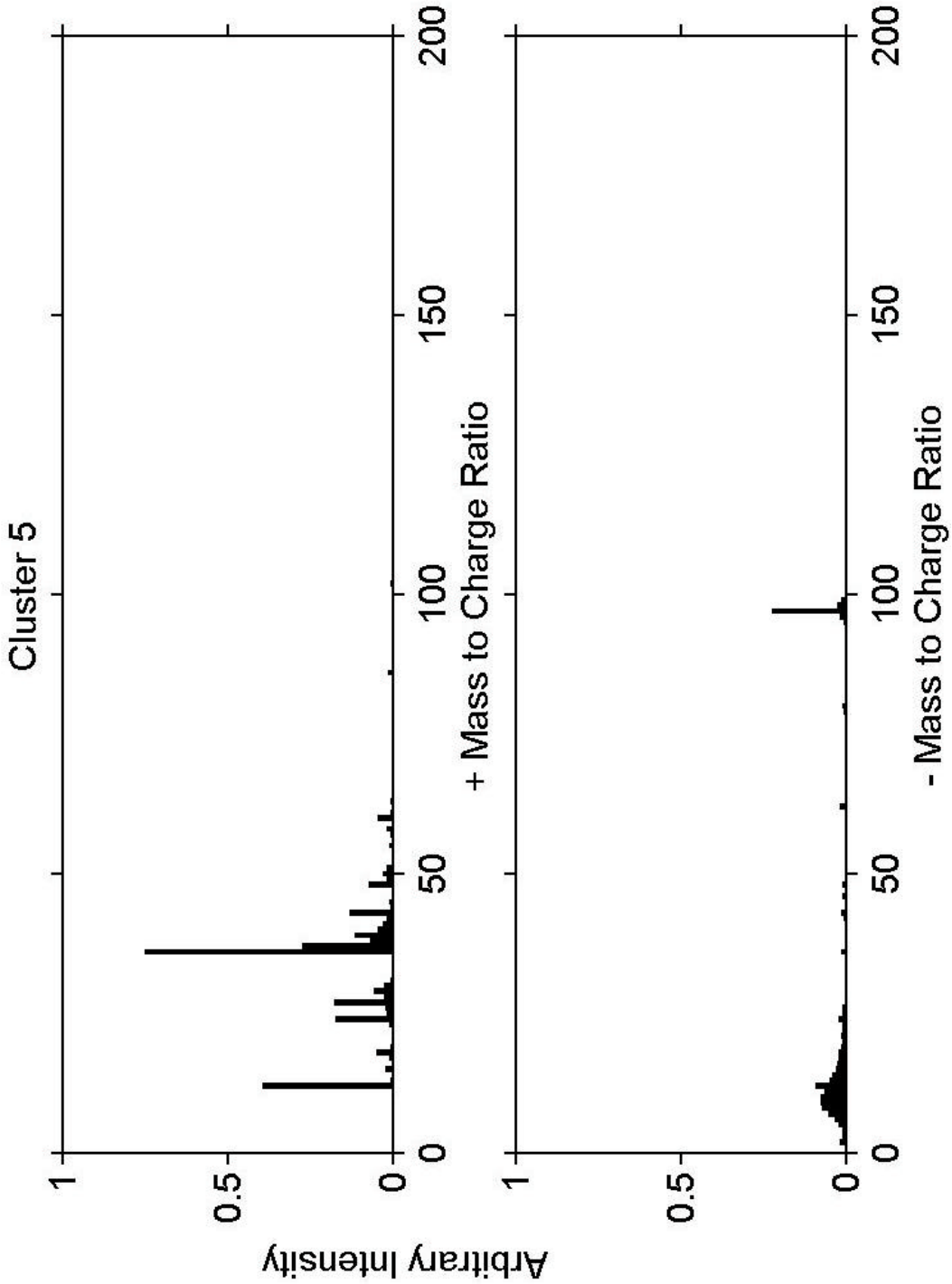
Class #	Number of particles in the class Cars	Number of particles matched to the class Azusa
1	195	562
2	158	412
3	115	284
4	115	379
5	86	286
6	86	65
7	67	151
8	62	443
9	57	691
10	42	0
11	30	102
12	24	107
13	21	438
14	21	49
15	21	657
16	20	28
17	19	54
18	18	10
19	11	139
20	11	107
21	10	9
22	10	1

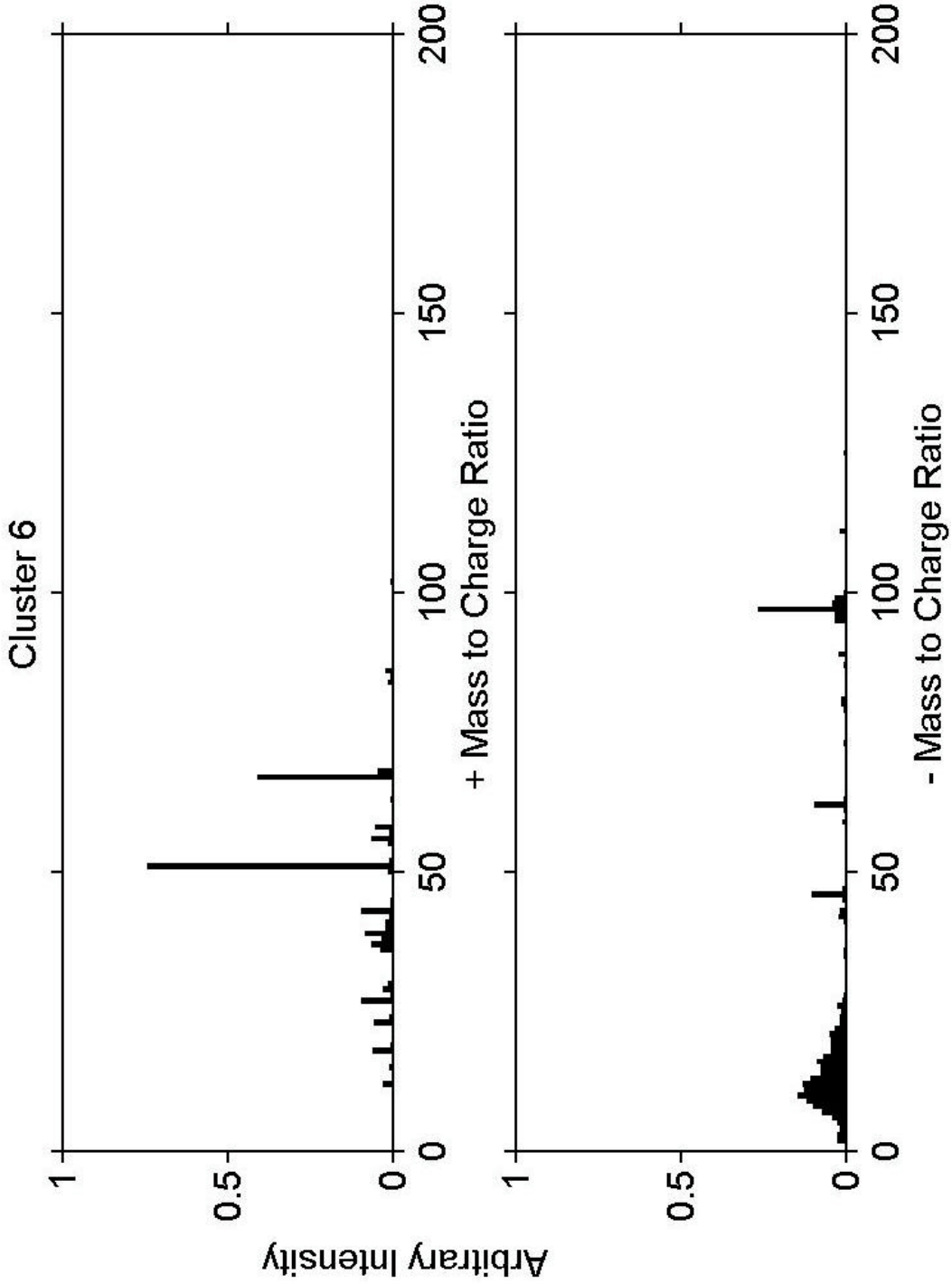

Cluster 1
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

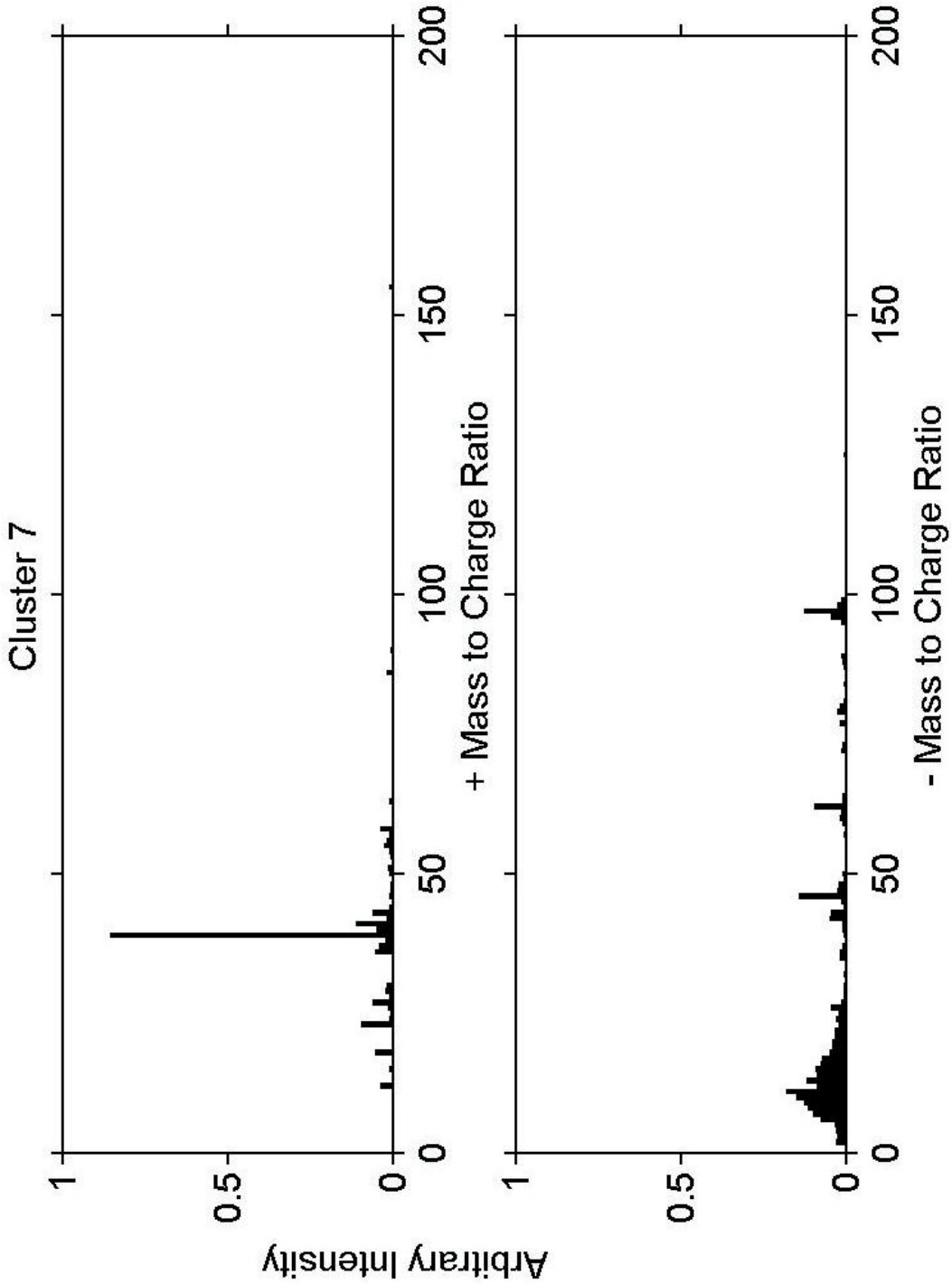

Cluster 2
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

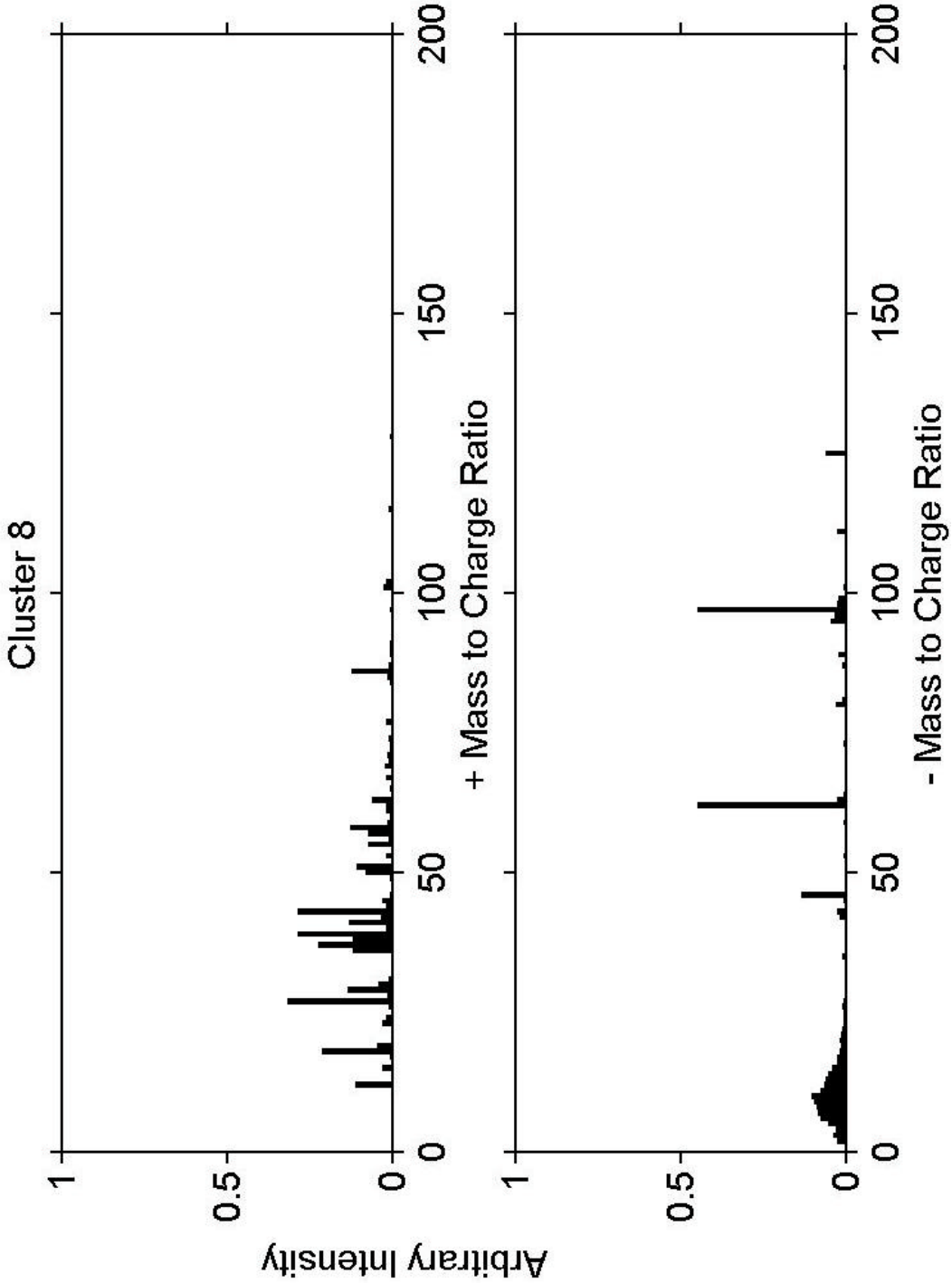

Cluster 3
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

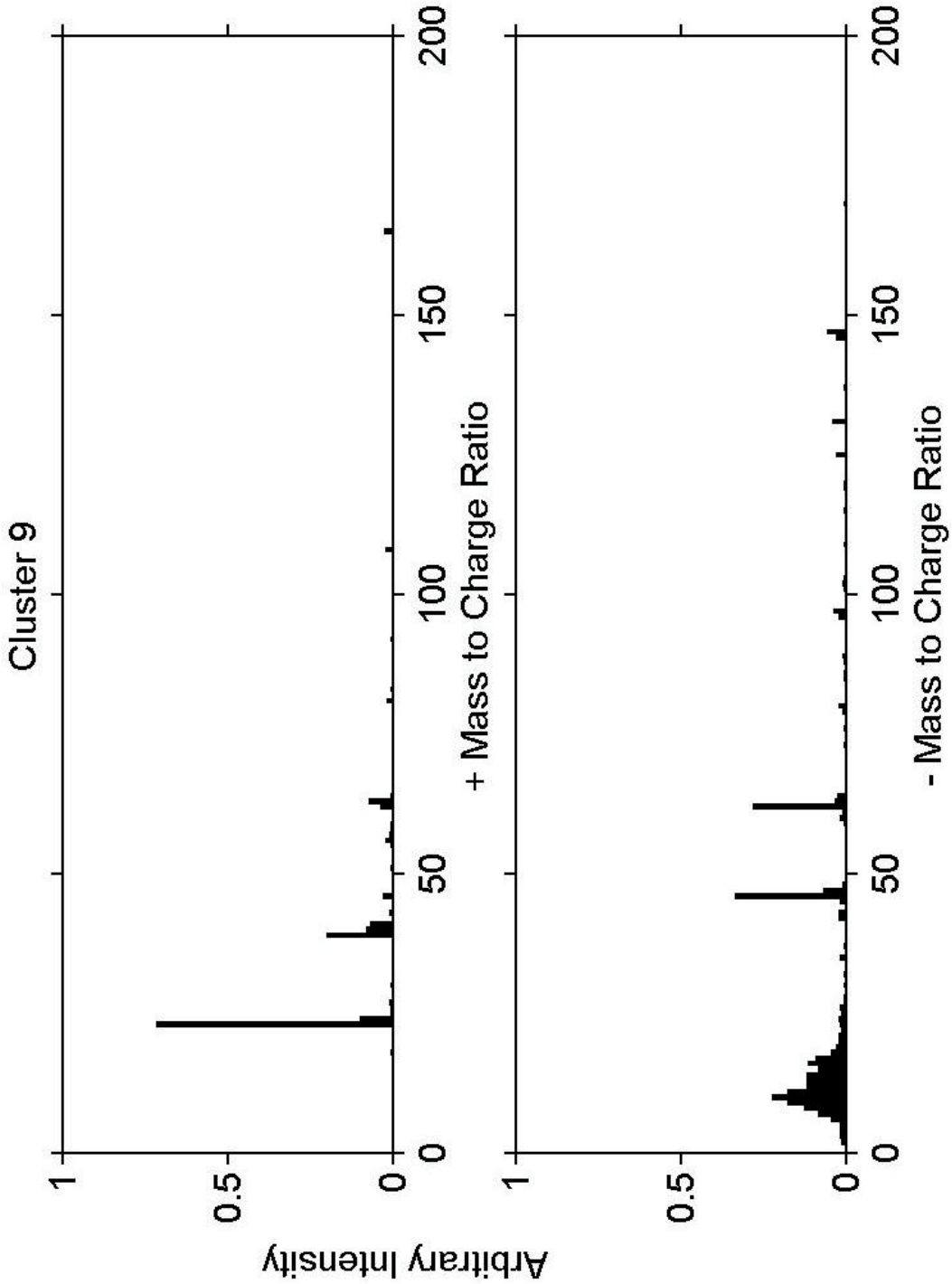

Cluster 4
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

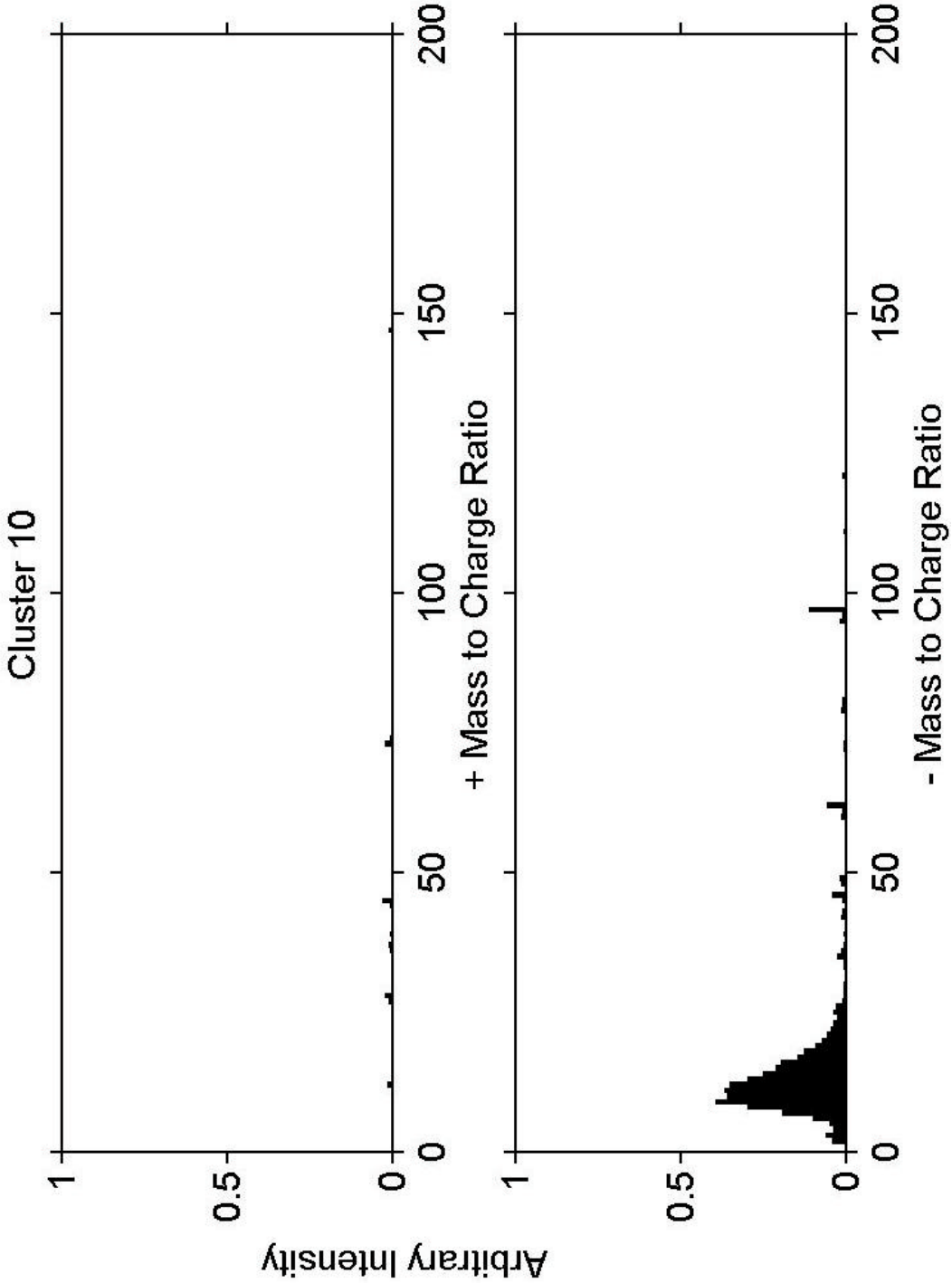

Cluster 5
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

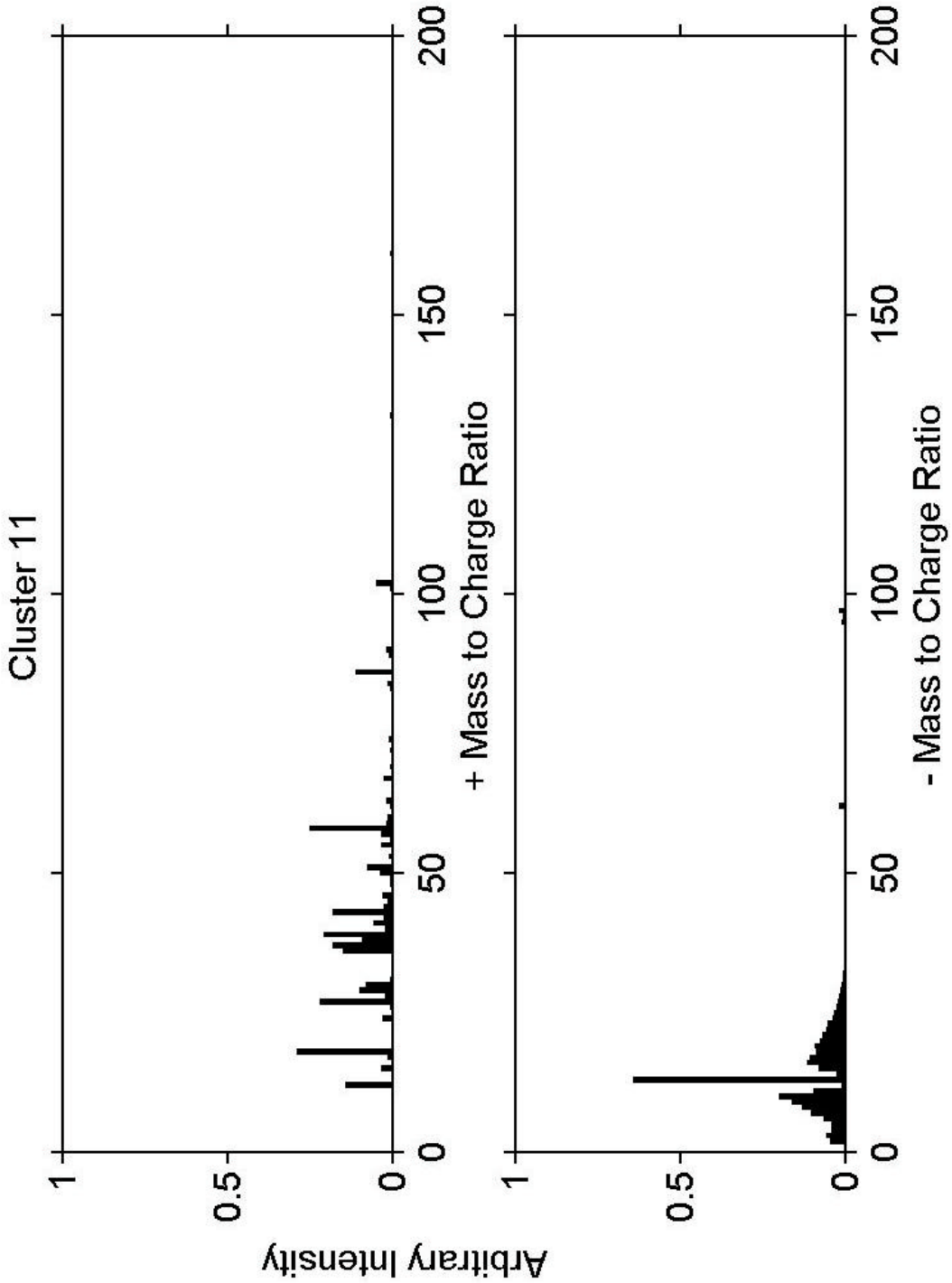

Cluster 6
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

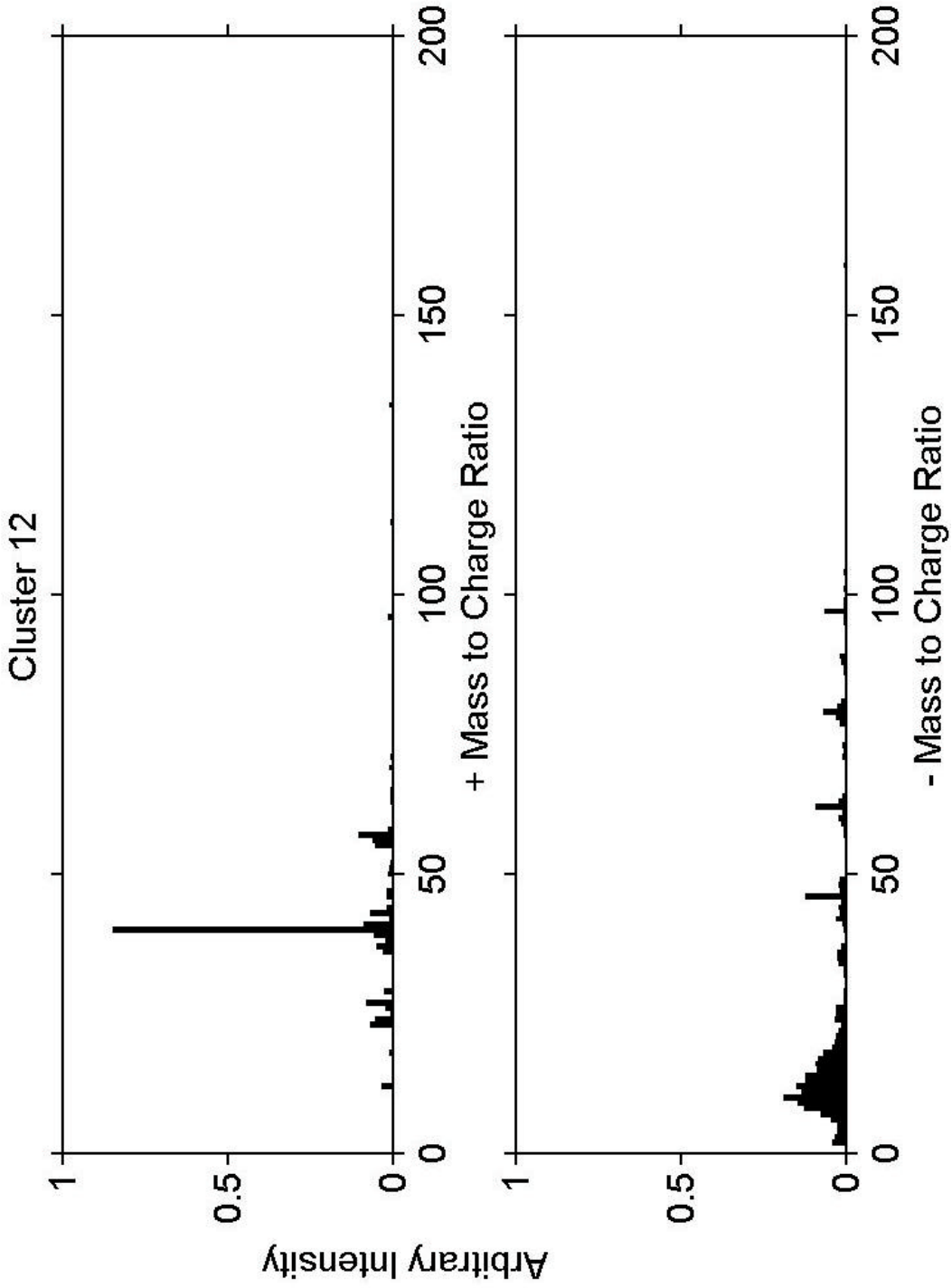

Cluster 7
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

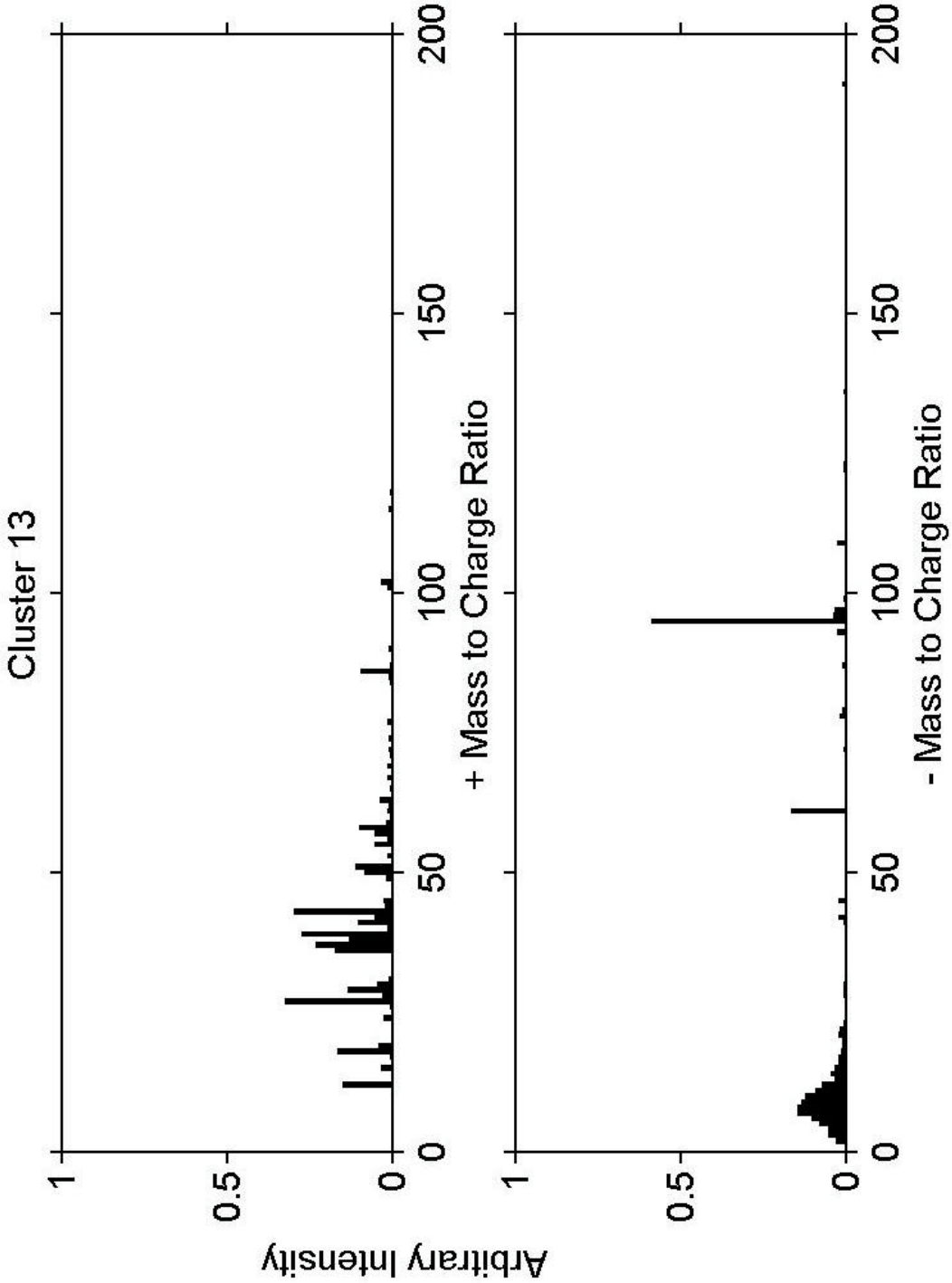

Cluster 8
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

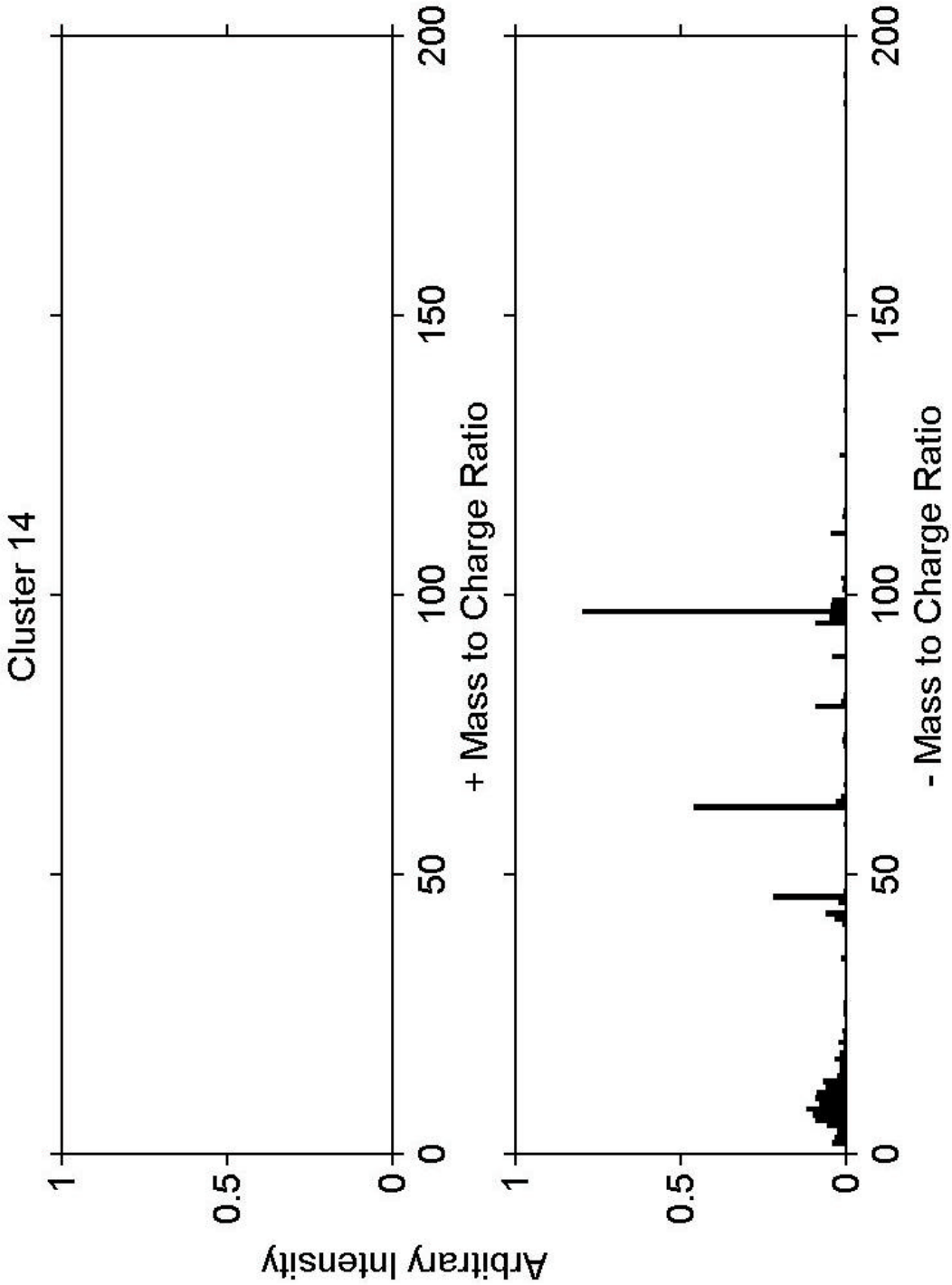

Cluster 9
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

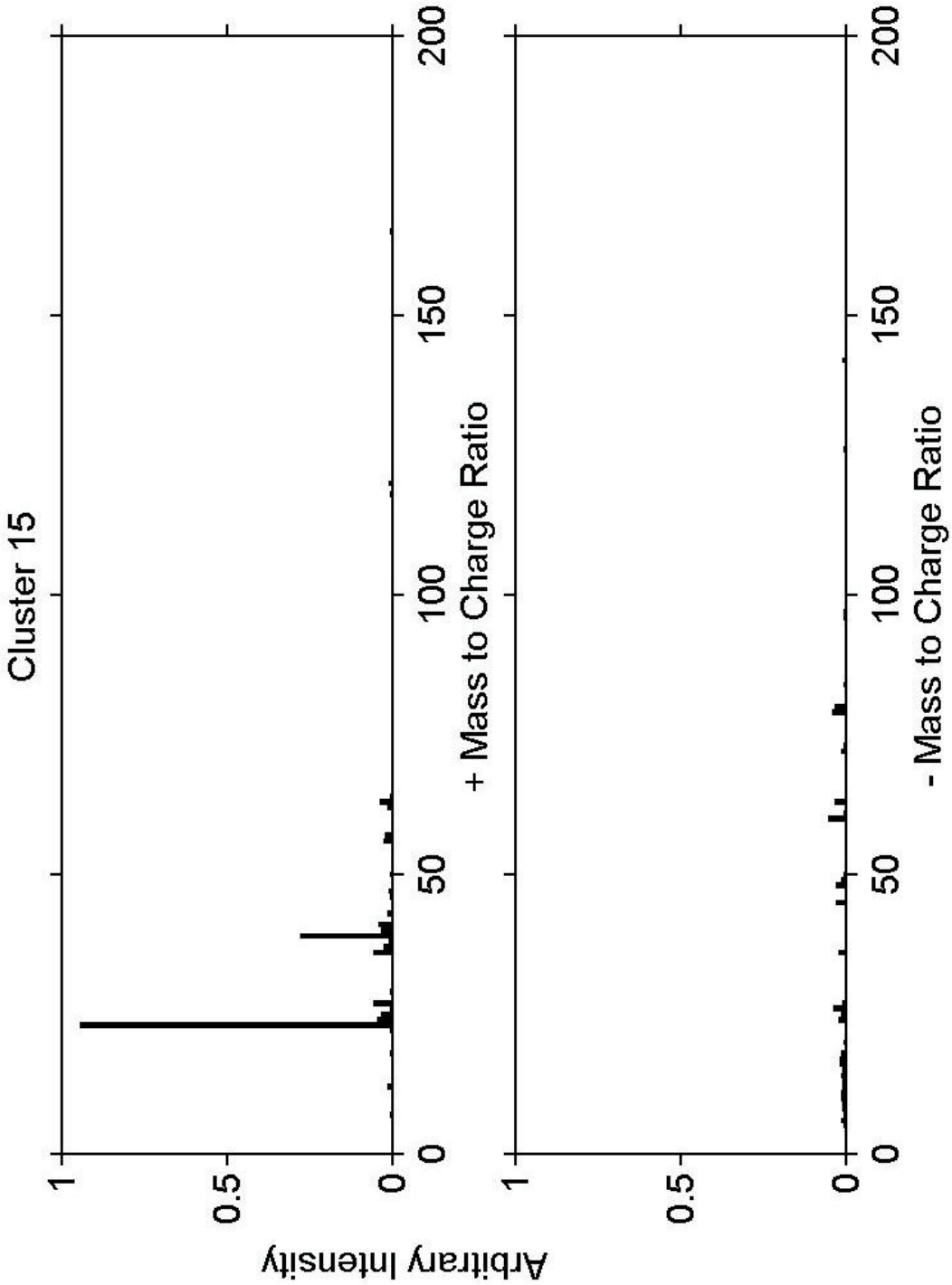

Cluster 10
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

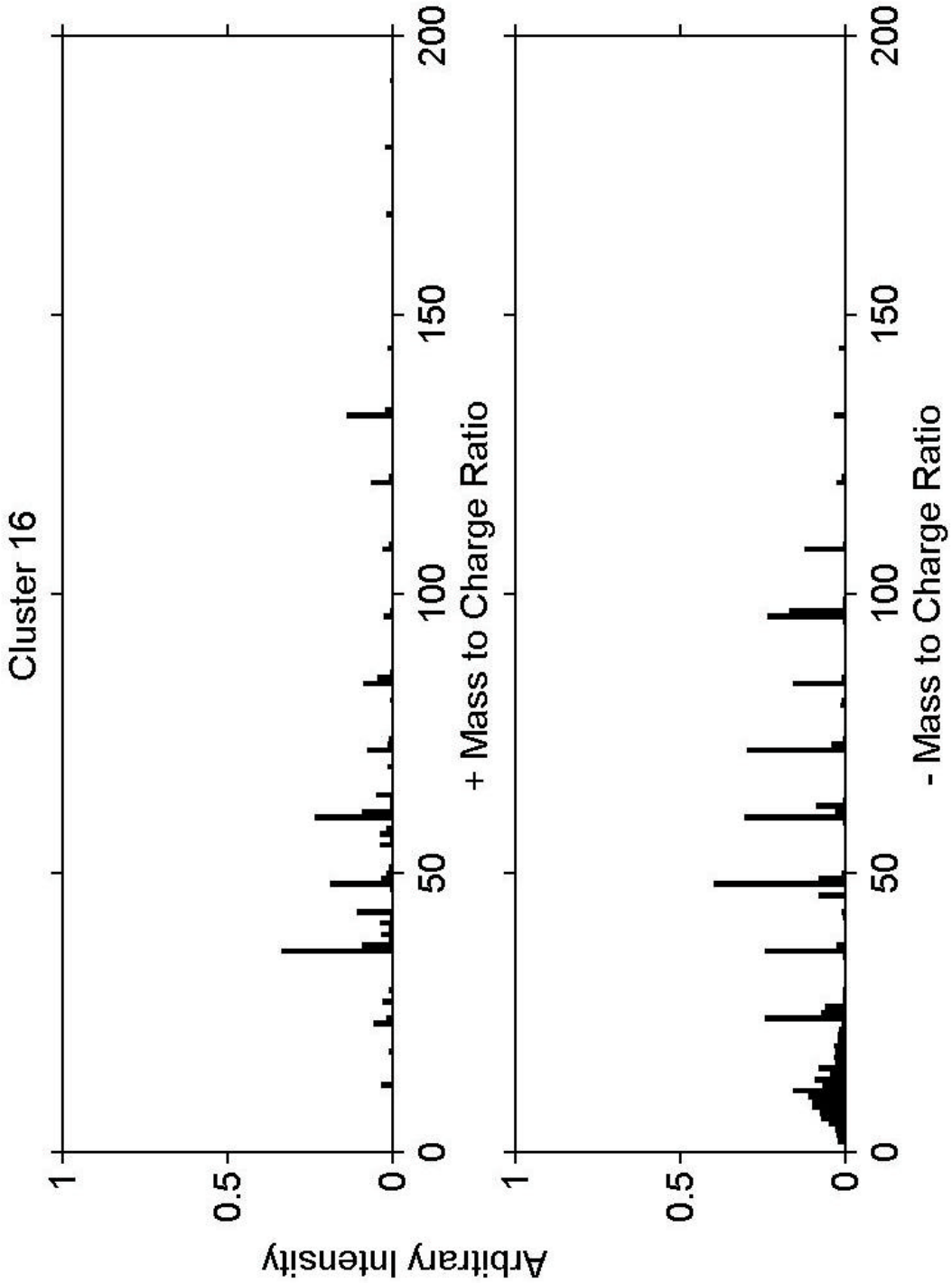

Cluster 11
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

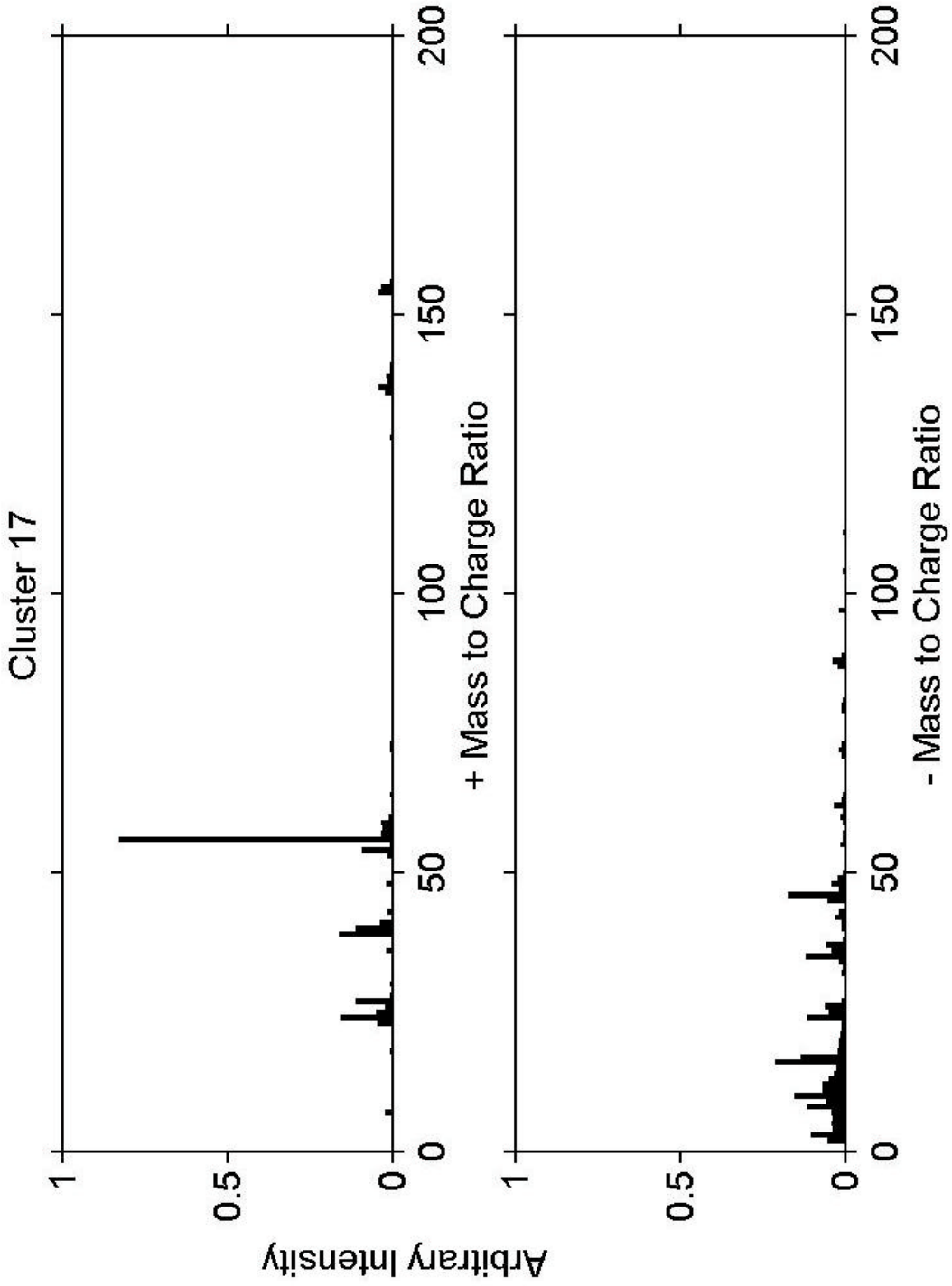

Cluster 12
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

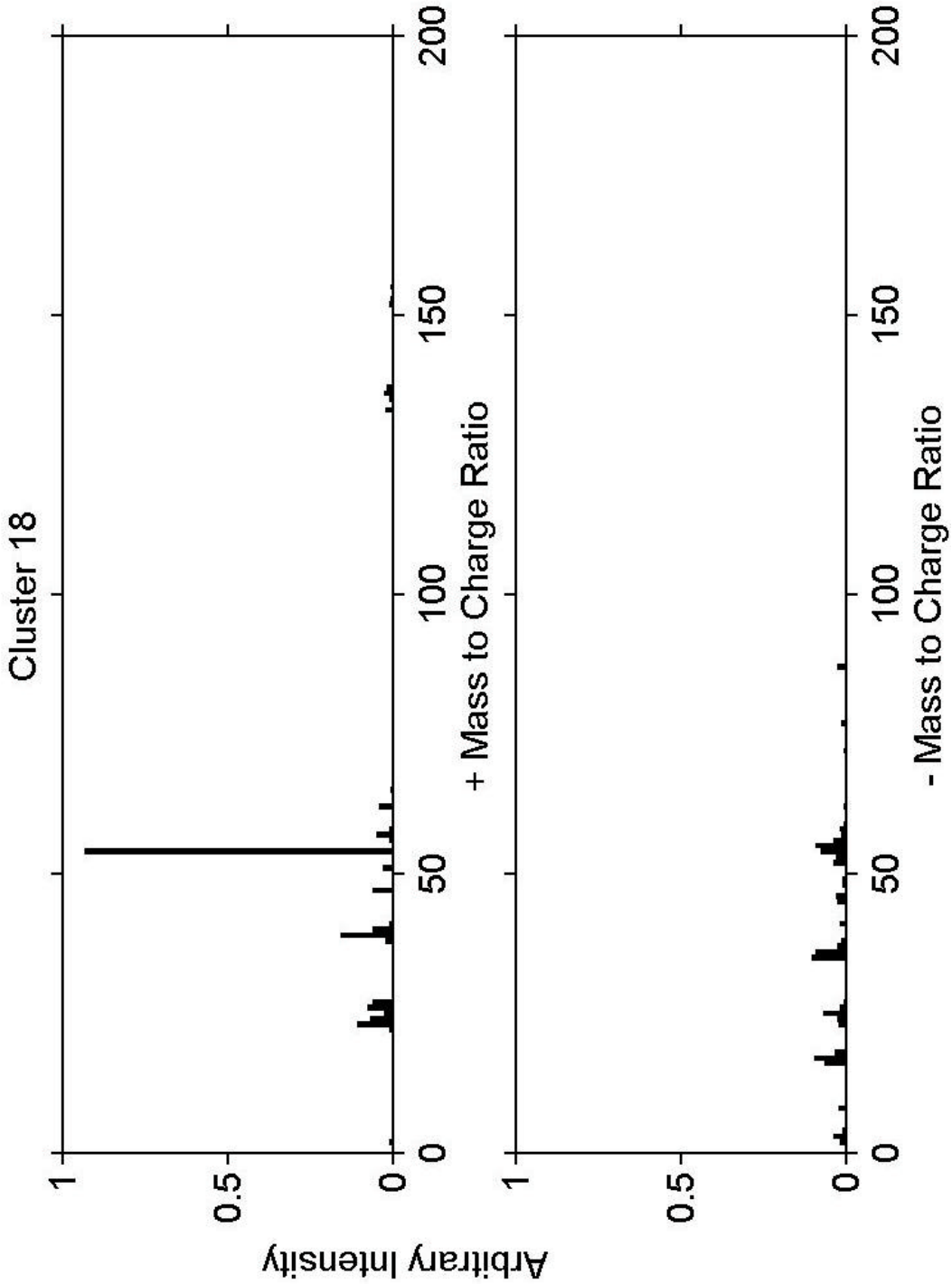

Cluster 13
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

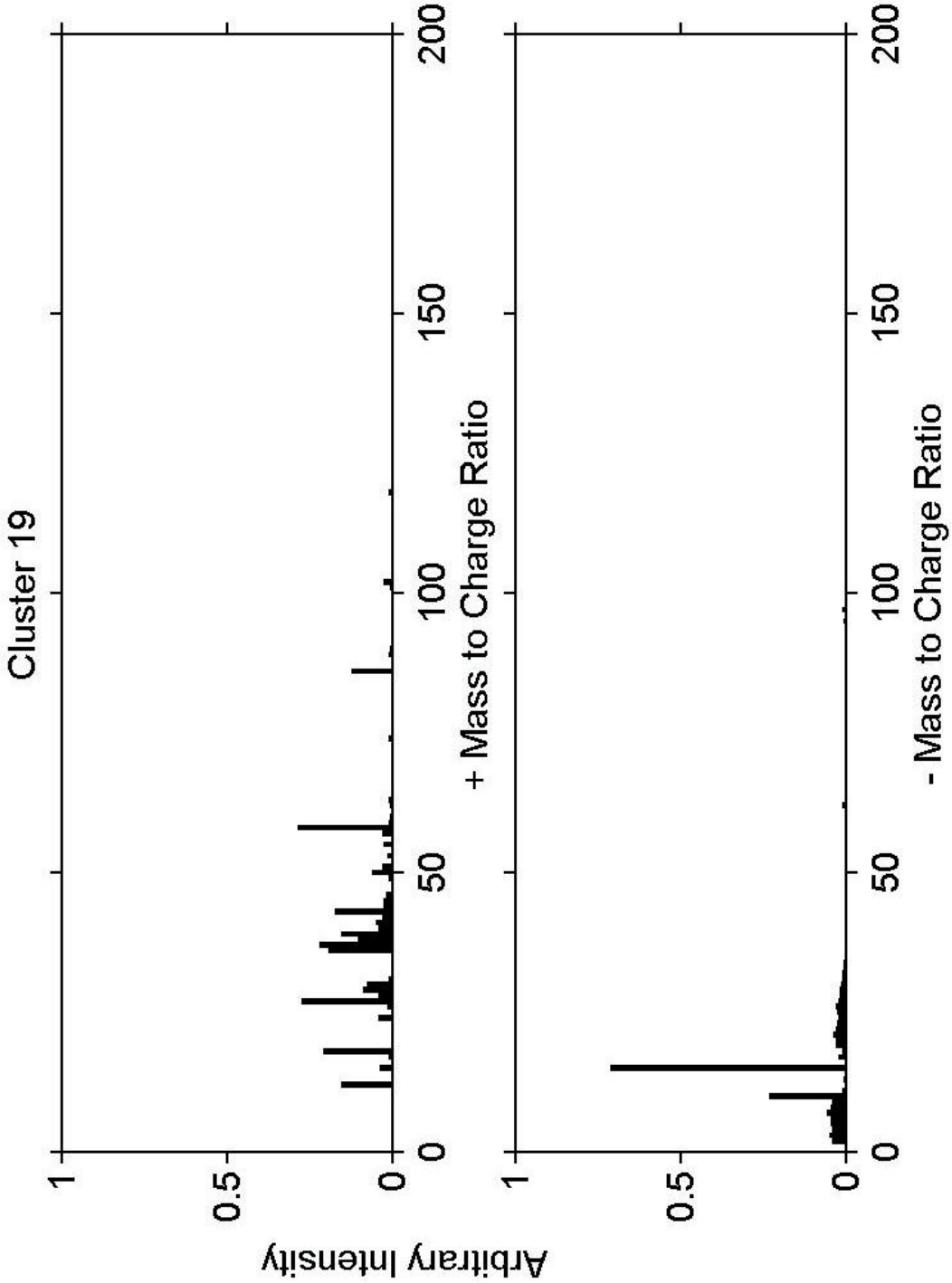

Cluster 14
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

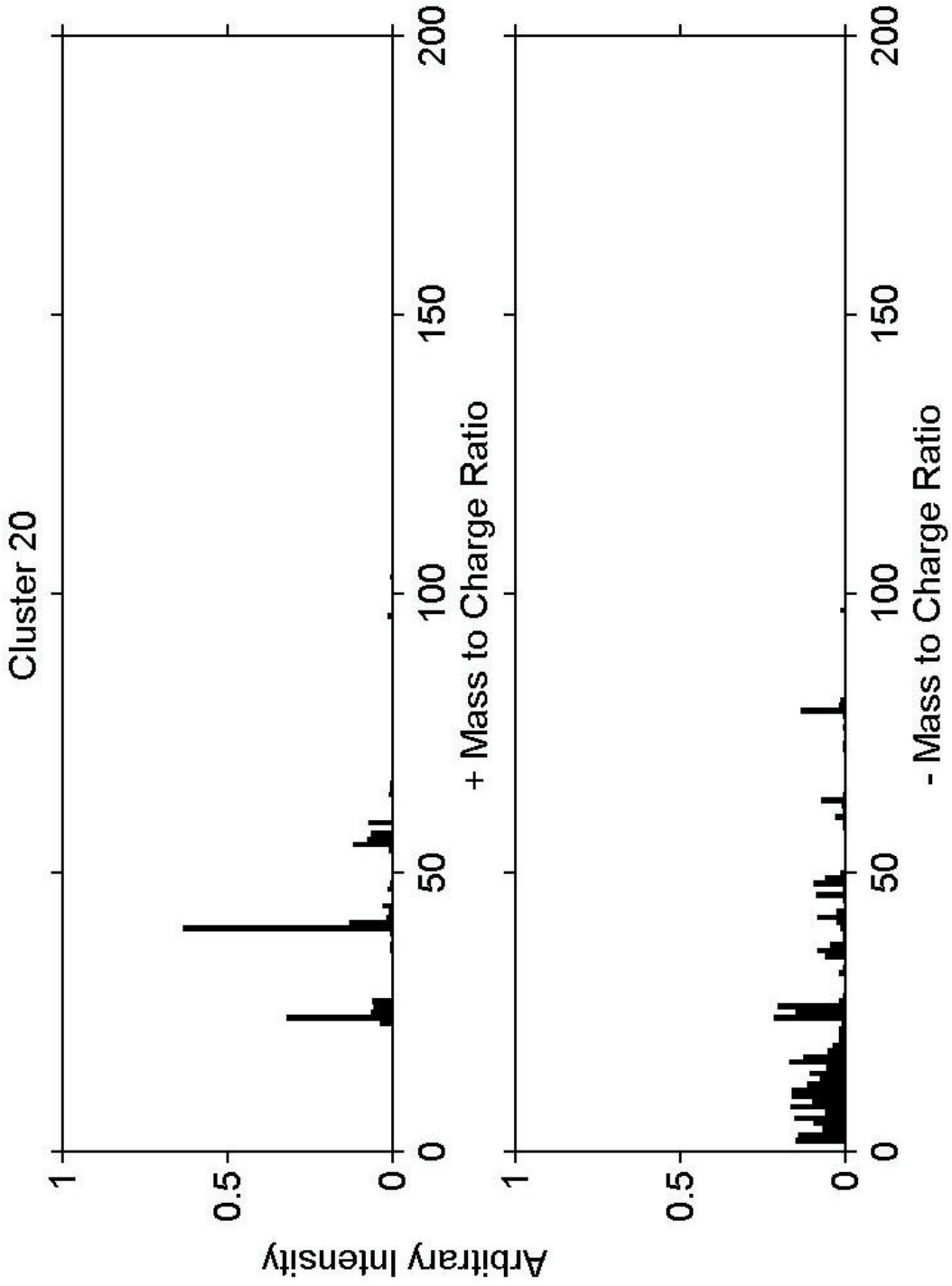

Cluster 15
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

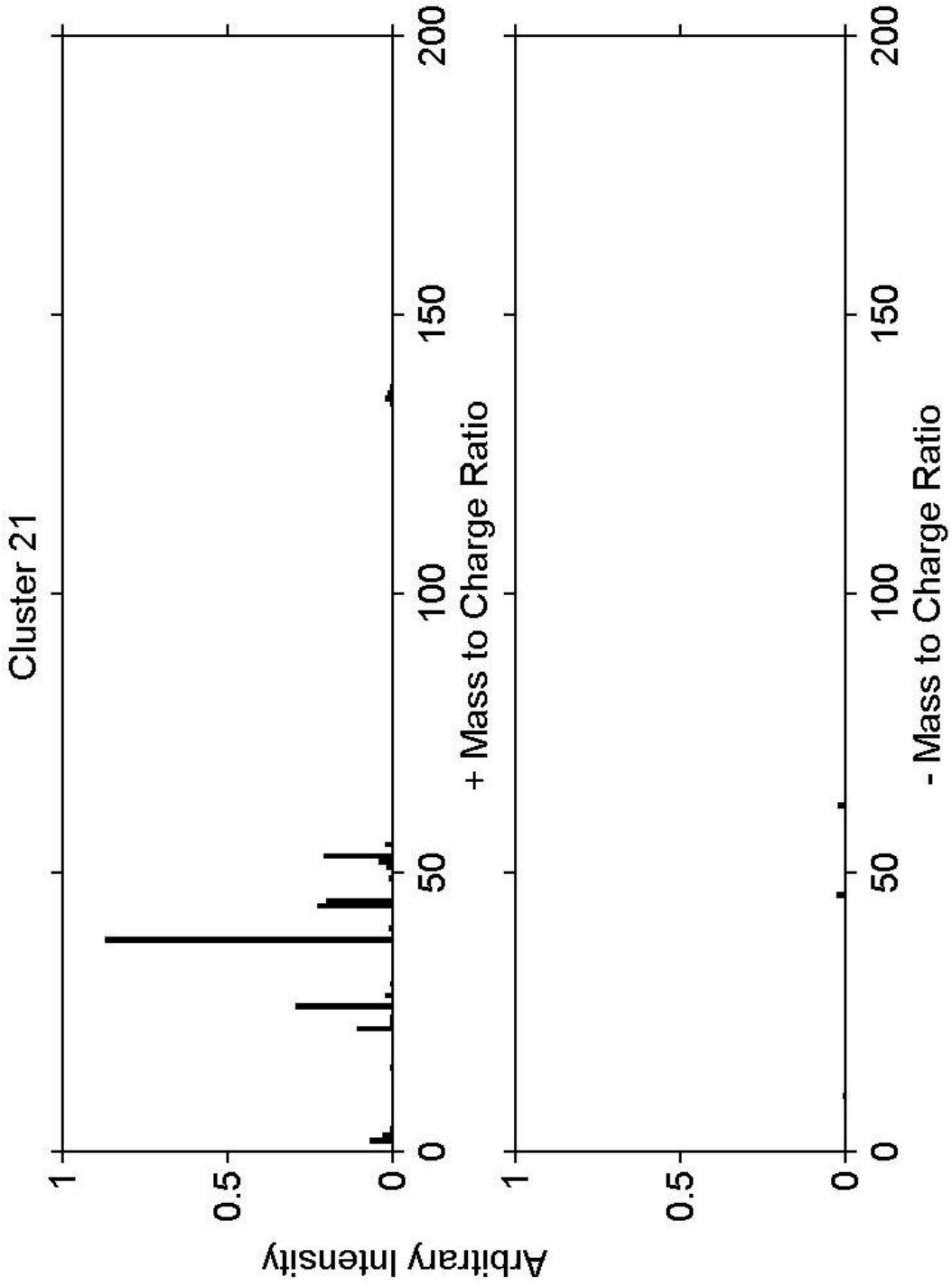

Cluster 16
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

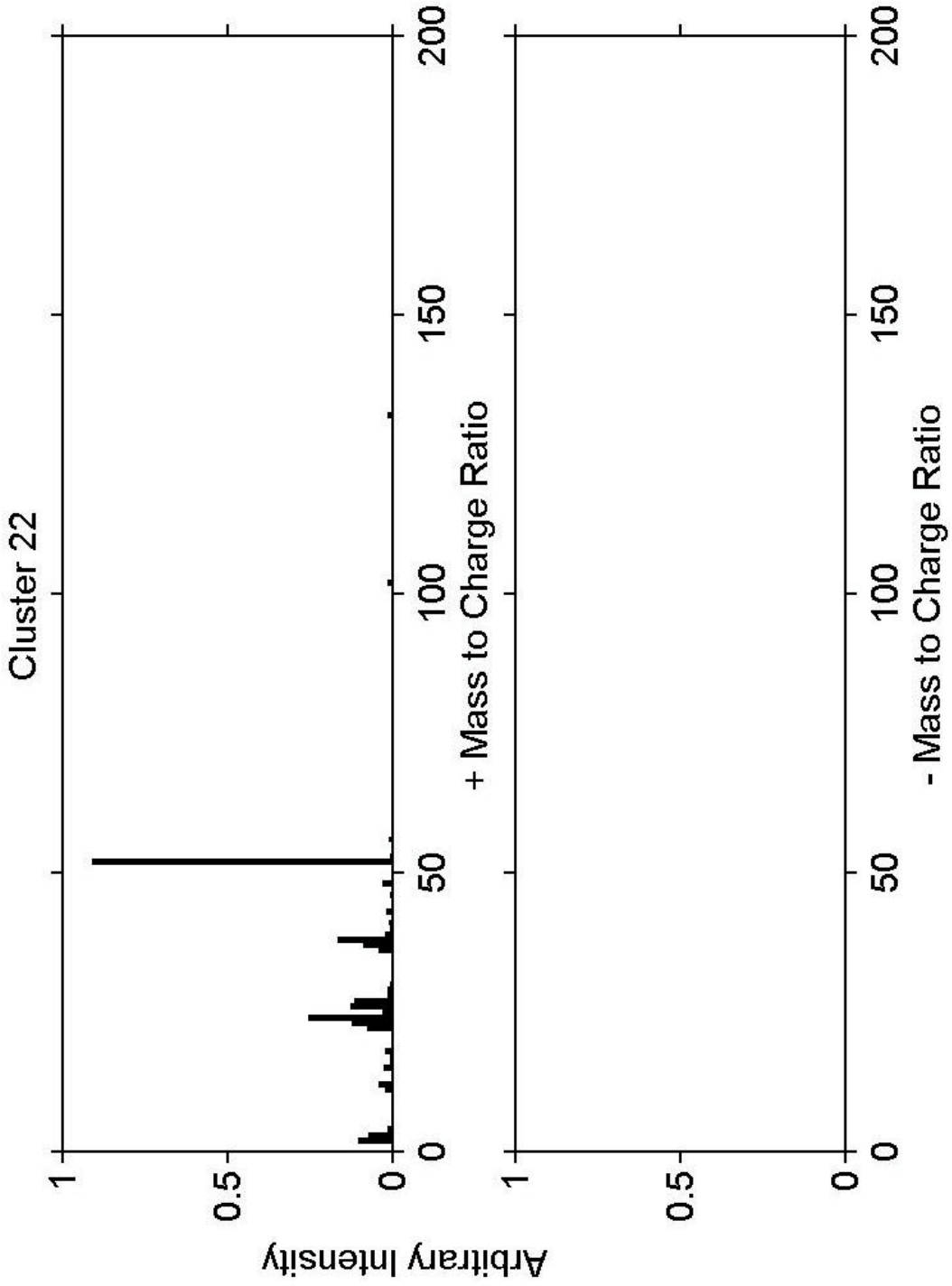

Cluster 17
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 18
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 19
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

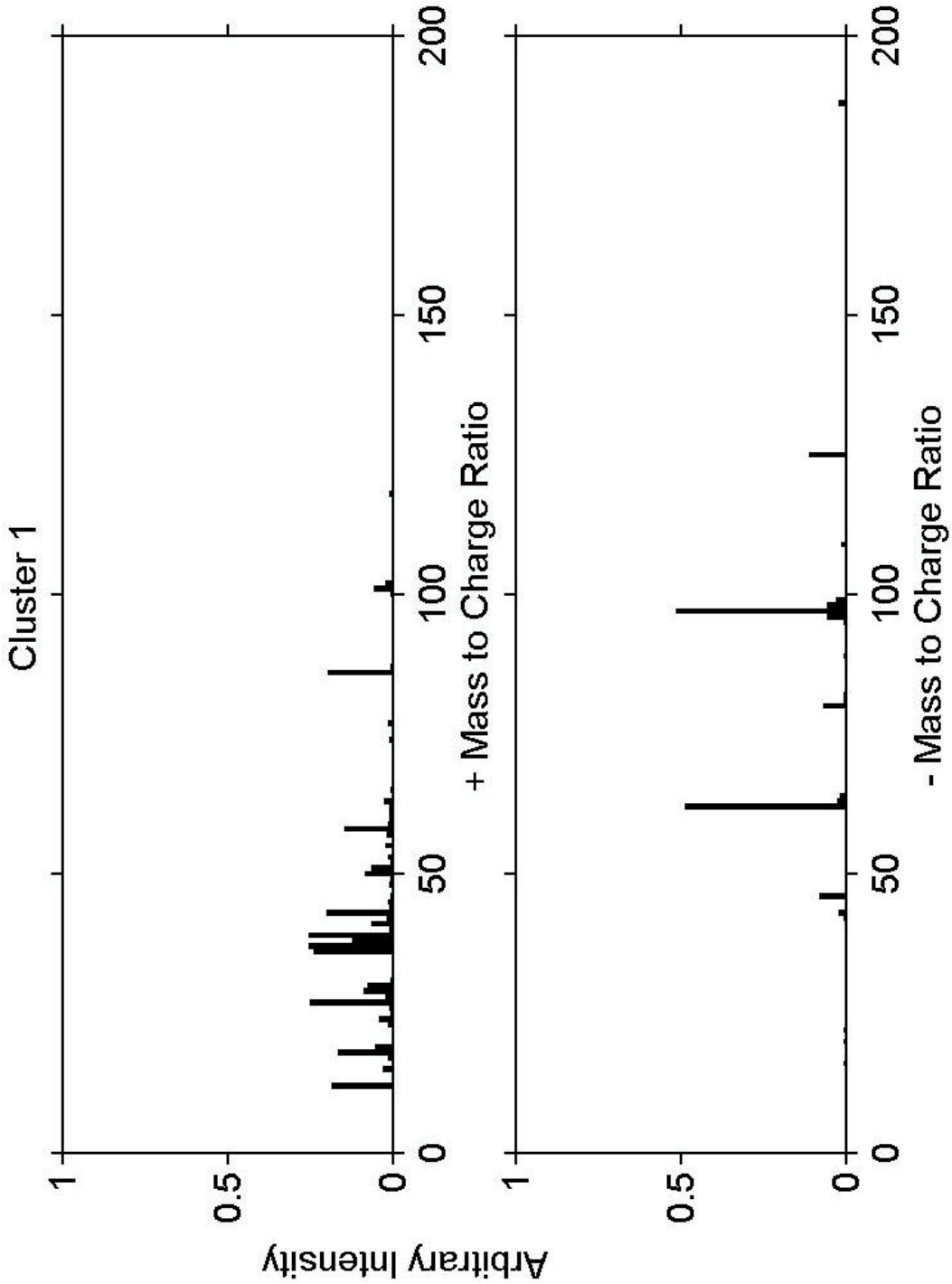

Cluster 20
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

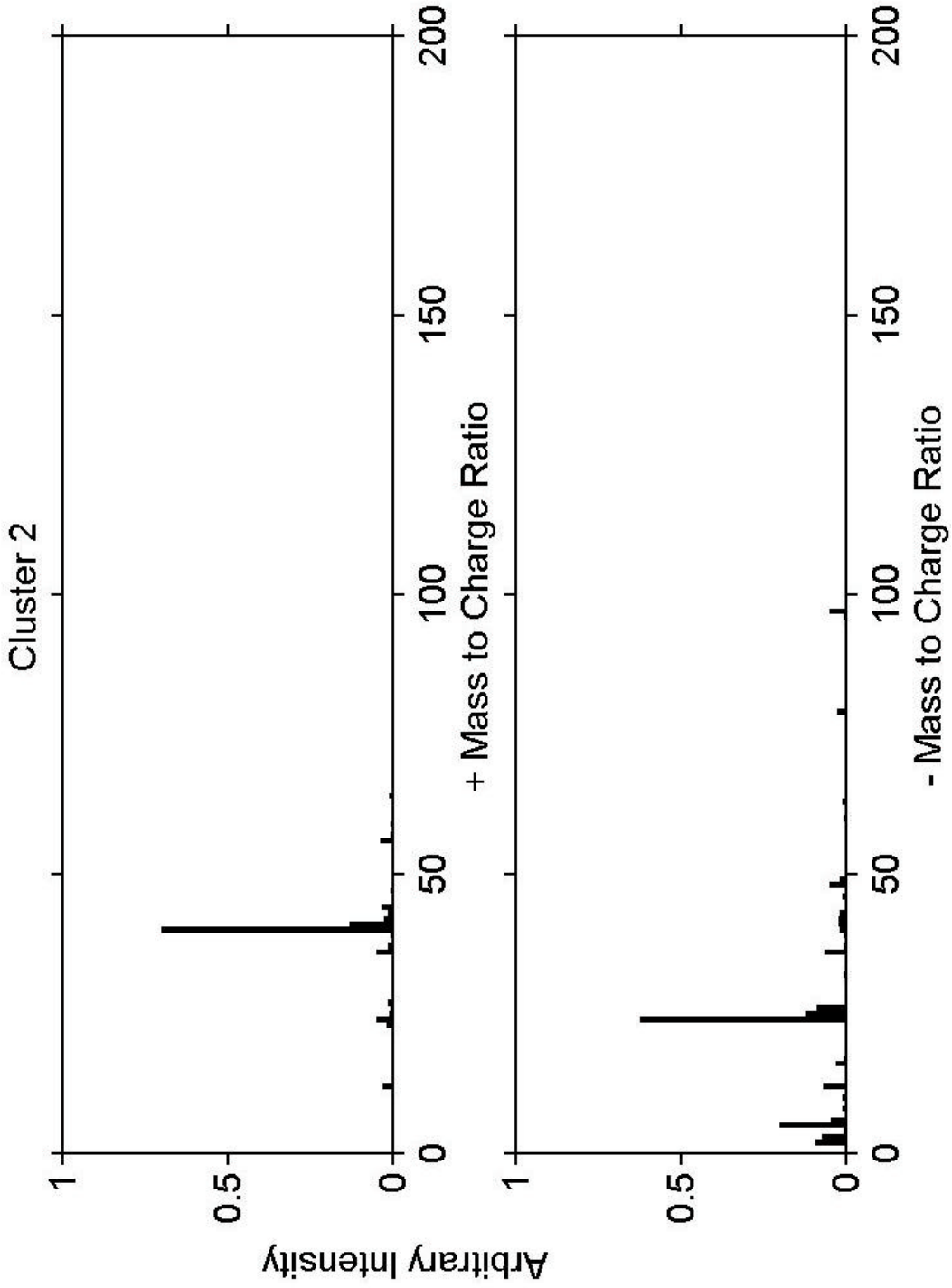

Cluster 21
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

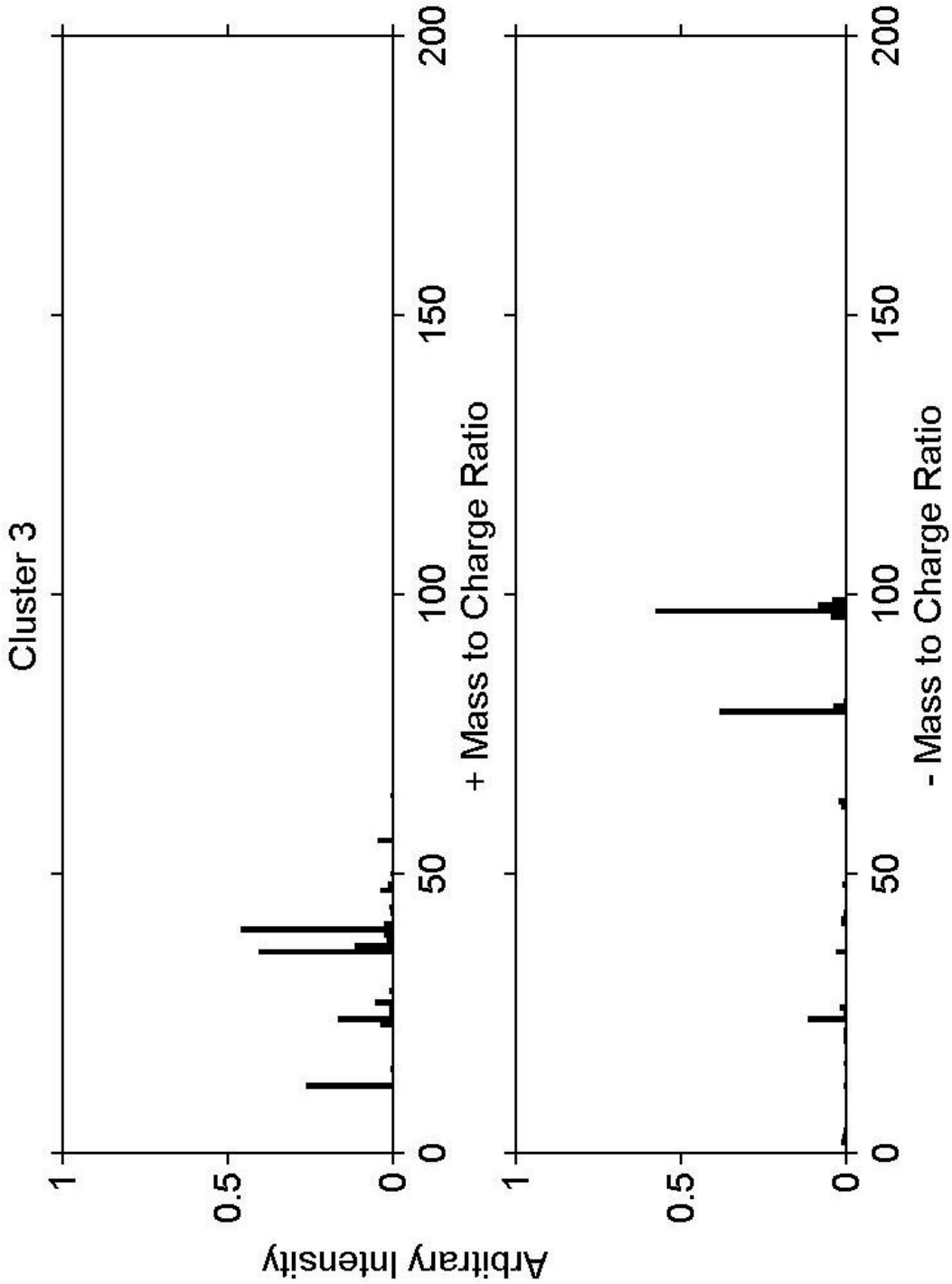

Cluster 22
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

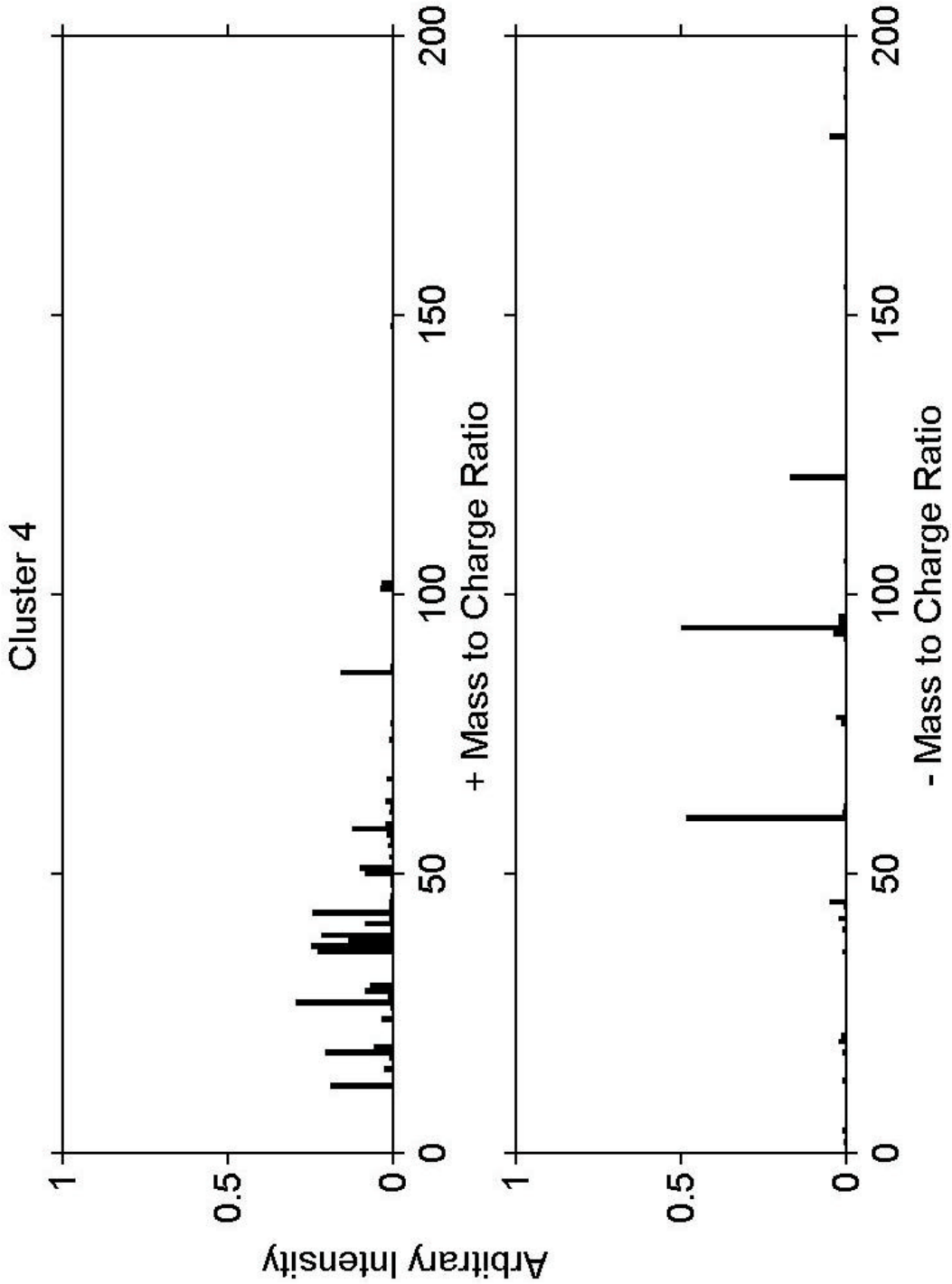
Appendix L: ART-2a dual-ion weight vectors for diesel vehicle dynamometer: mass-to-charge ratio and normalized intensity (vigilance factor = 0.7; 11 clusters)

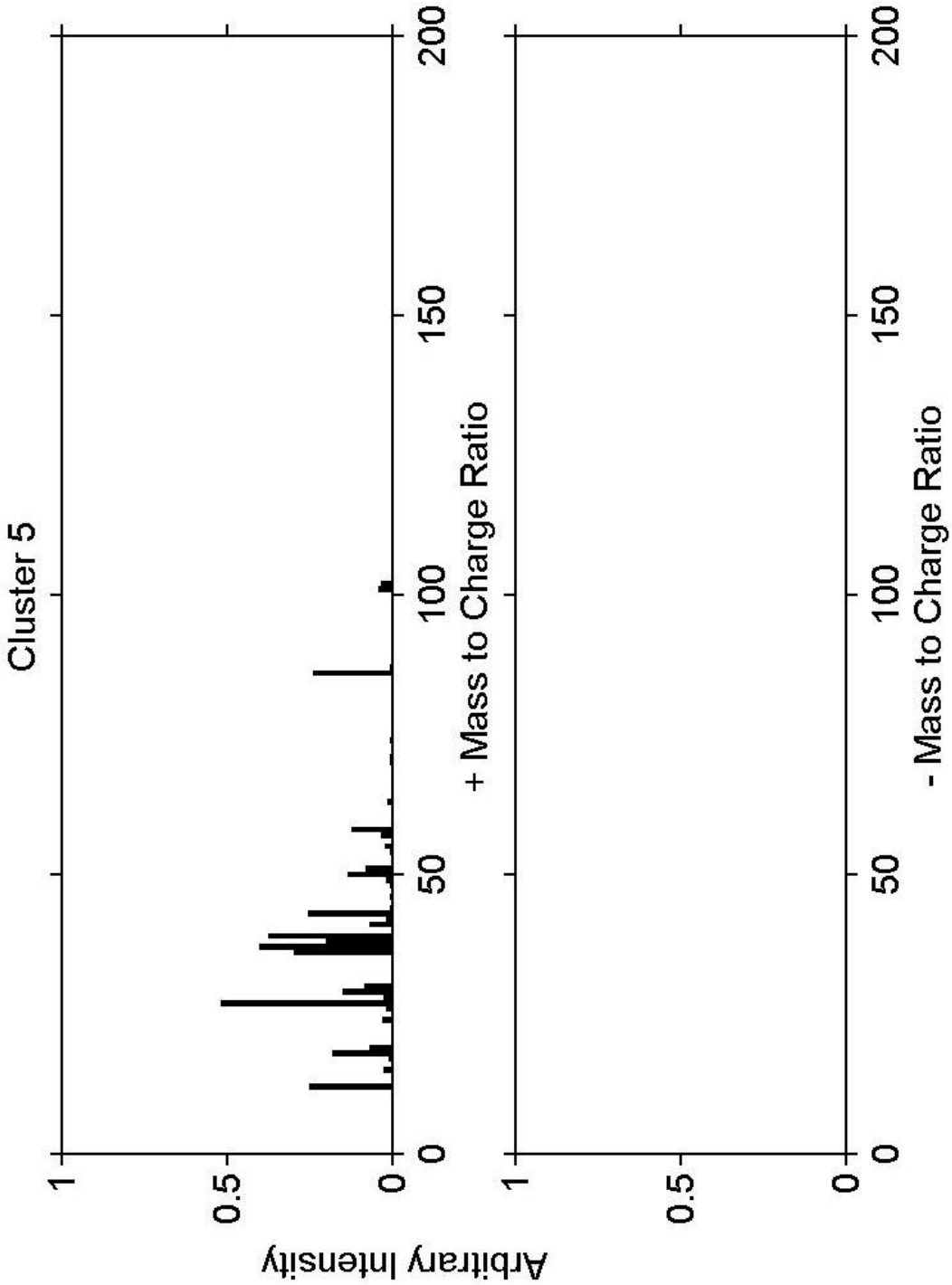
Class #	Number of particles in the class Diesel	Number of particles matched to the class Azusa
1	165	33
2	124	2
3	120	4
4	94	35
5	88	340
6	72	128
7	49	3
8	41	2
9	30	11
10	29	8
11	18	3

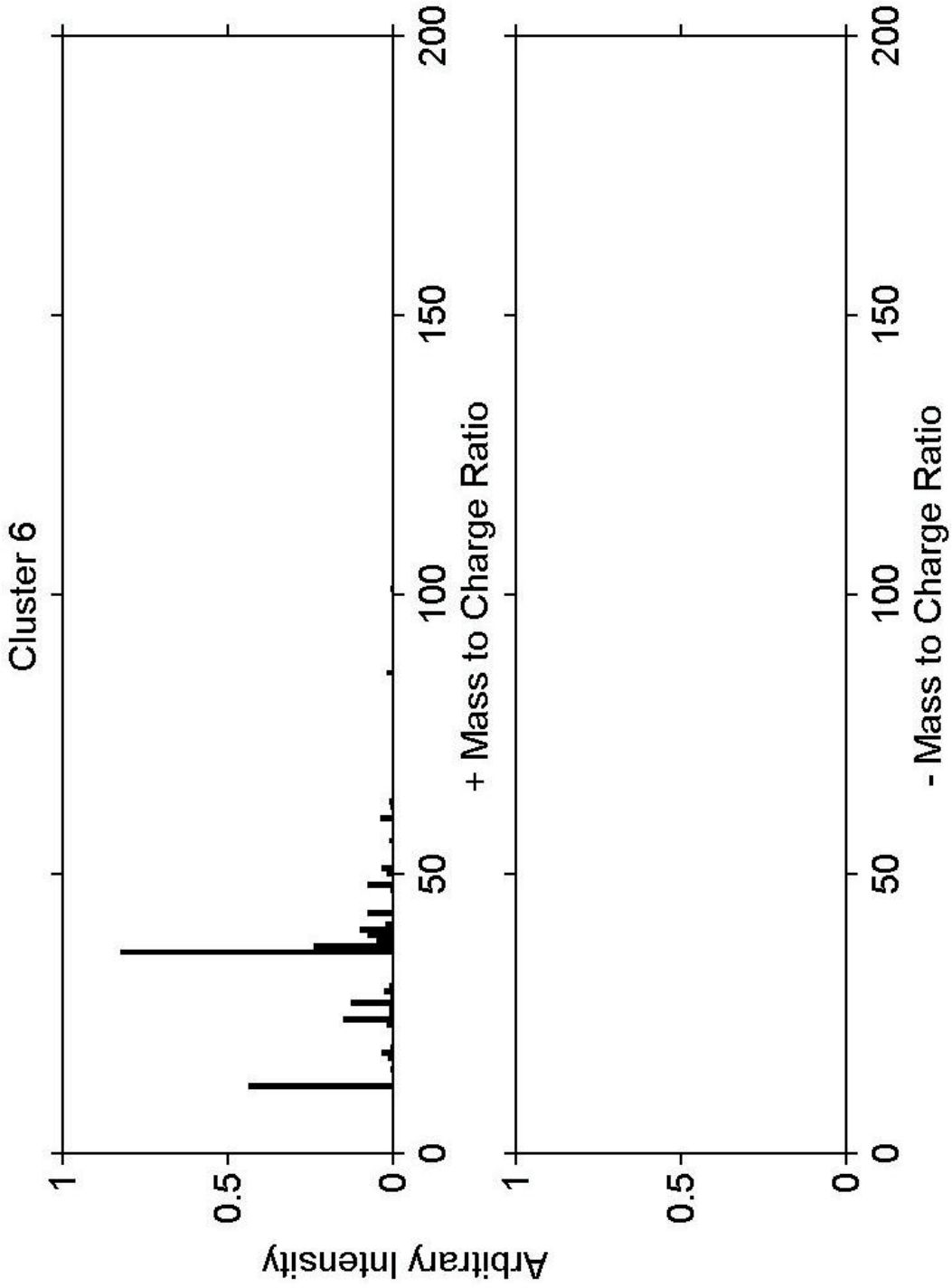

Cluster 1
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

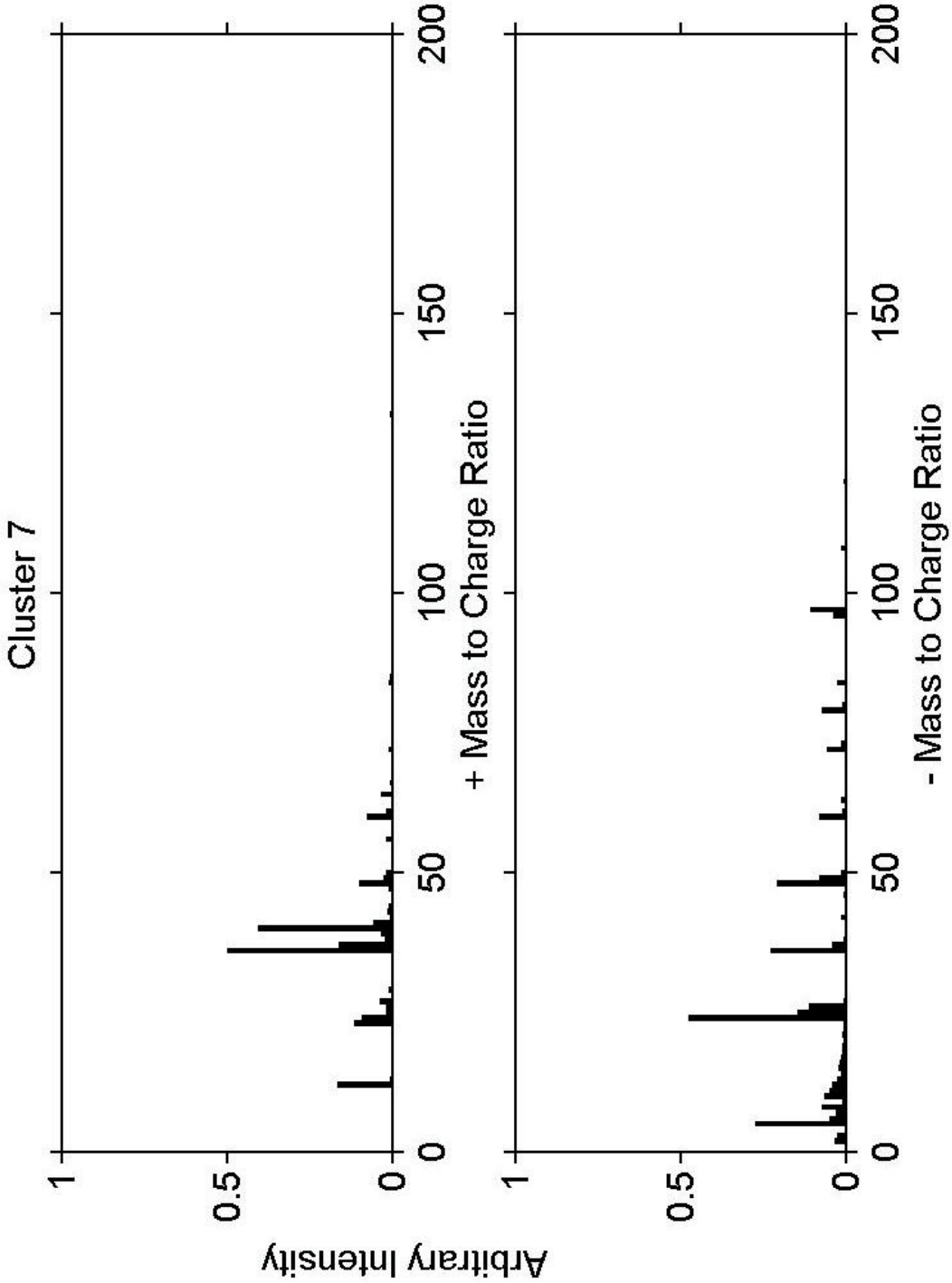

Cluster 2
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

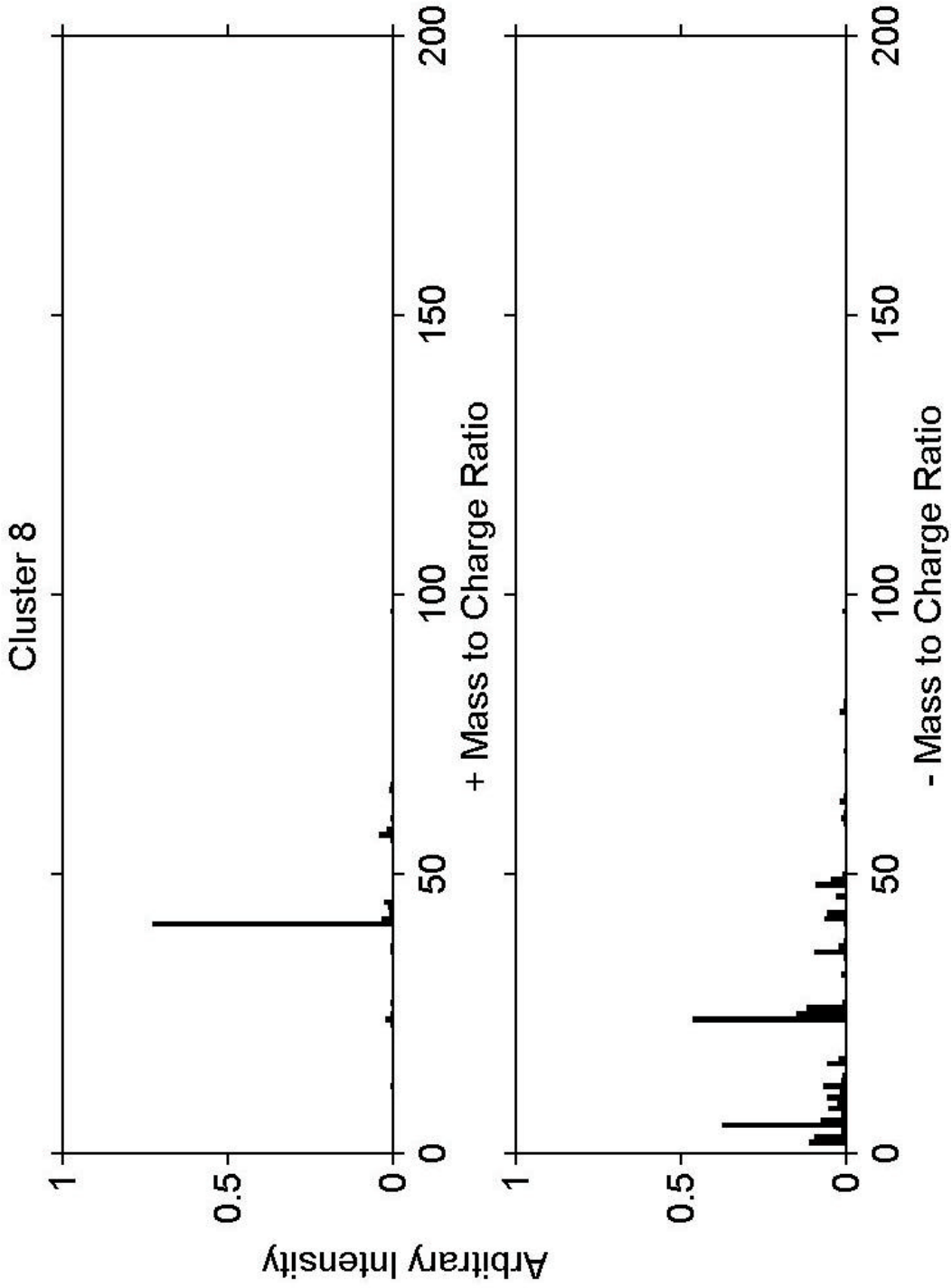

Cluster 3
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

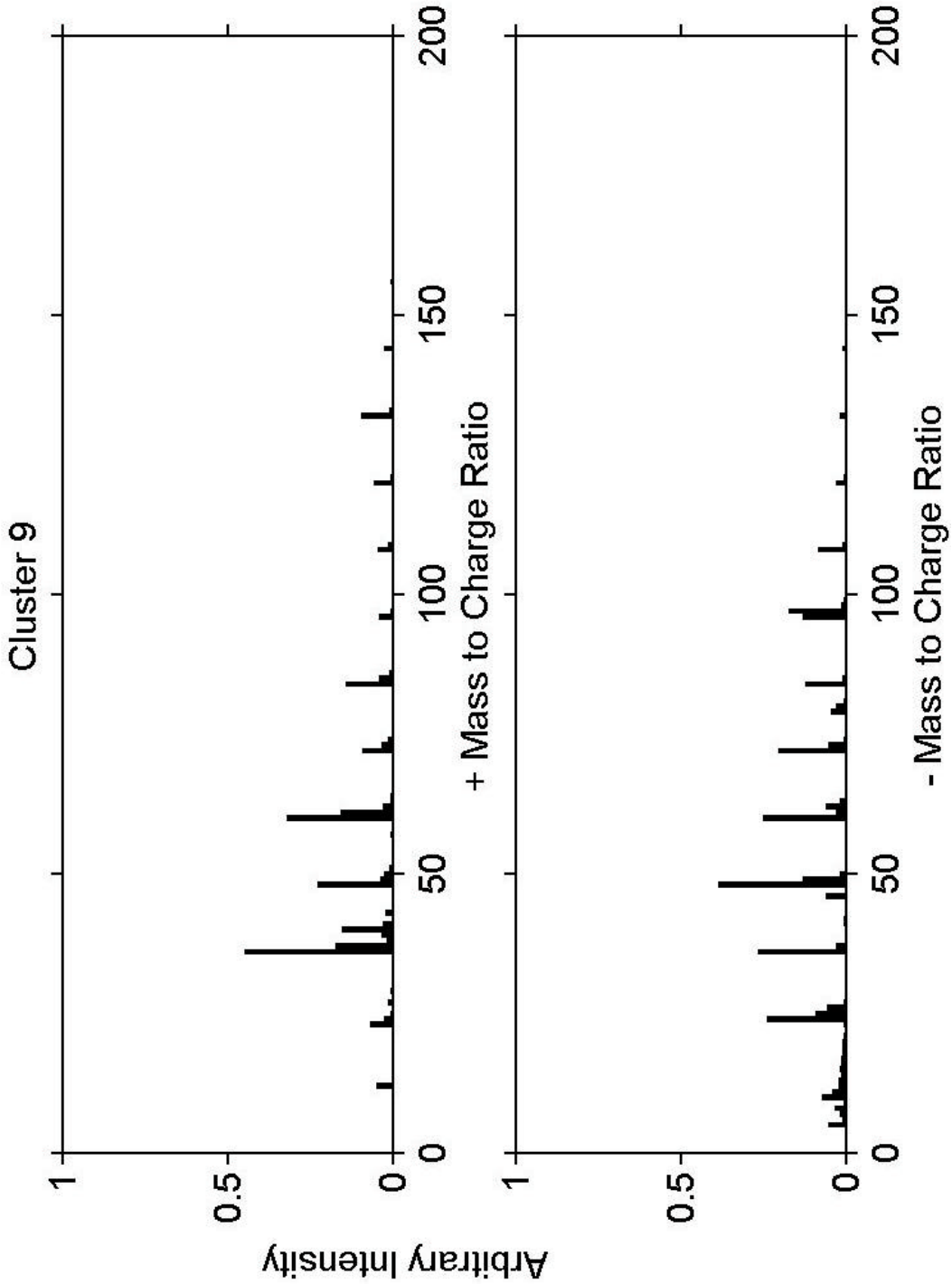

Cluster 4
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

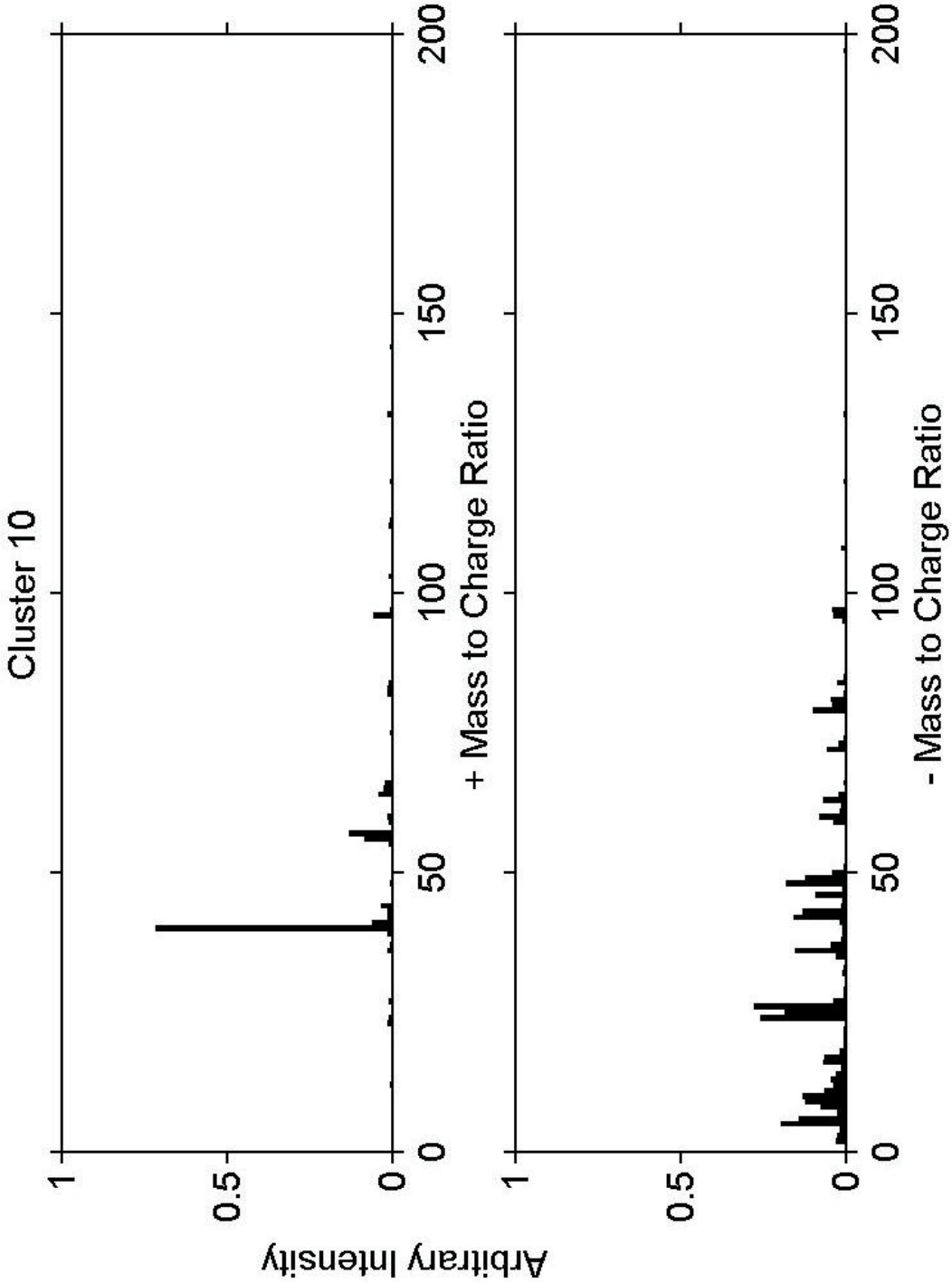

Cluster 5
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

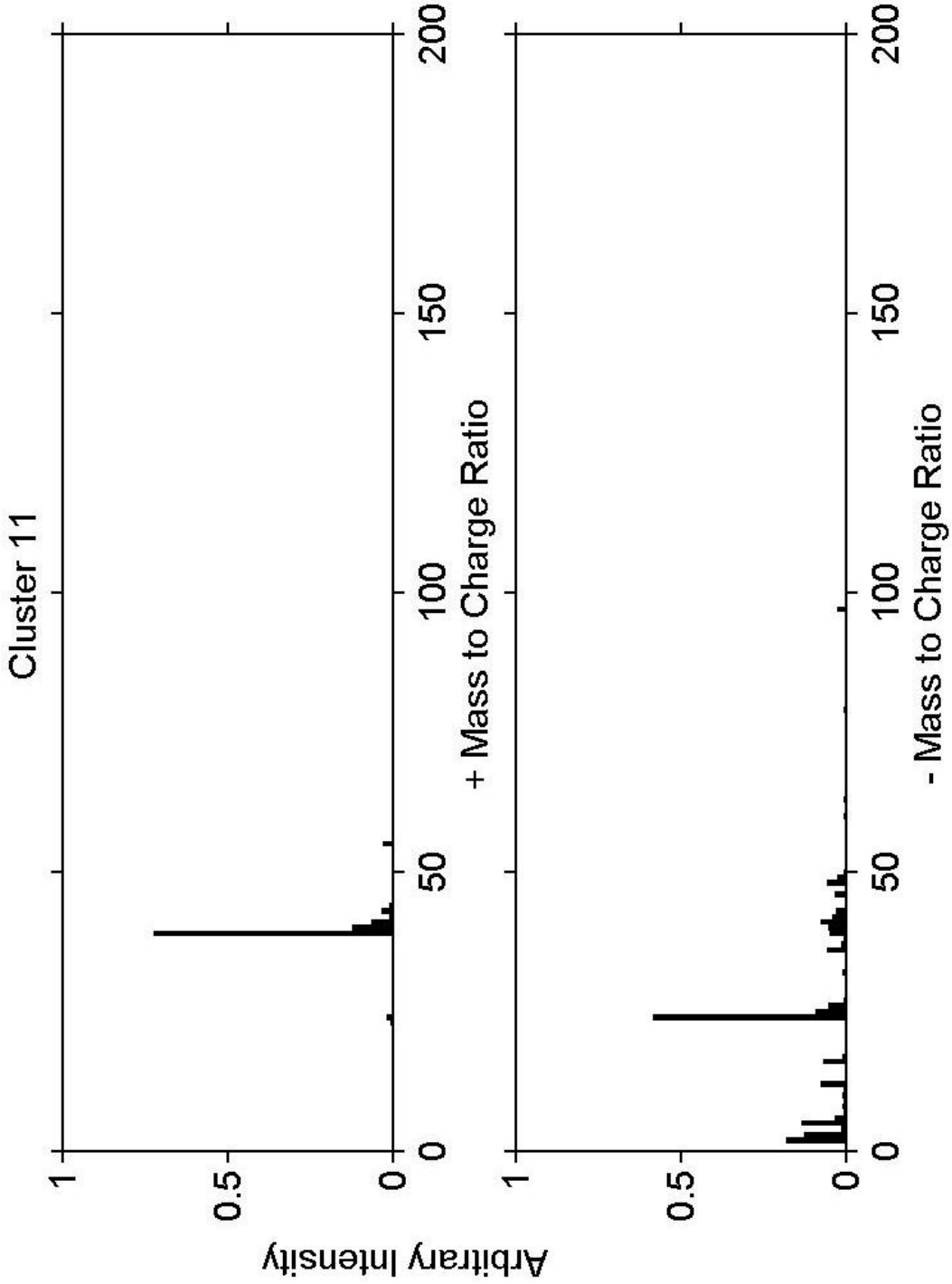

Cluster 6
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 7
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

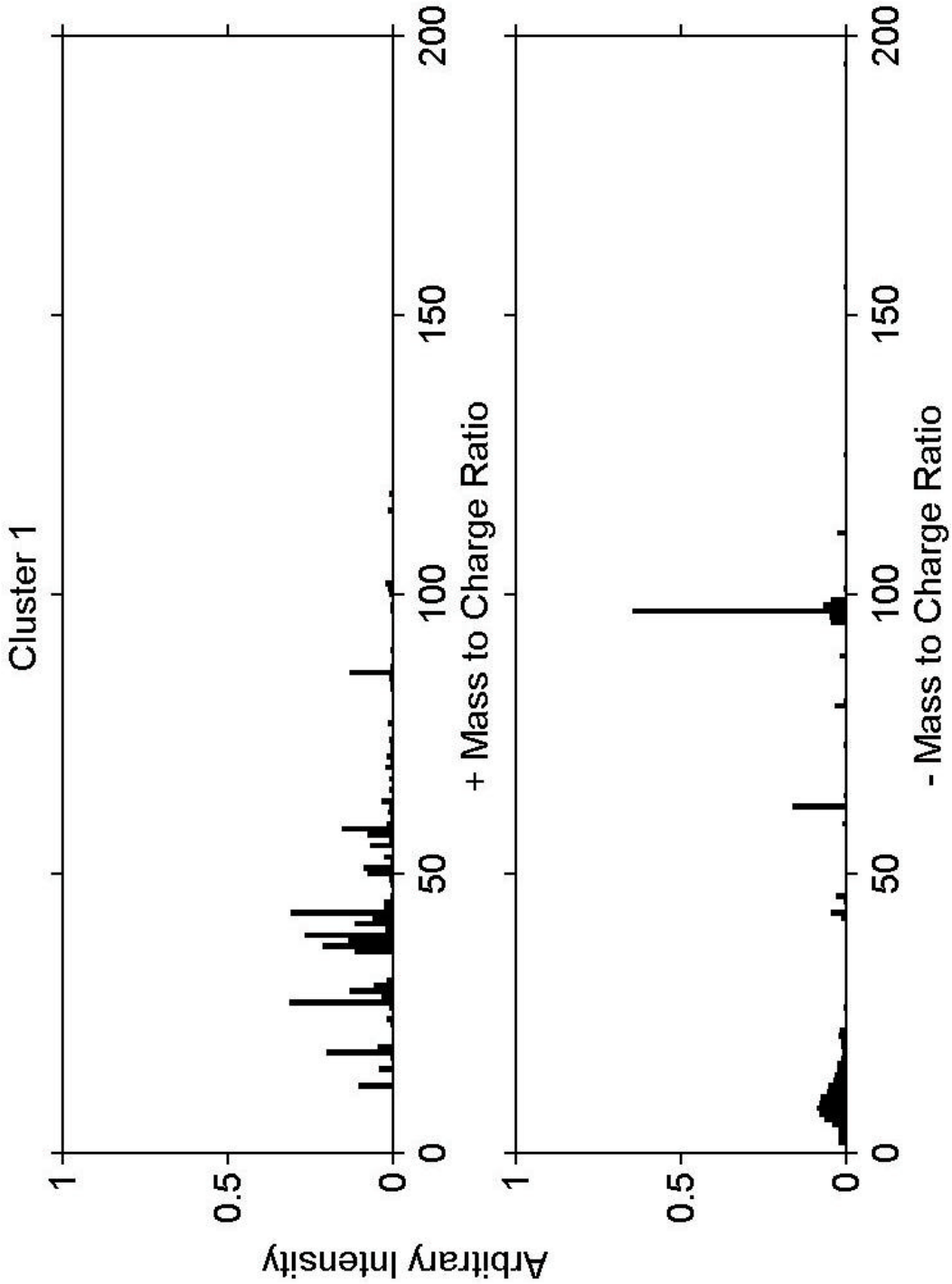

Cluster 8
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

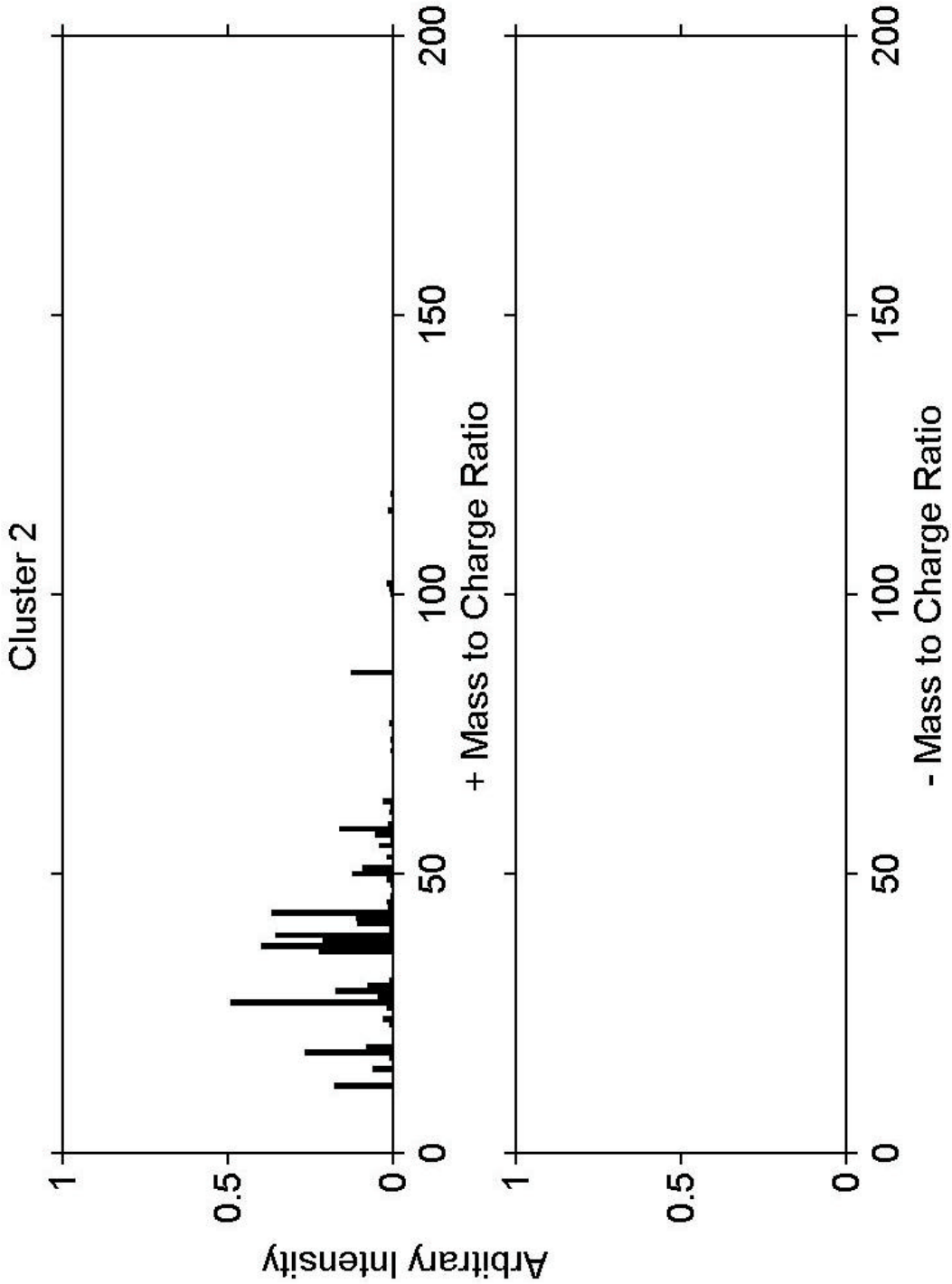

Cluster 9
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

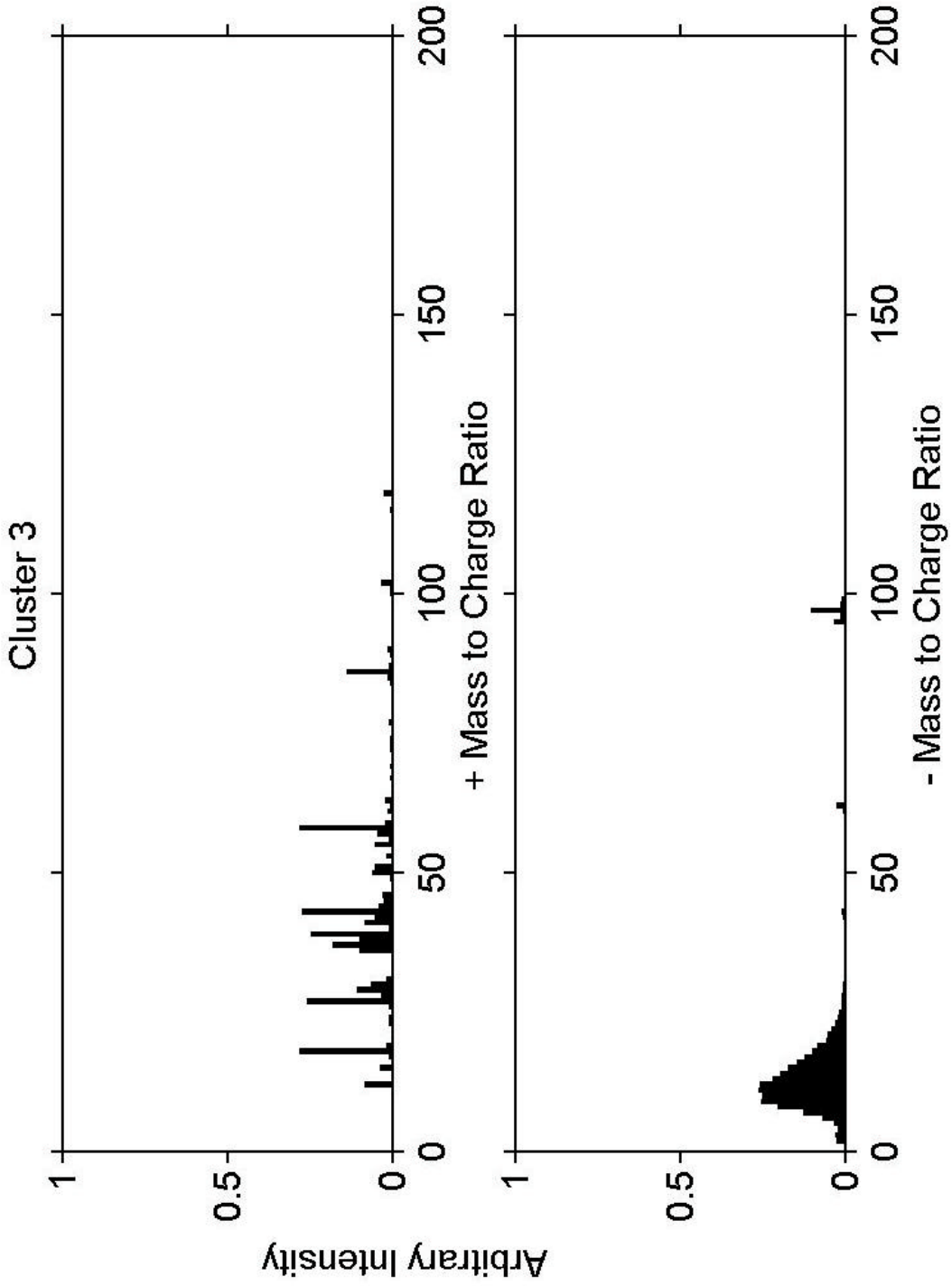

Cluster 10
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

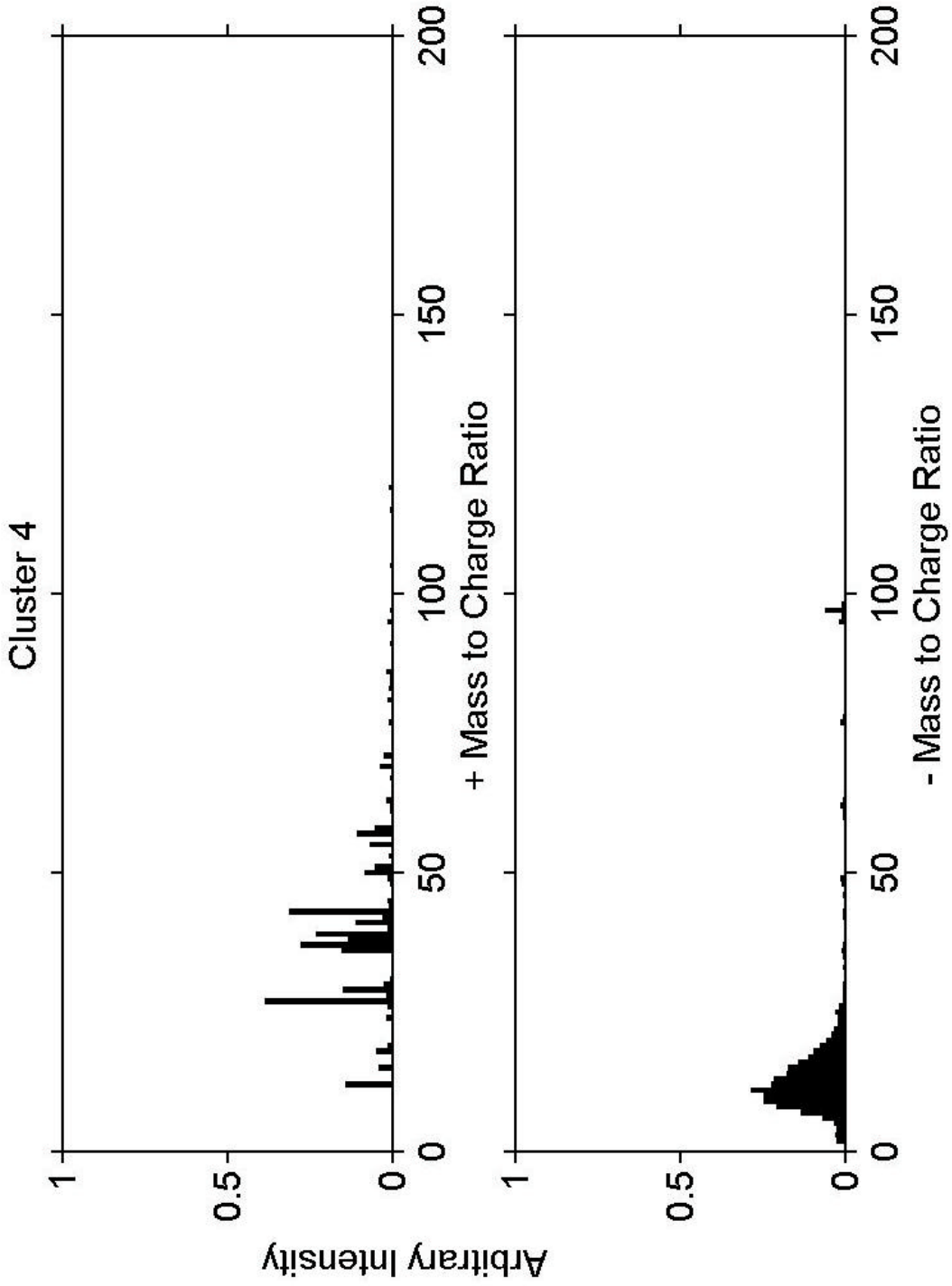

Cluster 11
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

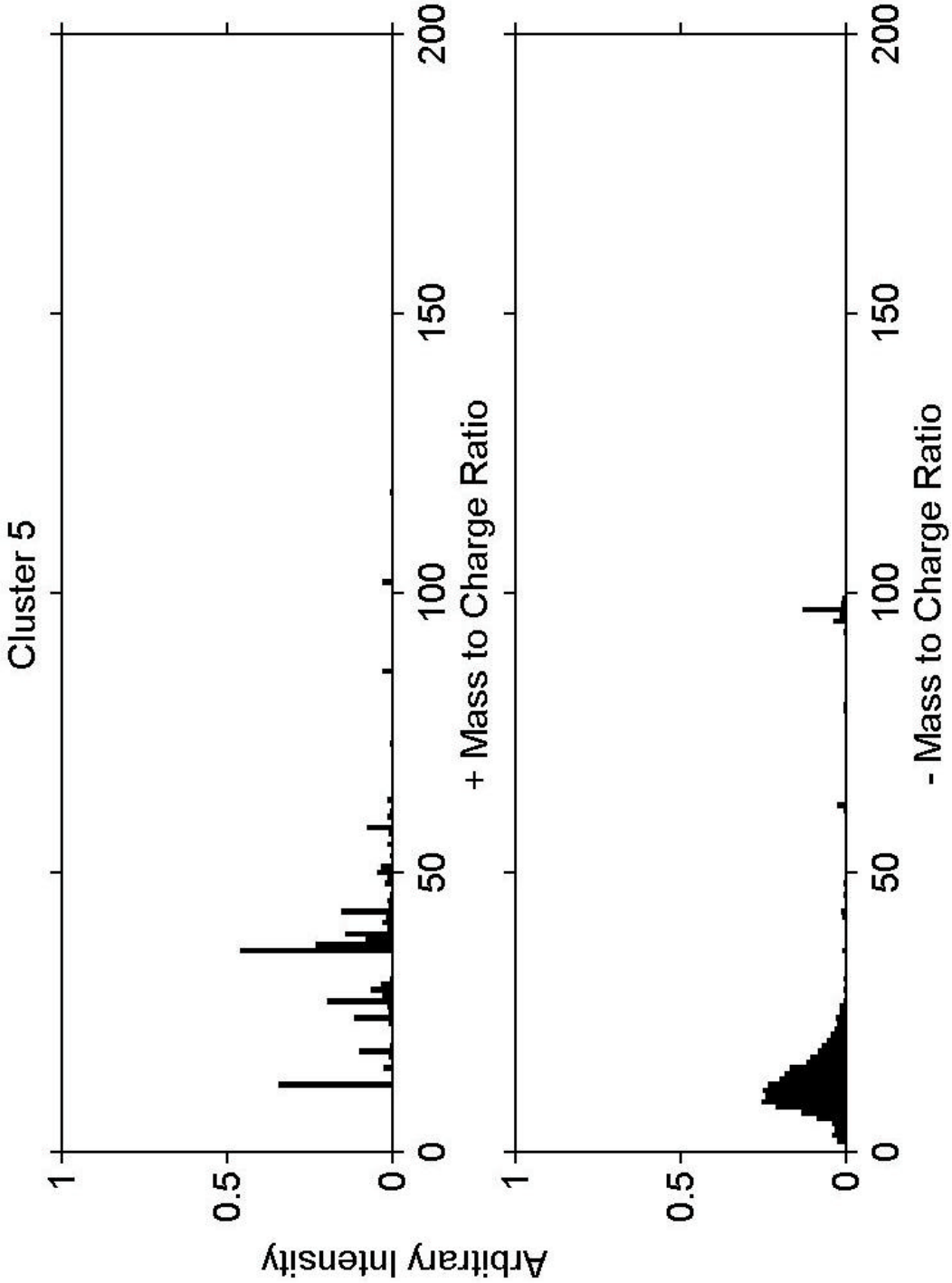
Appendix M: ART-2a dual-ion weight vectors for car vehicle dynamometer: mass-to-charge ratio and normalized intensity (vigilance factor = 0.7; 27 clusters)

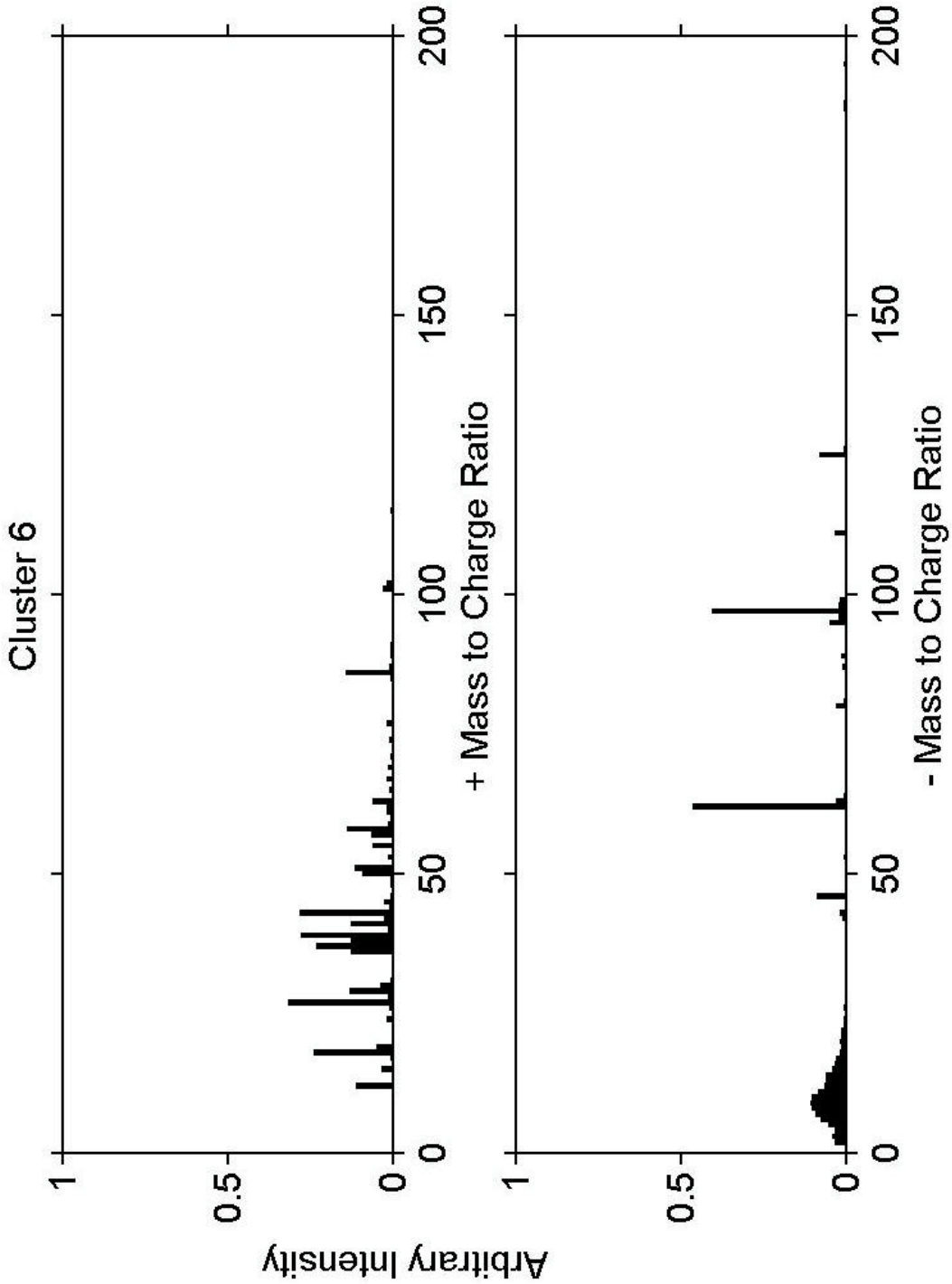

Cluster 1
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

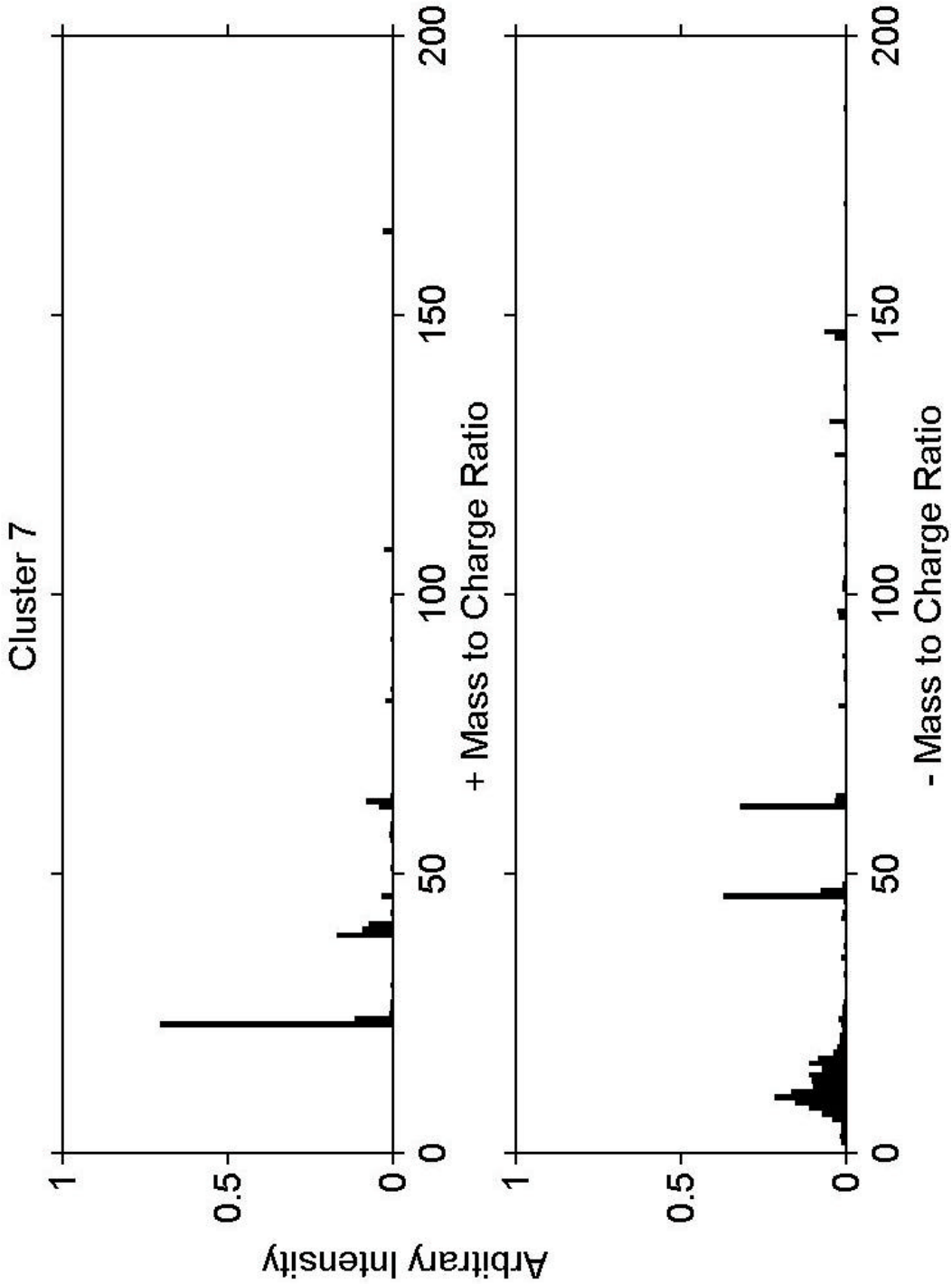

Cluster 2
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

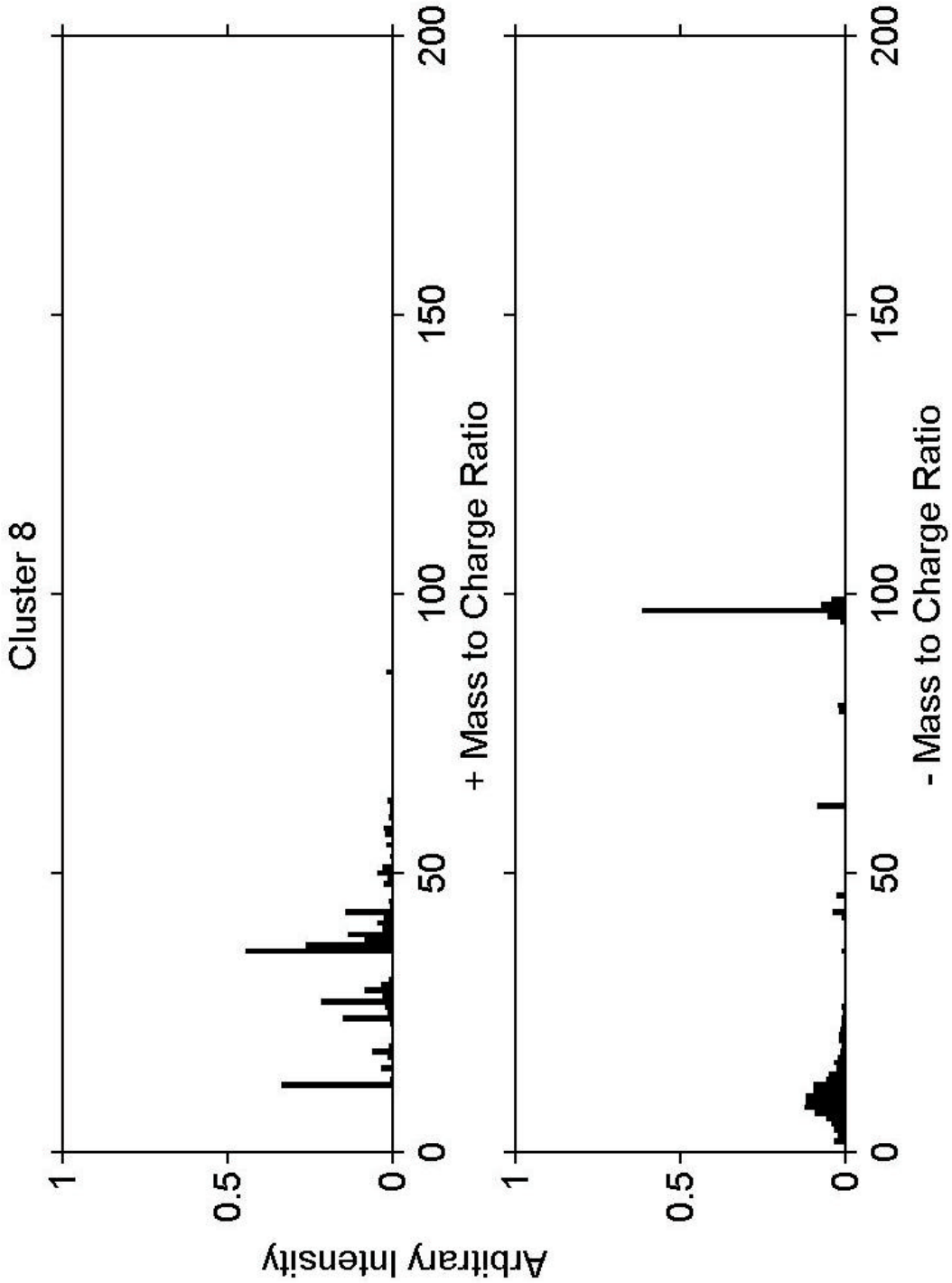

Cluster 3
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio

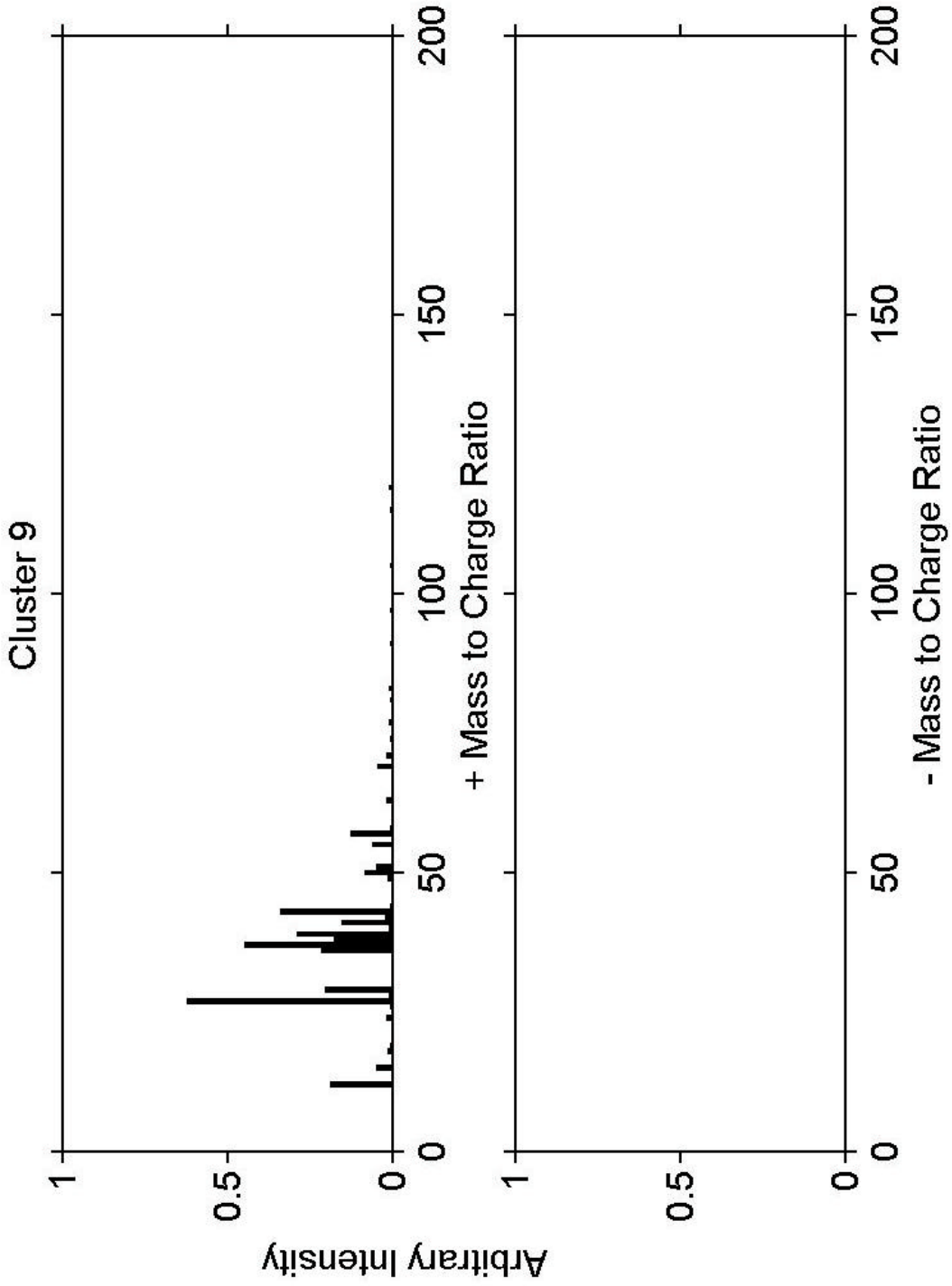

Cluster 4
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 5
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 6
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 7
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 8
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio


Cluster 9
Arbitrary Intensity
1
0.5
0
0
50
100
150
200
+ Mass to Charge Ratio
1
0.5
0
0
50
100
150
200
- Mass to Charge Ratio