

SITE INFORMATION

Site Name Botchergate, Carlisle
Area L200/151
Context No 288
Description Furnace
Latitude (+ve N) 54.9
Longitude (+ve E) -2.92
Magnetic Var -4.00
Date Sampled 27/6/01

MAGNETIC MEASUREMENTS

Sample no.	NRM			Field	After partial demag			Pilot?	Comments
	D	I	Int		D	I	Int		
	<i>degs.</i>	<i>degs.</i>	<i>arb</i>	<i>mT</i>	<i>degs.</i>	<i>degs.</i>	<i>arb</i>	Y/N	
1	239.87	14.78	2.46	15	222.52	15.67	1.17		
2	35.85	-63.33	442.40	15	36.87	60.26	171.87		
3	14.88	51.72	48.10	15	15.45	49.66	16.07		
4	341.31	75.74	3.23	15	352.11	73.99	1.74		
5	11.01	60.86	280.11	15	11.29	60.71	236.00		
6	4.56	66.49	260.52	15	5.84	66.86	257.56	Y	
7	0.21	64.91	96.50	15	0.01	64.90	69.31	Y	
8	348.69	59.17	7.14	15	350.97	58.32	4.76		
9	347.44	64.54	361.87	15	348.31	64.58	380.09	Y	
10	340.89	70.30	78.43	15	343.69	65.22	33.96		
11	323.03	77.51	3.50	15	311.19	74.35	1.22		
12	323.94	77.28	327.62	15	325.93	77.10	218.95		
13	15.60	75.80	2.33	15	13.94	68.22	1.15		
14	14.00	75.99	6.43	15	41.58	66.13	1.36		
15	62.25	-2.38	180.36	15	44.25	51.36	28.57		
16	19.19	49.77	2.71	15	0.00	71.08	4.02		

STATISTICS FOR NRM

Sample no.	NRM				
	D	I	x	y	z
	<i>degs.</i>	<i>degs.</i>			
1	239.87	14.78	-0.48535	-0.83627	0.25511
2	35.85	-63.33	0.36382	0.26288	-0.89361
3	14.88	51.72	0.59873	0.15909	0.78499
4	341.31	75.74	0.23333	-0.07893	0.96919
5	11.01	60.86	0.47798	0.09300	0.87343
6	4.56	66.49	0.39765	0.03171	0.91699
7	0.21	64.91	0.42404	0.00155	0.90564
8	348.69	59.17	0.50254	-0.10051	0.85869
9	347.44	64.54	0.41959	-0.09348	0.90289
10	340.89	70.30	0.31852	-0.11036	0.94147
11	323.03	77.51	0.17279	-0.13006	0.97633
12	323.94	77.28	0.17800	-0.12961	0.97546
13	15.60	75.80	0.23627	0.06597	0.96945
14	14.00	75.99	0.23490	0.05857	0.97025
15	62.25	-2.38	0.46521	0.88422	-0.04153
16	19.19	49.77	0.60997	0.21229	0.76346

Number = 16
Sum x = 5.14799
Sum y = 0.29005
Sum z = 11.12822
R = 12.26471
x bar = 0.41974
y bar = 0.02365
z bar = 0.90734

Mean Dec = 3.22
Mean Inc = 65.14
Alpha95 = 21.14

STATISTICS FOR PARTIAL DEMAGNETISATION

Sample no.	Demag				
	D	I	x	y	z
	degs.	degs.			
1					
2					
3	15.45	49.66	0.62393	0.17244	0.76222
4	352.11	73.99	0.27319	-0.03786	0.96121
5	11.29	60.71	0.47976	0.09578	0.87215
6	5.84	66.86	0.39094	0.03999	0.91955
7	0.01	64.90	0.42420	0.00007	0.90557
8	350.97	58.32	0.51867	-0.08243	0.85099
9	348.31	64.58	0.42035	-0.08697	0.90319
10	343.69	65.22	0.40227	-0.11771	0.90792
11	311.19	74.35	0.17765	-0.20300	0.96293
12	325.93	77.10	0.18493	-0.12507	0.97476
13	13.94	68.22	0.36012	0.08939	0.92862
14	41.58	66.13	0.30270	0.26856	0.91447
15					
16	0.00	71.08	0.32425	0.00000	0.94597

Number = 13
Sum x = 4.88295
Sum y = 0.01319
Sum z = 11.80955
R = 12.77923
x bar = 0.38210
y bar = 0.00103
z bar = 0.92412

Mean Dec = 0.15
Mean Inc = 67.54
Alpha95 = 5.67

Alpha68 = 3.36

CORRECTIONS

Mean Dec = 0.15
Mean Inc = 67.54

Correction for magnetic variation

Mean Dec = -3.85
Mean Inc = 67.54

Correction to Meriden (CVP)

Uncorrected Dec = -3.85
Uncorrected Inc = 67.54
Latitude = 54.9
Longitude = -2.92

Kai = 39.59
Latitude of pole = 84.94
Beta1 = -29.00
Longitude of pole = 206.08
Geomag colat = 42.10
Corrected Inc = 65.68
Beta 2 = -27.70
Corrected Dec = -3.50

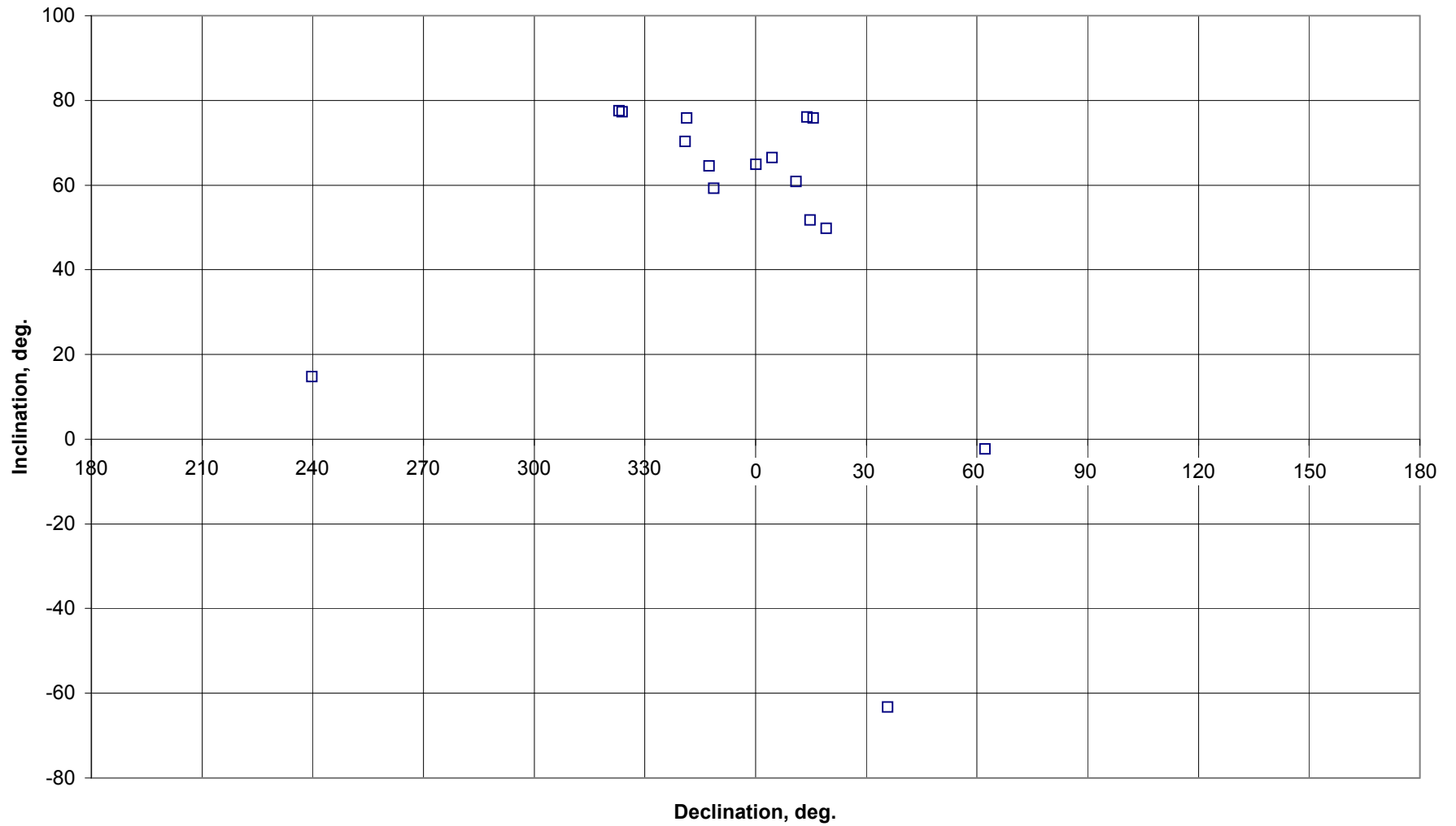
FINAL RESULT

Corrected Dec = -3.50
Corrected Inc = 65.68
Alpha95 = 5.67

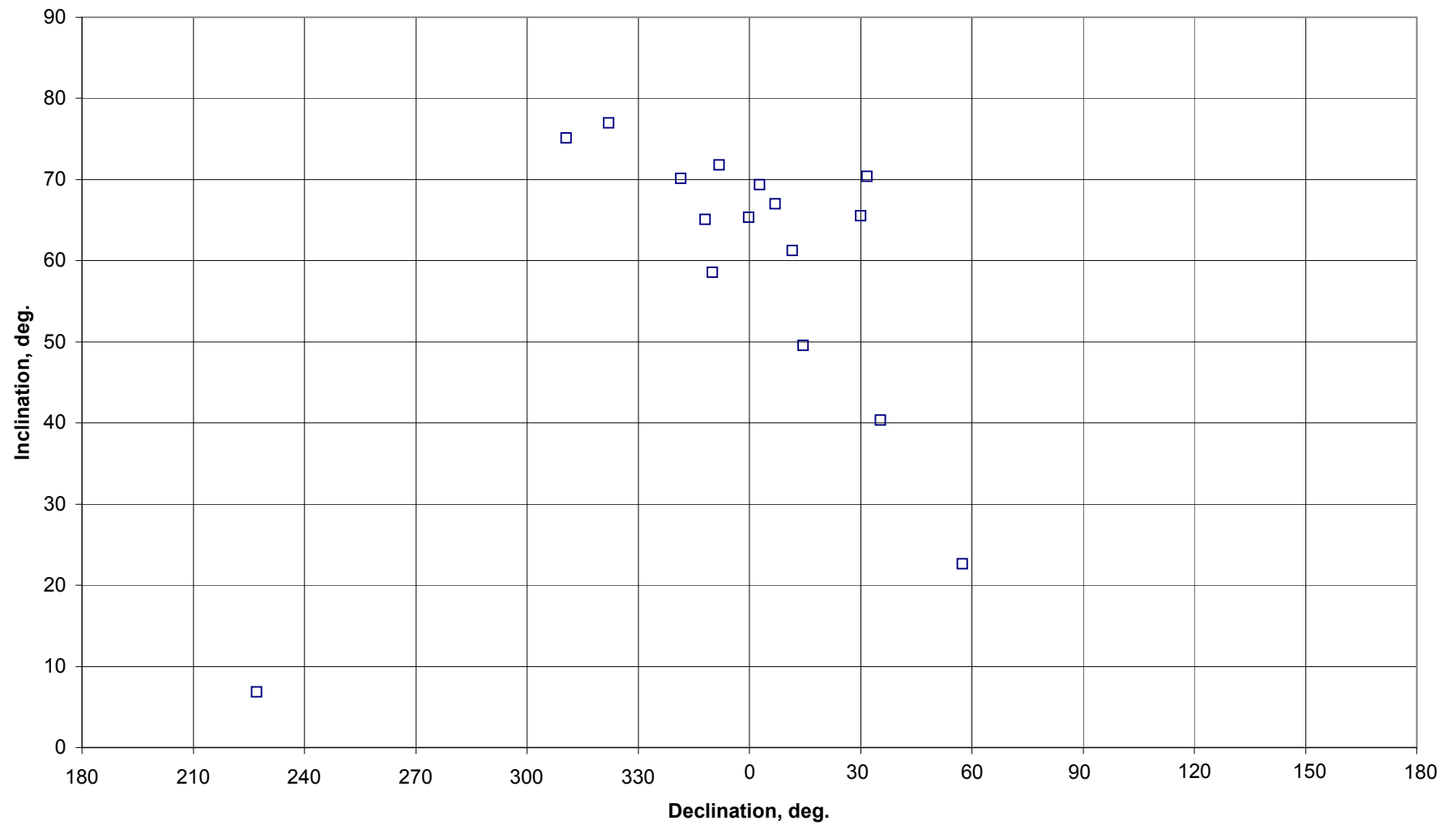
ERROR BARS

Alpha95		Alpha68	
$\delta Dec = \pm$	13.78	$\delta Dec = \pm$	8.16
$\delta Inc = \pm$	5.67	$\delta Inc = \pm$	3.36

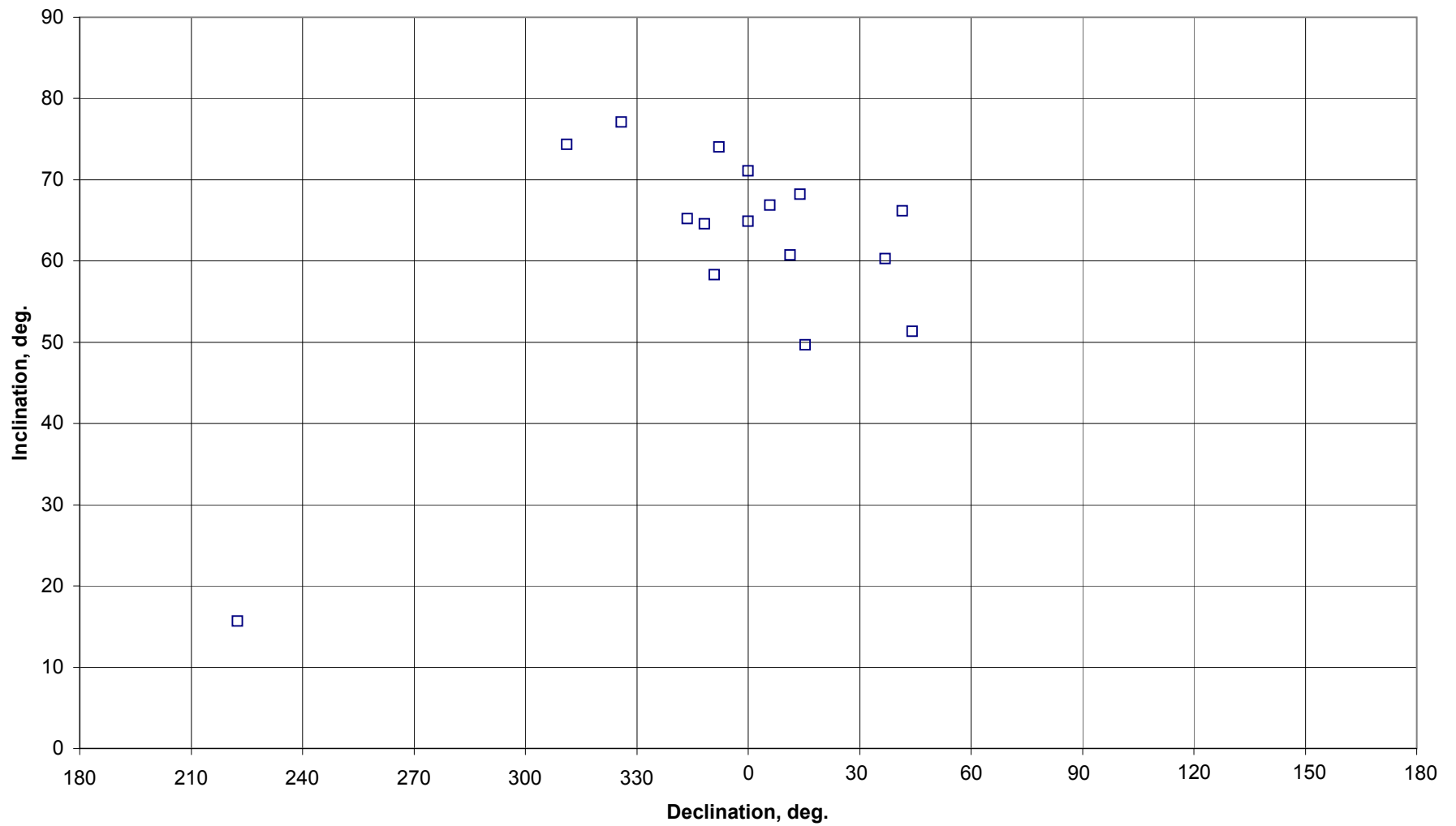
INITIAL SAMPLE SCATTER



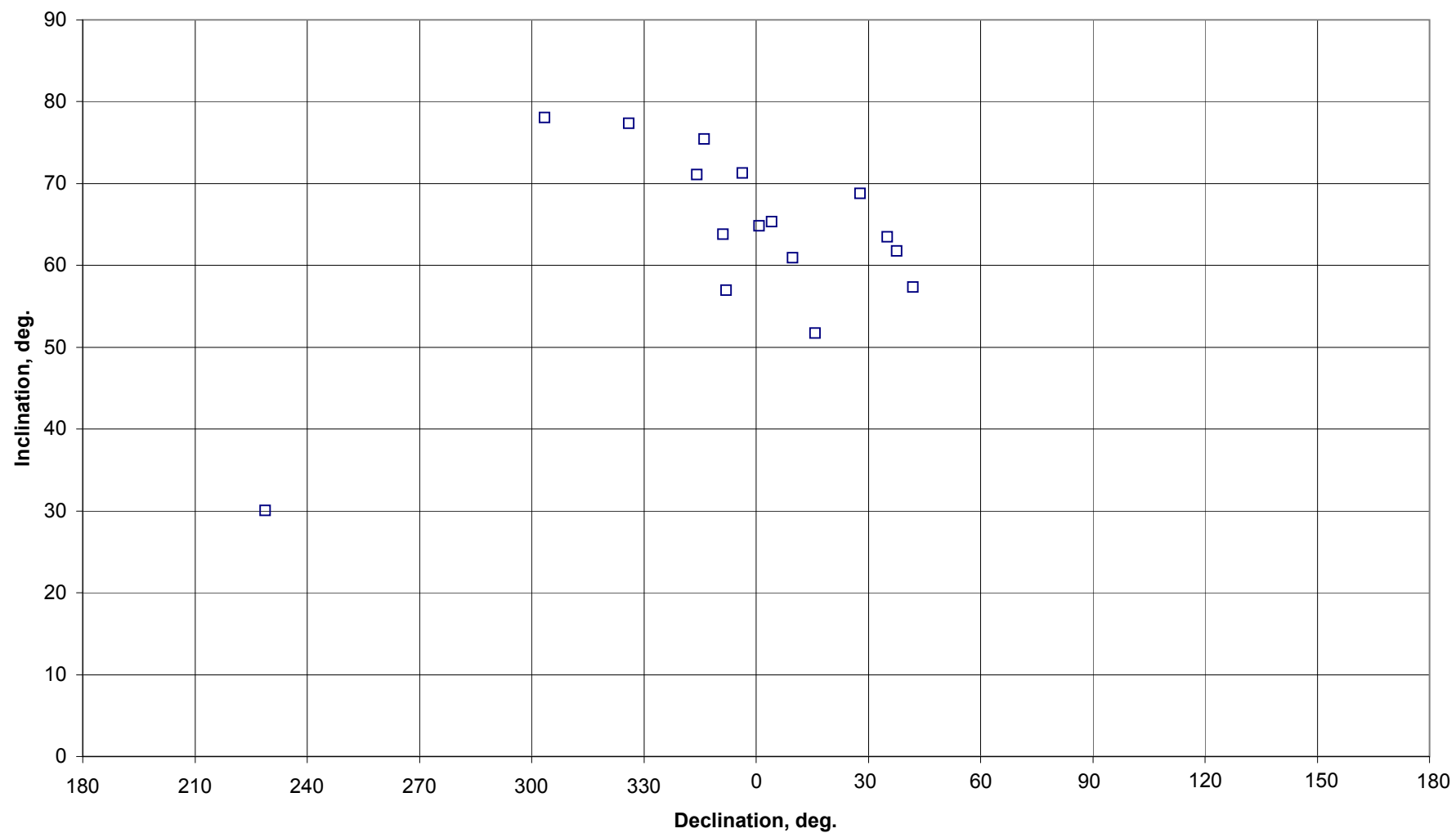
10mT DEMAGNETISED SAMPLE SCATTER



15mT DEMAGNETISED SAMPLE SCATTER



20mT DEMAGNETISED SAMPLE SCATTER



PILOT STEPPED A.F. DEMAGNETISATION MEASUREMENTS

Sample No. 6

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	288.93	1.00	117.88	8.12	263.67	3.94	65.86
2.5	311.02	1.08	120.92	14.08	286.20	6.64	66.96
5.0	285.41	0.99	117.18	8.36	260.11	4.08	65.69
7.5	294.78	1.02	116.53	6.75	270.69	3.31	66.67
10.0	292.94	1.01	113.70	13.83	269.62	6.93	66.98
15.0	257.56	0.89	100.69	10.29	236.84	5.84	66.86
20.0	196.28	0.68	81.75	5.90	178.35	4.13	65.32
30.0	119.85	0.41	47.58	4.94	109.89	5.93	66.47
40.0	66.89	0.23	27.37	2.49	60.99	5.19	65.75
60.0	33.50	0.12	13.74	1.33	30.53	5.53	65.66
80.0	23.18	0.08	9.25	1.35	21.21	8.32	66.21
100.0	17.70	0.06	7.12	0.59	16.20	4.71	66.20

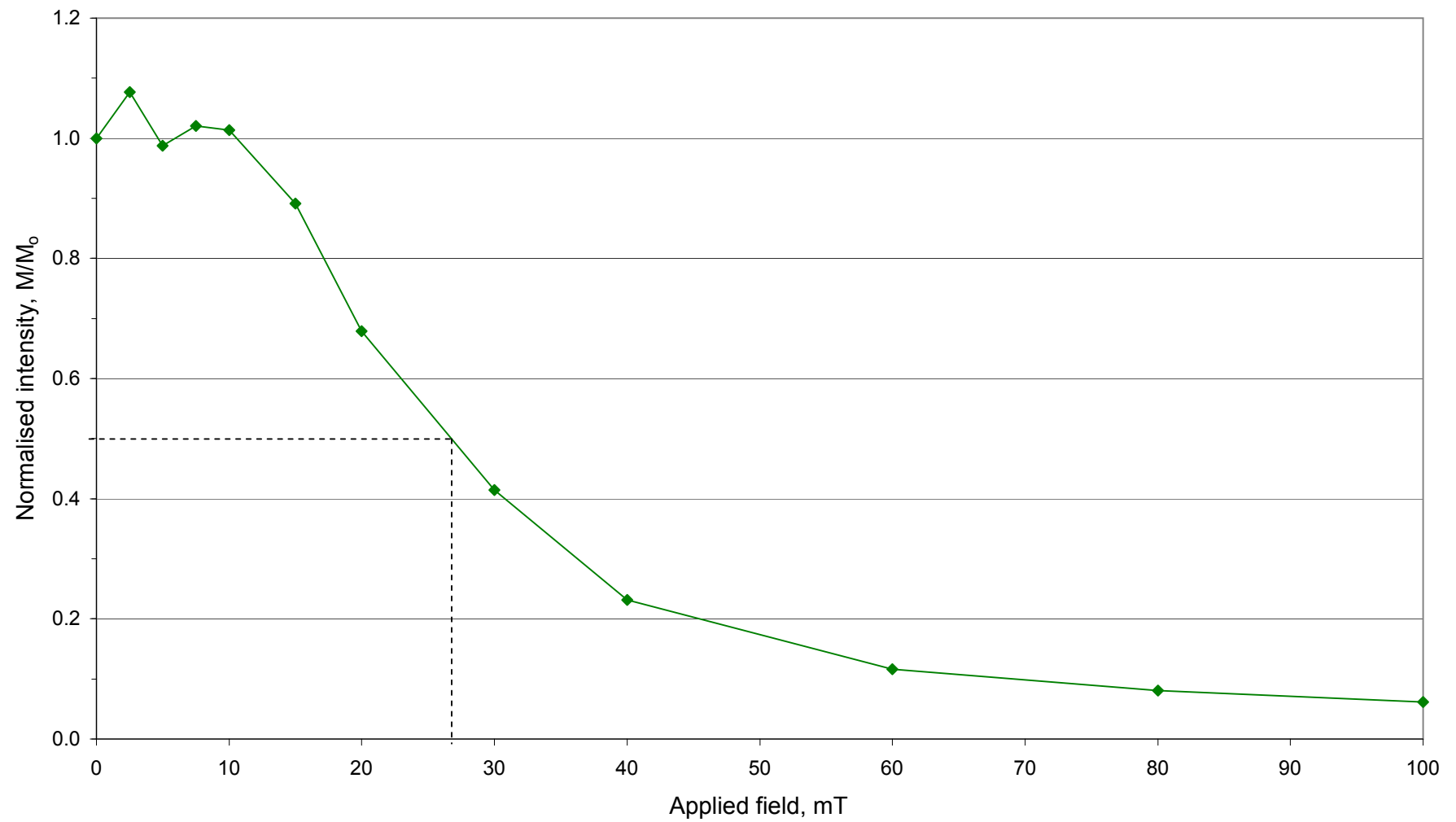
Sample No. 7

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	100.17	1.00	41.77	1.13	91.04	1.55	65.35
2.5	99.74	1.00	41.03	0.05	90.76	0.06	65.51
5.0	97.83	0.98	40.51	0.54	89.05	0.76	65.53
7.5	92.62	0.92	39.07	0.27	83.98	0.40	65.05
10.0	88.02	0.88	36.72	-0.07	80.00	359.89	65.35
15.0	69.31	0.69	29.41	0.01	62.77	0.01	64.90
20.0	49.75	0.50	21.19	0.30	45.01	0.82	64.79
30.0	21.29	0.21	9.20	0.11	19.20	0.67	64.40
40.0	11.91	0.12	5.16	-0.15	10.73	358.34	64.31
60.0	6.68	0.07	2.95	-0.08	5.99	358.38	63.80
80.0	4.16	0.04	1.79	-0.15	3.75	355.20	64.45
100.0	3.04	0.03	1.35	-0.15	2.72	353.56	63.35

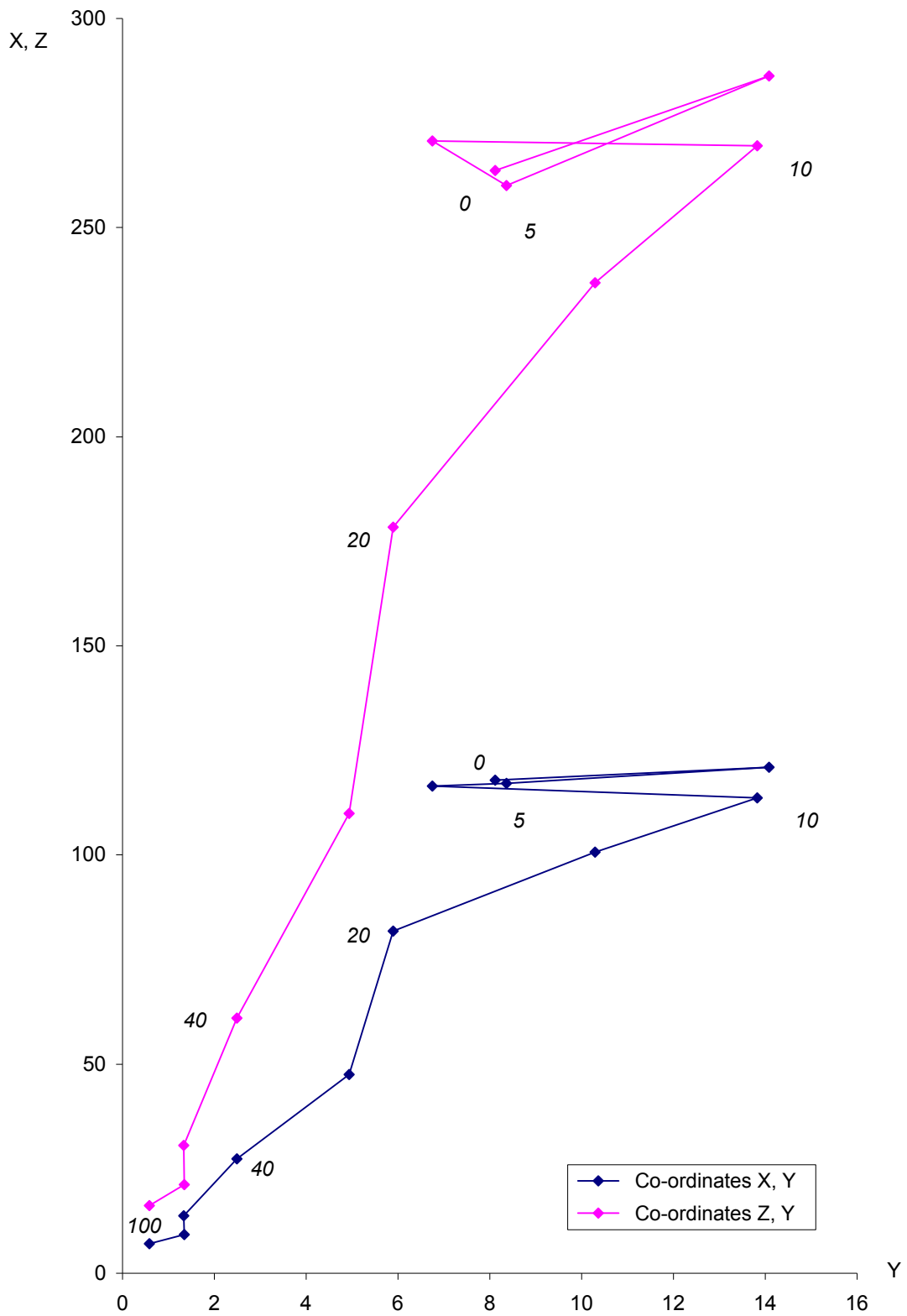
Sample No. 9

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	441.86	1.00	178.89	-43.62	401.67	346.30	65.37
2.5	440.92	1.00	179.00	-41.62	400.80	346.91	65.37
5.0	438.66	0.99	178.46	-39.41	398.78	347.55	65.38
7.5	434.18	0.98	178.23	-40.12	393.87	347.31	65.12
10.0	422.37	0.96	174.28	-36.49	383.00	348.17	65.07
15.0	380.09	0.86	159.79	-33.06	343.28	348.31	64.58
20.0	293.20	0.66	127.94	-19.88	263.06	351.17	63.79
30.0	132.51	0.30	60.14	-7.75	117.82	352.66	62.77
40.0	62.69	0.14	27.43	-3.30	56.28	353.14	63.85
60.0	18.98	0.04	8.36	-1.12	17.00	352.38	63.62
80.0	7.39	0.02	3.29	-0.56	6.60	350.37	63.20
100.0	3.93	0.01	1.76	-0.60	3.46	341.35	61.74

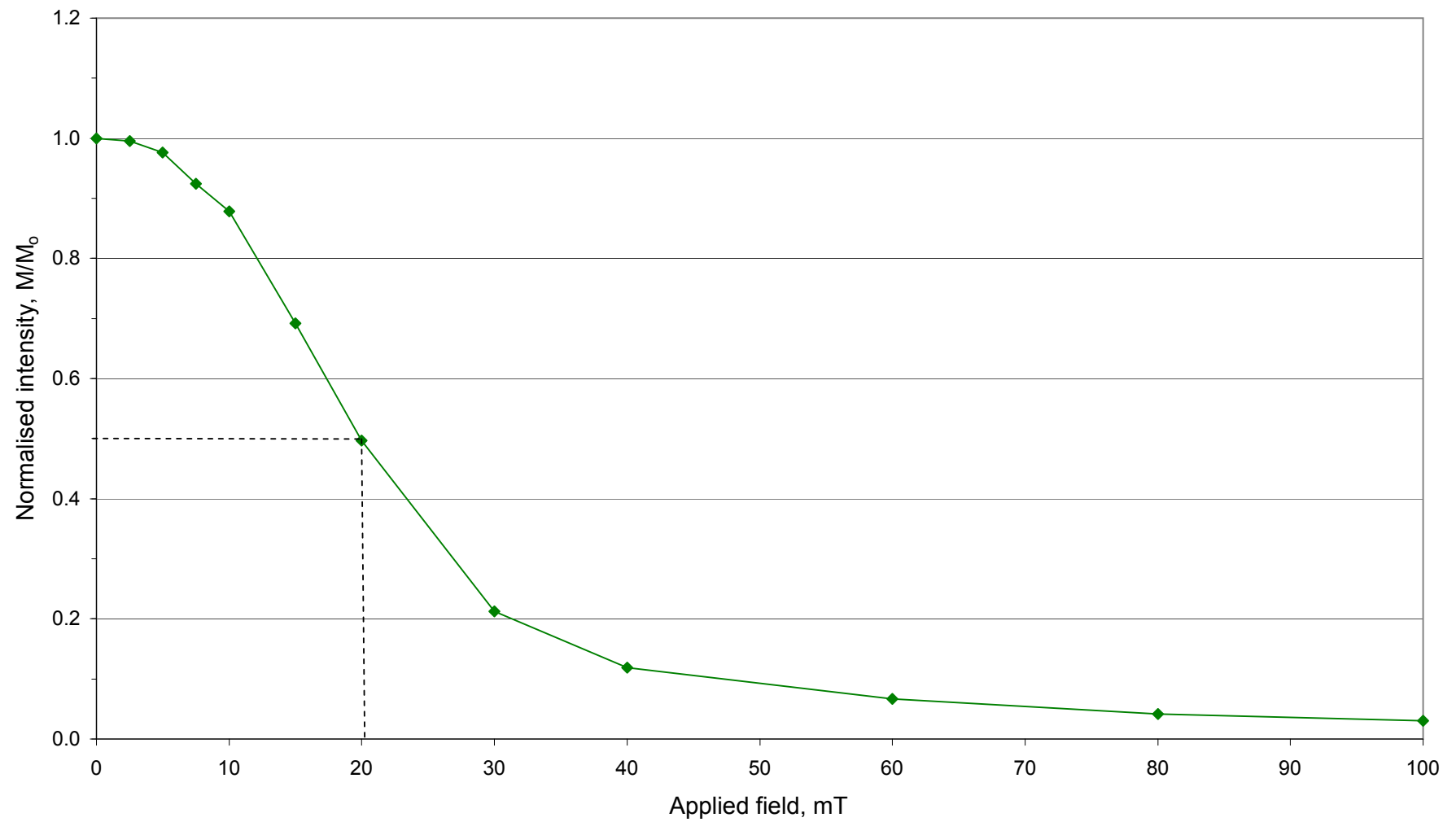
BOTCHERGATE - SAMPLE POINT 6 DEMAGNETISATION: INTENSITY SPECTRUM



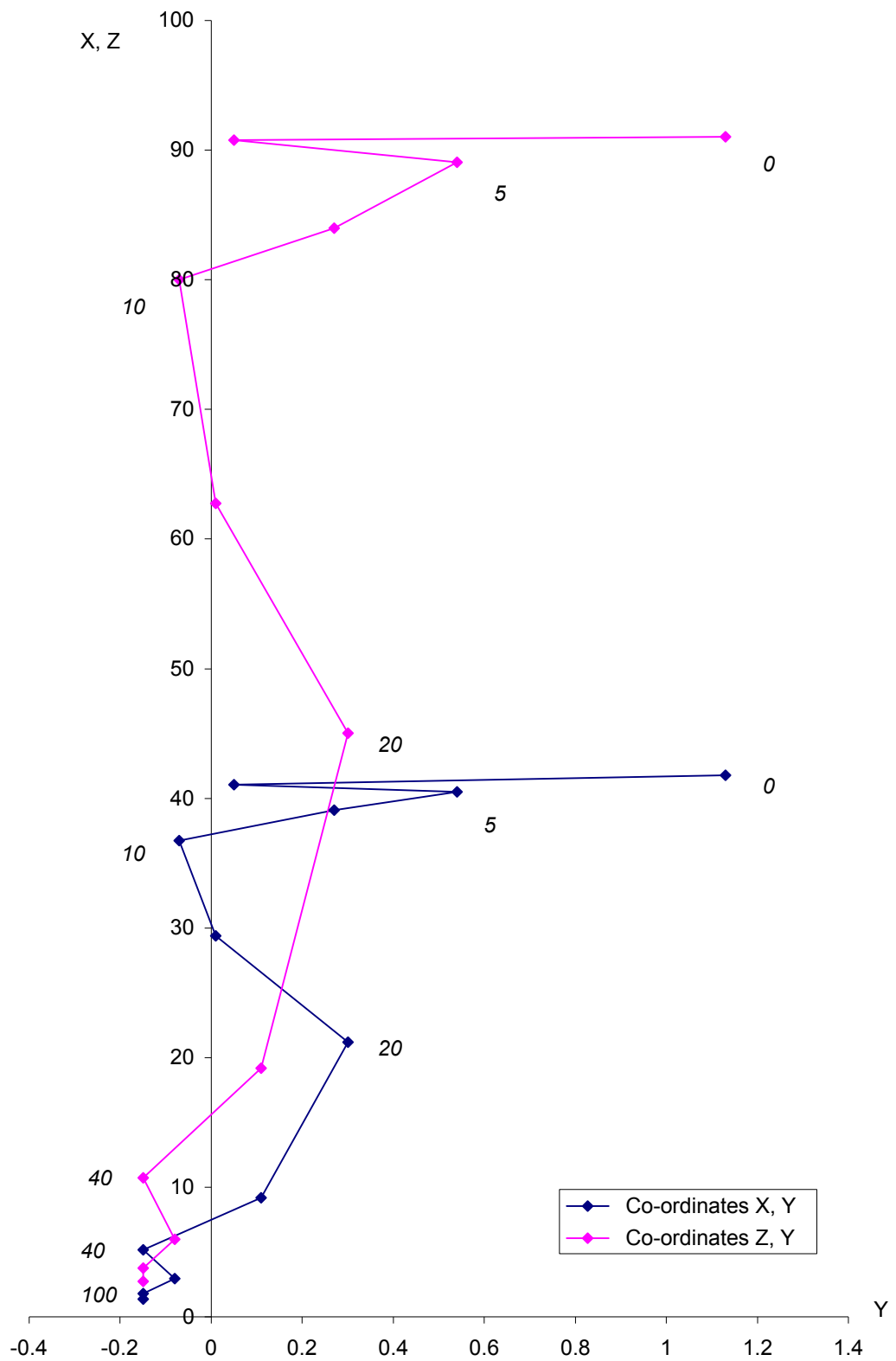
BOTCHERGATE - SAMPLE POINT 6 - ZIJDERVELD PLOT



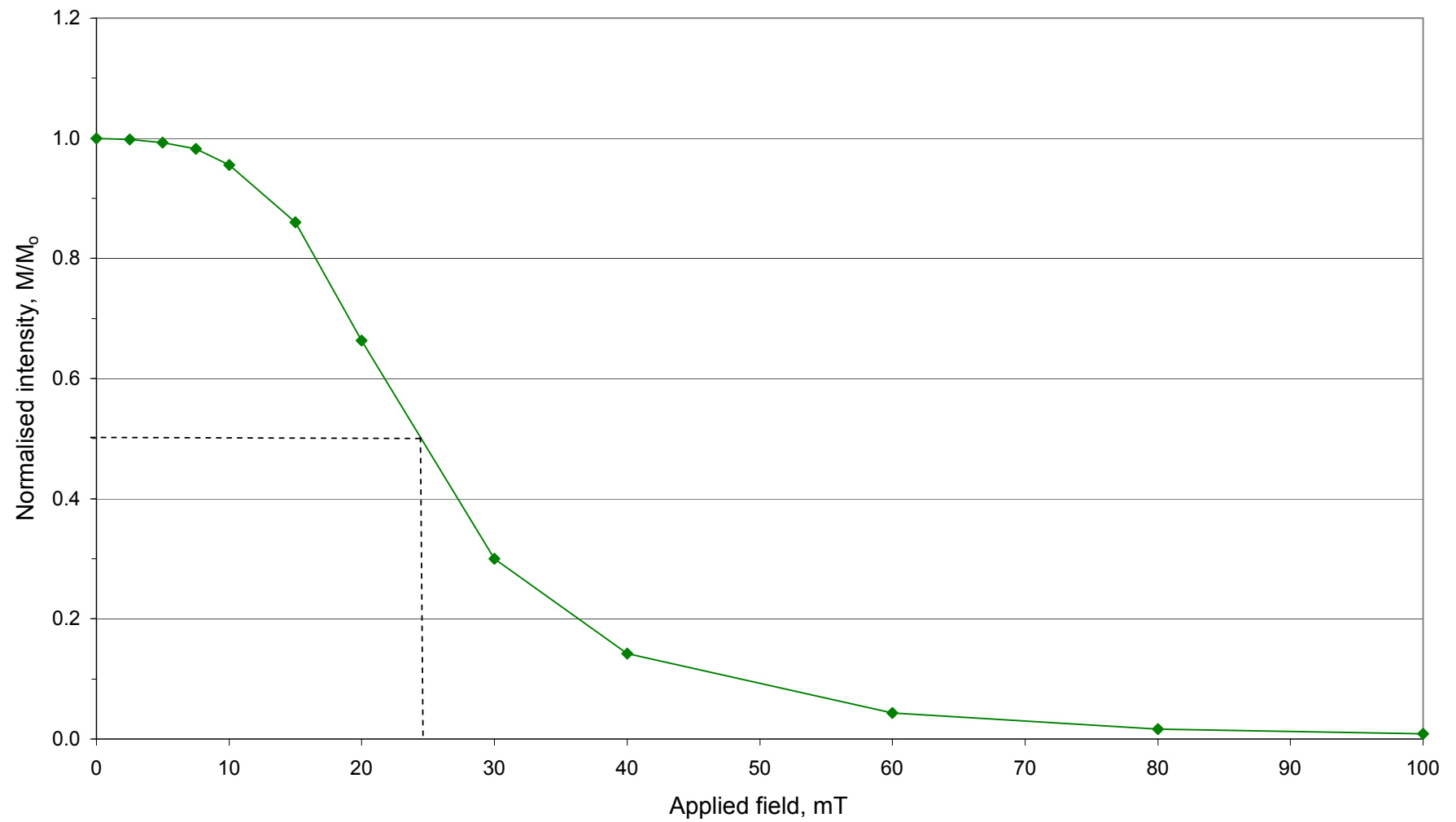
BOTCHERGATE - SAMPLE POINT 7 DEMAGNETISATION: INTENSITY SPECTRUM



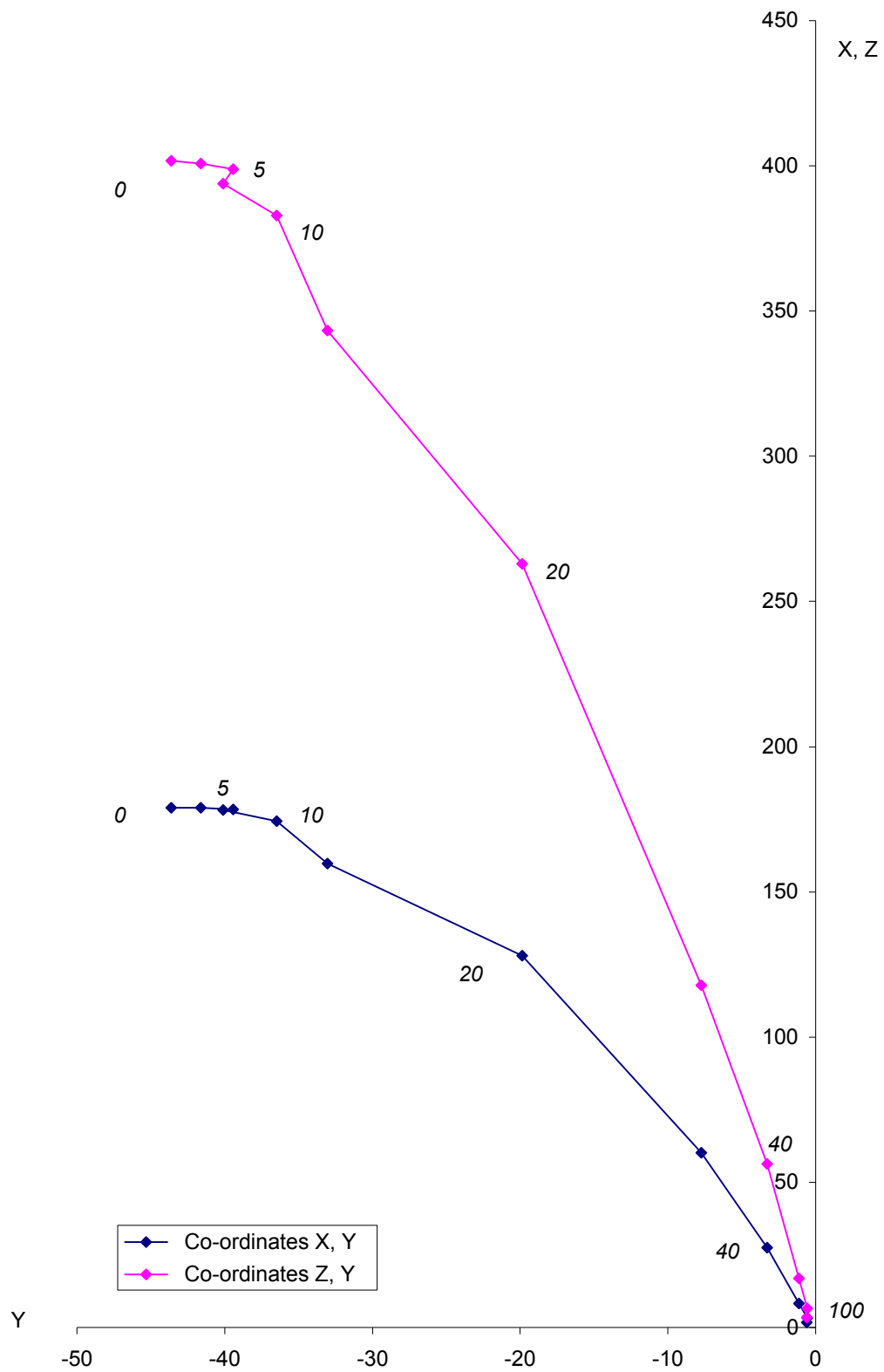
BOTCHERGATE - SAMPLE POINT 7 - ZIJDERVELD PLOT



BOTCHERGATE - SAMPLE POINT 9 DEMAGNETISATION: INTENSITY SPECTRUM



BOTCHERGATE - SAMPLE POINT 9 - ZIJDERVELD PLOT



STEPPED A.F. DEMAGNETISATION MEASUREMENTS FOR OUTLIERS

Sample No. 1

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	2.82	1.00	-1.07	-2.19	1.43	243.89	30.35
2.5	2.47	0.88	-1.34	-1.91	0.79	234.92	18.66
5.0	2.42	0.86	-1.44	-1.89	0.44	232.68	10.53
7.5	2.29	0.81	-1.42	-1.78	0.24	231.55	5.89
10.0	1.95	0.69	-1.31	-1.42	0.23	227.19	6.84
15.0	1.17	0.41	-0.83	-0.76	0.32	222.52	15.67
20.0	0.63	0.22	-0.36	-0.41	0.32	228.80	30.03
30.0	0.21	0.07	0.02	-0.13	0.16	279.75	49.58
40.0	0.12	0.04	-0.07	-0.07	-0.06	221.68	-32.60
60.0	0.10	0.04	-0.02	-0.10	-0.01	256.79	-5.11
80.0	0.14	0.05	-0.01	-0.11	-0.08	264.29	-36.23
100.0	0.09	0.03	0.00	-0.09	-0.02	268.64	-12.42

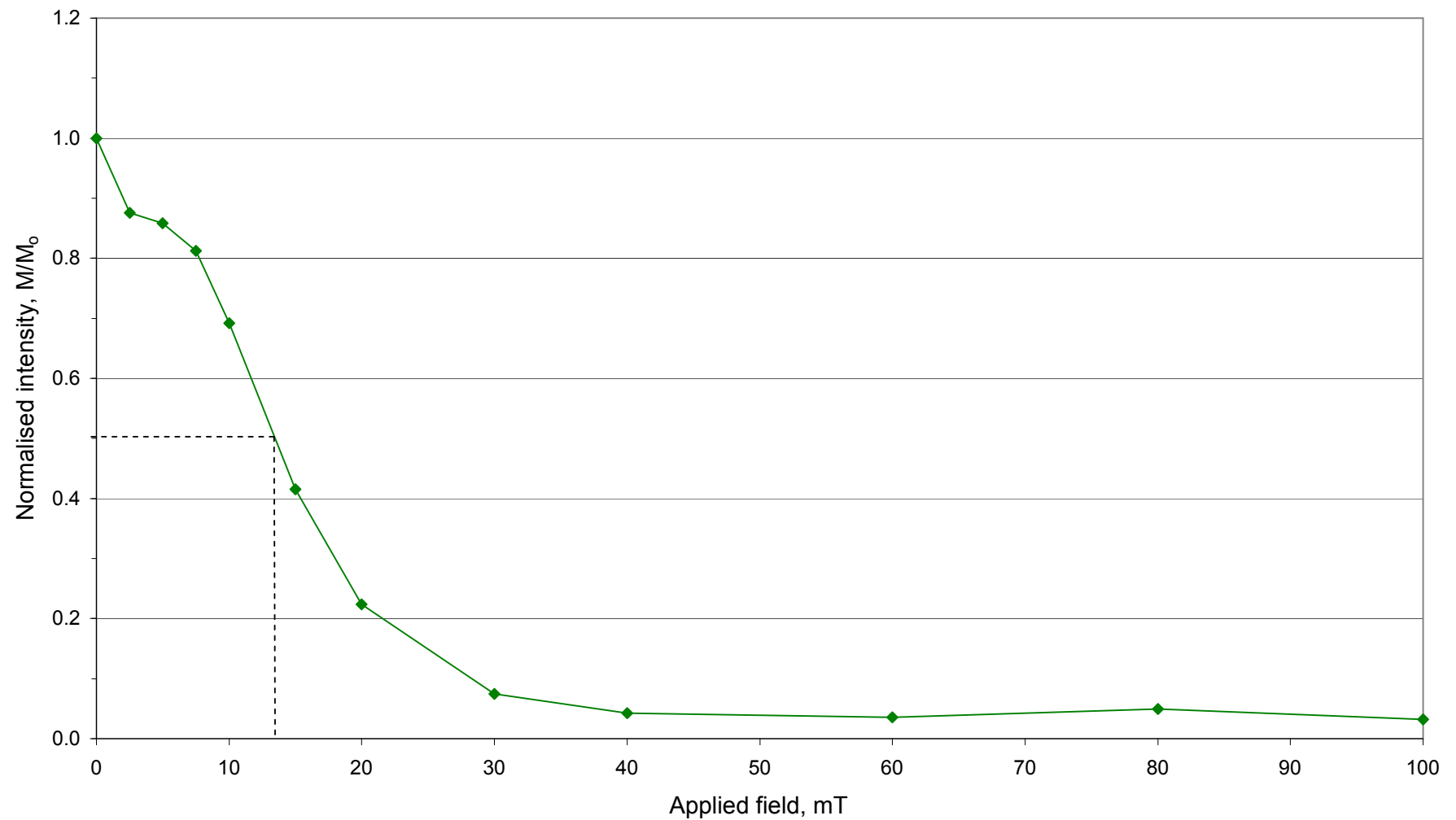
Sample No. 2

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	433.75	1.00	166.02	127.43	-379.91	37.51	-61.15
2.5	428.81	0.99	165.29	128.25	-374.32	37.81	-60.80
5.0	307.67	0.71	157.60	106.85	-241.67	34.14	-51.77
7.5	167.95	0.39	137.55	93.16	-24.67	34.11	-8.45
10.0	181.61	0.42	112.93	80.12	117.51	35.35	40.32
15.0	171.87	0.40	68.20	51.15	149.24	36.87	60.26
20.0	106.07	0.24	39.75	30.66	93.43	37.65	61.75
30.0	48.05	0.11	18.14	13.33	42.45	36.31	62.07
40.0	29.44	0.07	11.27	8.08	25.97	35.62	61.90
60.0	16.00	0.04	6.14	4.20	14.17	34.40	62.29
80.0	11.17	0.03	4.39	2.92	9.85	33.70	61.84
100.0	8.45	0.02	3.34	2.26	7.42	34.13	61.47

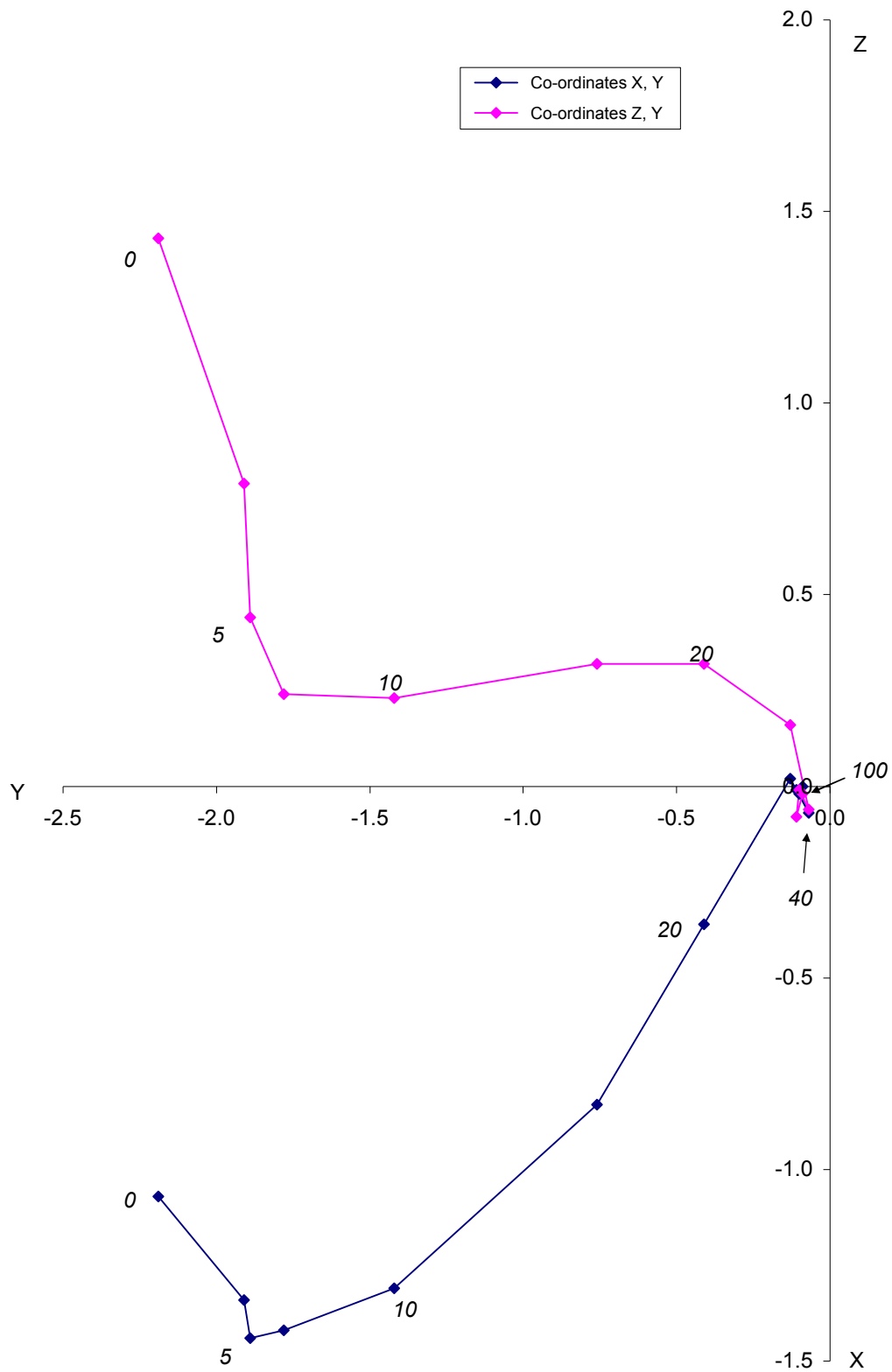
Sample No. 15

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	176.70	1.00	79.30	157.84	-4.27	63.33	-1.39
2.5	176.54	1.00	81.01	156.77	-5.16	62.67	-1.67
5.0	156.28	0.88	72.74	138.31	1.55	62.26	0.57
7.5	105.64	0.60	51.18	90.95	16.40	60.63	8.93
10.0	62.91	0.36	31.17	49.01	24.18	57.54	22.60
15.0	28.57	0.16	12.78	12.45	22.31	44.25	51.36
20.0	18.31	0.10	6.68	4.70	16.38	35.15	63.50
30.0							
40.0	5.73	0.03	2.03	1.30	5.20	32.72	65.11
60.0	2.91	0.02	1.01	0.62	2.66	31.56	66.08
80.0	1.74	0.01	0.67	0.33	1.57	26.34	64.49
100.0	1.14	0.01	0.50	0.15	1.02	16.23	62.96

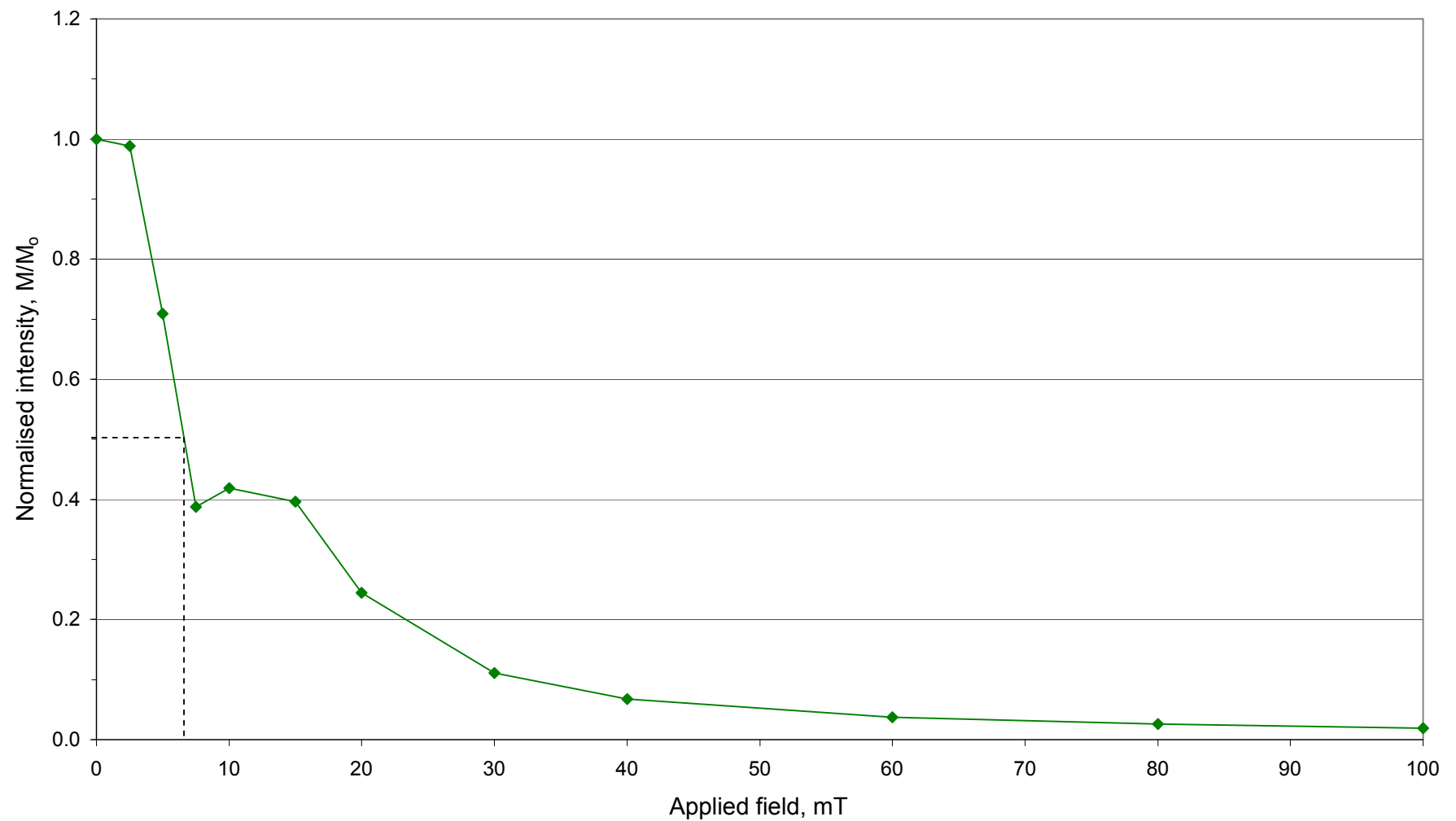
BOTCHERGATE - SAMPLE POINT 1 DEMAGNETISATION: INTENSITY SPECTRUM



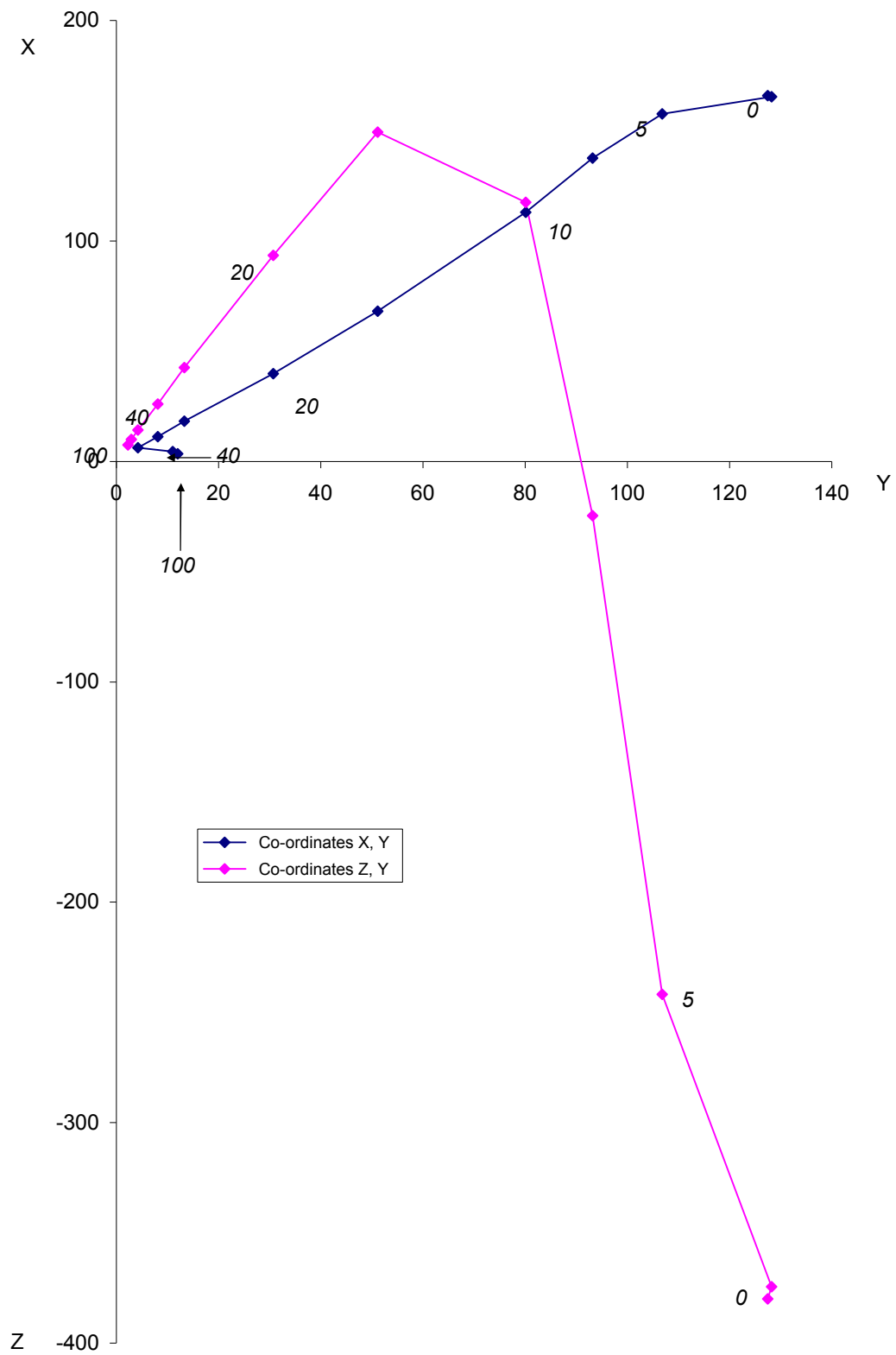
BOTCHERGATE - SAMPLE POINT 1 - ZIJDERVELD PLOT



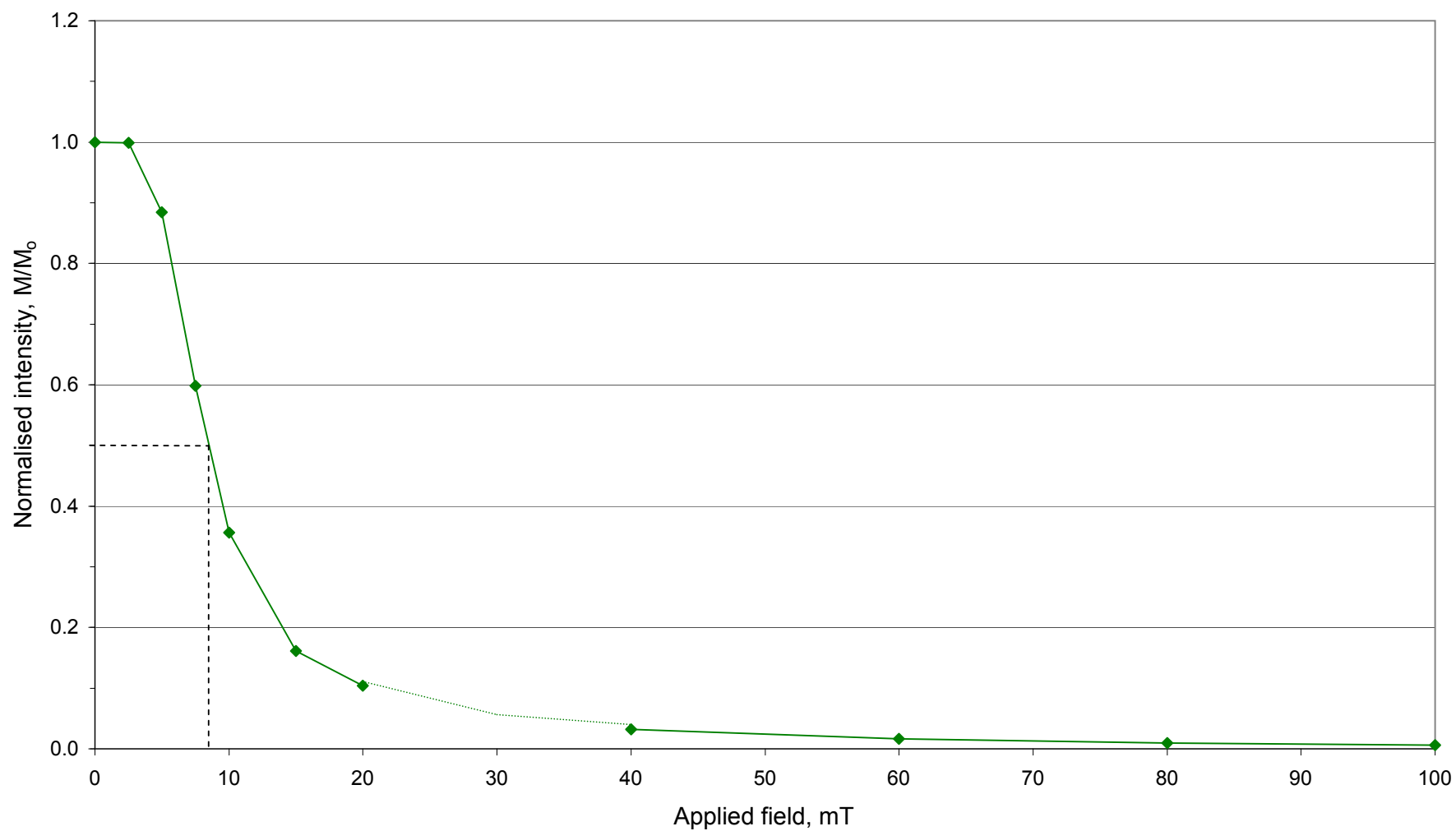
BOTCHERGATE - SAMPLE POINT 2 DEMAGNETISATION: INTENSITY SPECTRUM



BOTCHERGATE - SAMPLE POINT 2 - ZIJDERVELD PLOT



BOTCHERGATE - SAMPLE POINT 15 DEMAGNETISATION: INTENSITY SPECTRUM



BOTCHERGATE - SAMPLE POINT 15 - ZIJDERVELD PLOT

