

SITE INFORMATION

Site Name Stingamires
Area Trench 2
Context No 204
Description Iron smelting furnace
Latitude (+ve N) 54.36
Longitude (+ve E) -1.13
Magnetic Var -3.37
Date Sampled 16/9/2004

MAGNETIC MEASUREMENTS

Sample no.	NRM			Field	After partial demag			Pilot?	Comments
	D	I	Int		D	I	Int		
	<i>degs.</i>	<i>degs.</i>	<i>mA m⁻¹</i>	<i>mT</i>	<i>degs.</i>	<i>degs.</i>	<i>mA m⁻¹</i>	Y/N	
1	11.1	67.4	73.24	20	3.1	60.4	32.53		
2	21.5	65.4	120.77	15	5.9	70.5	110.55	Y	
3	10.5	59.5	84.89	20	8.5	58.3	44.57		
4	14.1	61.4	43.29	10	3.9	61.7	35.72		
5	38.6	53.7	81.21	15	23.0	48.8	45.07		
6	27.6	63.5	160.15	15	32.0	61.8	65.32		
7	309.0	52.1	50.12	20	311.6	43.9	18.01		
8	22.8	65.7	152.71	20	23.8	64.3	104.01	Y	
9	37.0	75.0	255.08	10	29.9	64.9	193.41		
10	10.7	76.9	288.83	20	353.4	66.6	125.90		
11	11.6	70.9	63.49	15	7.2	70.0	35.28		
12	349.2	74.9	299.99	20	351.6	64.0	92.56	Y	
13	343.3	67.2	188.17	20	325.3	62.9	91.28		
14	355.2	44.6	101.53	20	355.0	47.8	53.42		
15	26.6	51.1	544.78	20	18.6	54.7	196.47		
16	32.3	49.4	72.76	15	35.5	54.3	51.94		
17	30.3	60.6	490.44	15	30.9	61.6	368.40	Y	
18	48.2	69.1	108.46	15	46.6	68.7	60.06		
19	22.2	60.2	166.20	10	13.9	61.1	152.76		
20	15.4	63.2	371.83	10	0.5	60.4	369.47	Y	
21	307.9	75.3	50.87	10	318.0	74.6	45.73		x10 atten.
22	325.0	67.6	149.29	10	338.7	70.7	135.56		
23	14.3	66.0	139.64	15	2.8	57.8	73.75		x10 atten.

STATISTICS FOR NRM

Sample no.	NRM				
	D	I	x	y	z
	degs.	degs.			
1	11.10	67.40	0.37711	0.07399	0.92321
2	21.50	65.40	0.38731	0.15257	0.90924
3	10.50	59.50	0.49904	0.09249	0.86163
4	14.10	61.40	0.46427	0.11662	0.87798
5	38.60	53.70	0.46267	0.36934	0.80593
6	27.60	63.50	0.39542	0.20672	0.89493
7	309.00	52.10	0.38658	-0.47739	0.78908
8	22.80	65.70	0.37936	0.15947	0.91140
9	37.00	75.00	0.20670	0.15576	0.96593
10	10.70	76.90	0.22271	0.04208	0.97398
11	11.60	70.90	0.32053	0.06580	0.94495
12	349.20	74.90	0.25589	-0.04881	0.96547
13	343.30	67.20	0.37117	-0.11136	0.92186
14	355.20	44.60	0.70953	-0.05958	0.70215
15	26.60	51.10	0.56150	0.28118	0.77824
16	32.30	49.40	0.55007	0.34774	0.75927
17	30.30	60.60	0.42384	0.24767	0.87121
18	48.20	69.10	0.23778	0.26594	0.93420
19	22.20	60.20	0.46013	0.18778	0.86777
20	15.40	63.20	0.43469	0.11973	0.89259
21	307.90	75.30	0.15588	-0.20024	0.96727
22	325.00	67.60	0.31215	-0.21857	0.92455
23	14.30	66.00	0.39413	0.10046	0.91355

Number = 23
Sum x = 8.96849
Sum y = 1.86939
Sum z = 20.35639
R = 22.32288
x bar = 0.40176
y bar = 0.08374
z bar = 0.91191

Mean Dec = 11.77
Mean Inc = 65.77
Alpha95 = 5.39

STATISTICS FOR PARTIAL DEMAGNETISATION

Sample no.	Demagnetisation				
	D	I	x	y	z
	deg.	deg.			
1	3.10	60.40	0.49322	0.02671	0.86949
2	5.90	70.50	0.33204	0.03431	0.94264
3	8.50	58.30	0.51970	0.07767	0.85081
4	3.90	61.70	0.47299	0.03225	0.88048
5					
6	32.00	61.80	0.40075	0.25041	0.88130
7					
8	23.80	64.30	0.39678	0.17500	0.90108
9	29.90	64.90	0.36774	0.21146	0.90557
10	353.40	66.60	0.39452	-0.04565	0.91775
11	7.20	70.00	0.33932	0.04287	0.93969
12	351.60	64.00	0.43367	-0.06404	0.89879
13					
14					
15	18.60	54.70	0.54768	0.18431	0.81614
16	35.50	54.30	0.47507	0.33886	0.81208
17	30.90	61.60	0.40812	0.24425	0.87965
18	46.60	68.70	0.24959	0.26393	0.93169
19	13.90	61.10	0.46913	0.11610	0.87546
20	0.50	60.40	0.49392	0.00431	0.86949
21					
22					
23	2.80	57.80	0.53224	0.02603	0.84619

Number = 17
Sum x = 7.32646
Sum y = 1.91879
Sum z = 15.01833
R = 16.81990
x bar = 0.43558
y bar = 0.11408
z bar = 0.89289

Mean Dec = 14.68
Mean Inc = 63.24
Alpha95 = 3.81

Alpha68 = 2.28

CORRECTIONS

Mean Dec = 14.68
Mean Inc = 63.24

Correction for magnetic variation

Mean Dec = 11.31
Mean Inc = 63.24

Correction to Meriden (CVP)

Uncorrected Dec = 11.31
Uncorrected Inc = 63.24
Latitude = 54.36
Longitude = -1.132

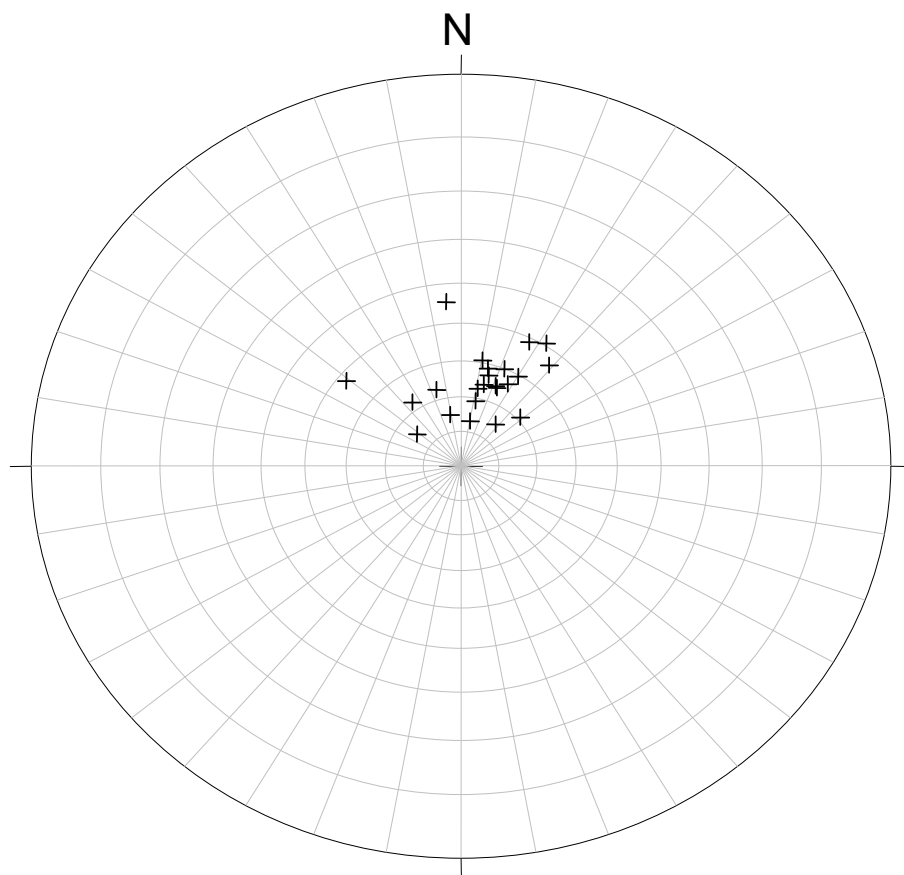
Kai = 45.24
Latitude of pole = 77.95
Beta1 = 41.83
Longitude of pole = 137.04
Geomag colat = 47.19
Corrected Inc = 61.64
Beta 2 = 41.34
Corrected Dec = 10.84

FINAL RESULT

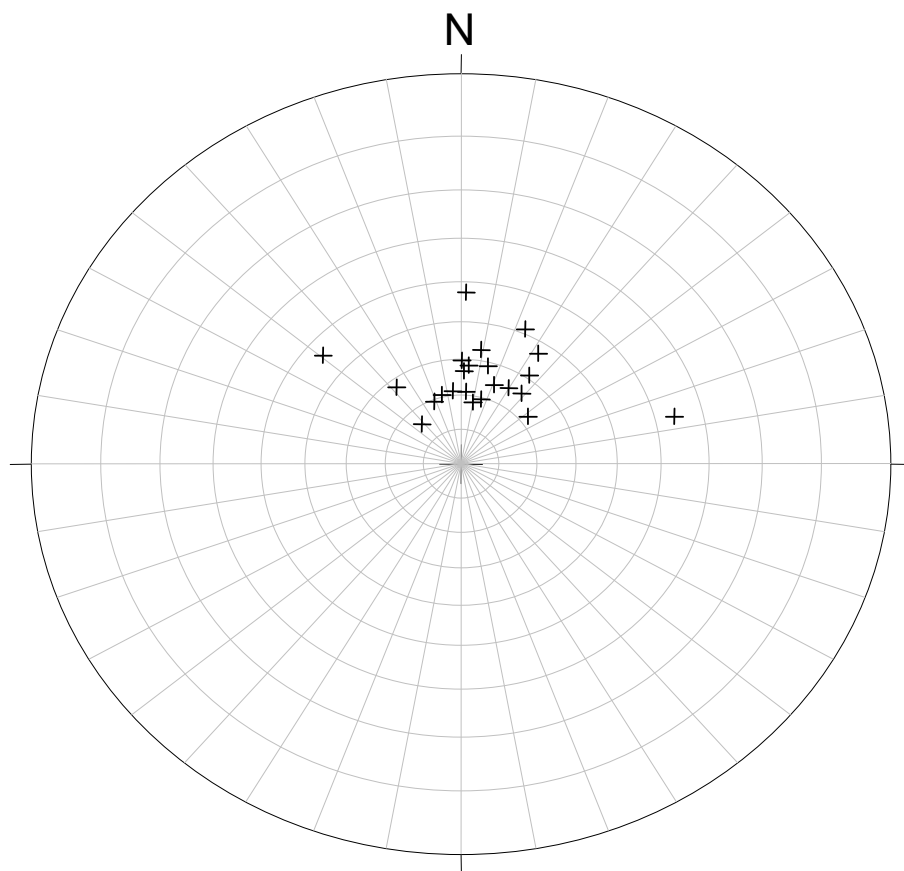
Corrected Dec = 10.84
Corrected Inc = 61.64
Alpha95 = 3.81

ERROR BARS

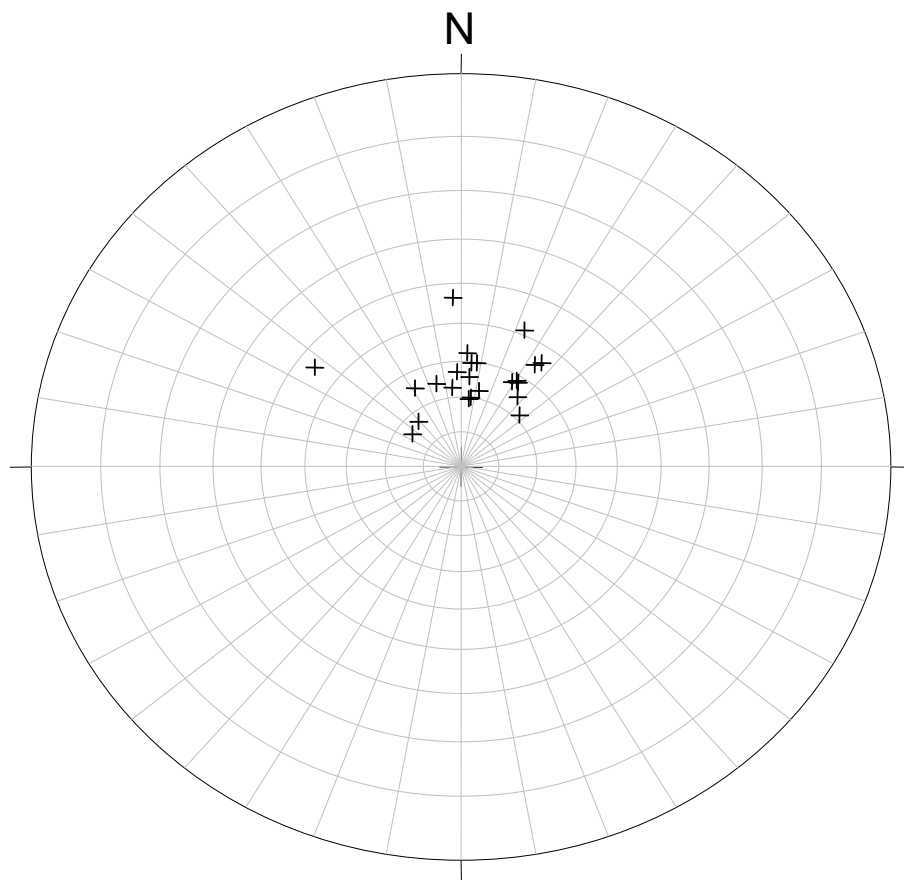
Alpha95		Alpha68	
$\delta Dec = \pm$	8.01	$\delta Dec = \pm$	4.80
$\delta Inc = \pm$	3.81	$\delta Inc = \pm$	2.28



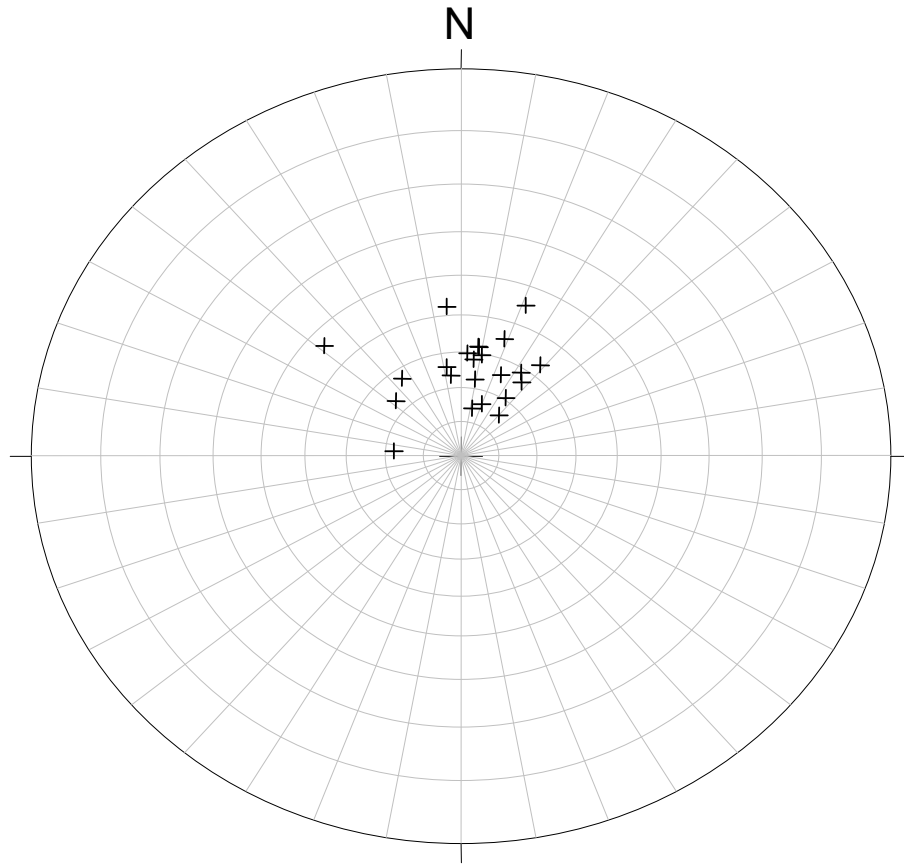
Stingamires Trench 2 NRM data stereoplot



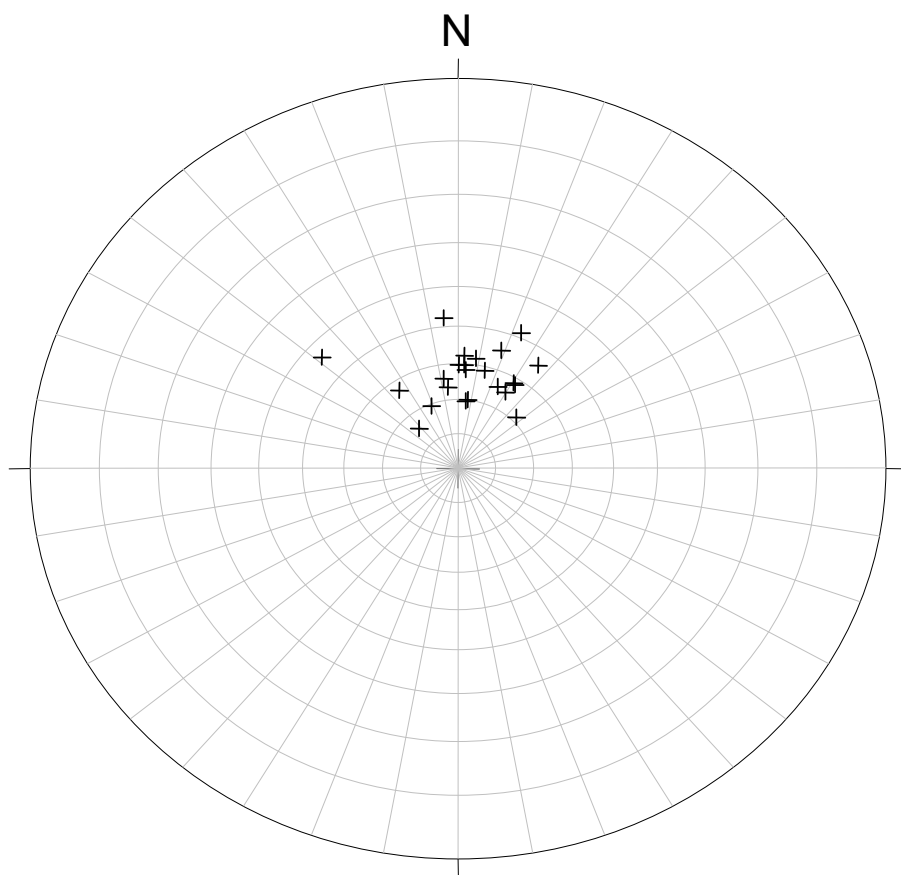
Stingamires Trench 2 10mT demagnetisation data stereoplot



Stingamires Trench 2 15mT demagnetisation data stereoplot



Stingamires Trench 2 20mT demagnetisation data stereoplot



Stingamires Trench 2 final group data stereoplot

PILOT STEPPED A.F. DEMAGNETISATION MEASUREMENTS

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	128.28	1.00	47.20	0.25	119.28	0.30	68.40
2.5	123.48	0.96	37.21	11.70	117.15	17.50	71.60
5.0	126.18	0.98	32.98	3.76	121.73	6.50	74.70
7.5	126.61	0.99	40.17	14.10	119.24	19.30	70.40
10.0	122.47	0.95	37.26	6.49	116.48	9.90	72.00
15.0	110.55	0.86	36.63	3.78	104.24	5.90	70.50
20.0	91.87	0.72	24.01	8.69	88.25	19.90	73.90
30.0	60.11	0.47	17.47	5.04	57.29	16.10	72.40
40.0	42.15	0.33	13.95	4.21	39.55	16.80	69.80
60.0	27.70	0.22	8.68	-0.14	26.31	359.10	71.70
80.0	22.50	0.18	6.84	2.44	21.30	19.70	71.20
100.0	19.80	0.15	6.14	0.20	18.82	1.90	71.90

Sample No. **8**

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	148.04	1.00	49.98	17.05	138.30	18.80	69.10
2.5	157.40	1.06	62.89	25.95	141.94	22.40	64.40
5.0	144.76	0.98	53.62	13.41	133.79	14.00	67.60
7.5	138.62	0.94	54.35	21.20	125.75	21.30	65.10
10.0	132.10	0.89	51.04	19.24	120.31	20.70	65.60
15.0	119.99	0.81	48.56	26.78	106.40	28.90	62.50
20.0	104.01	0.70	41.32	18.25	93.69	23.80	64.30
30.0	80.71	0.55	33.20	17.66	71.41	28.00	62.20
40.0	60.93	0.41	21.49	7.29	56.55	18.70	68.10
60.0	37.39	0.25	13.03	3.39	34.88	14.60	68.90
80.0	24.06	0.16	9.29	4.28	21.78	24.70	64.90
100.0	17.03	0.12	5.71	3.14	15.73	28.80	67.50

Sample No. 12

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	340.83	1.00	105.71	-0.97	324.02	359.50	71.90
2.5	326.92	0.96	118.50	-29.73	303.24	345.90	68.10
5.0	283.72	0.83	96.52	-25.91	265.53	345.00	69.40
7.5	251.89	0.74	100.54	-21.10	230.00	348.10	65.90
10.0	216.64	0.64	73.44	-18.59	202.96	345.80	69.50
15.0	152.73	0.45	61.23	-16.90	138.90	344.60	65.40
20.0	92.56	0.27	40.17	-5.94	83.17	351.60	64.00
30.0	36.70	0.11	14.37	-3.28	33.61	347.20	66.30
40.0	21.66	0.06	9.21	-3.97	19.20	336.70	62.40
60.0	10.26	0.03	4.26	-0.53	9.32	352.90	65.30
80.0	5.78	0.02	2.21	-0.37	5.33	350.50	67.20
100.0	3.50	0.01	1.02	-0.50	3.31	333.80	71.20

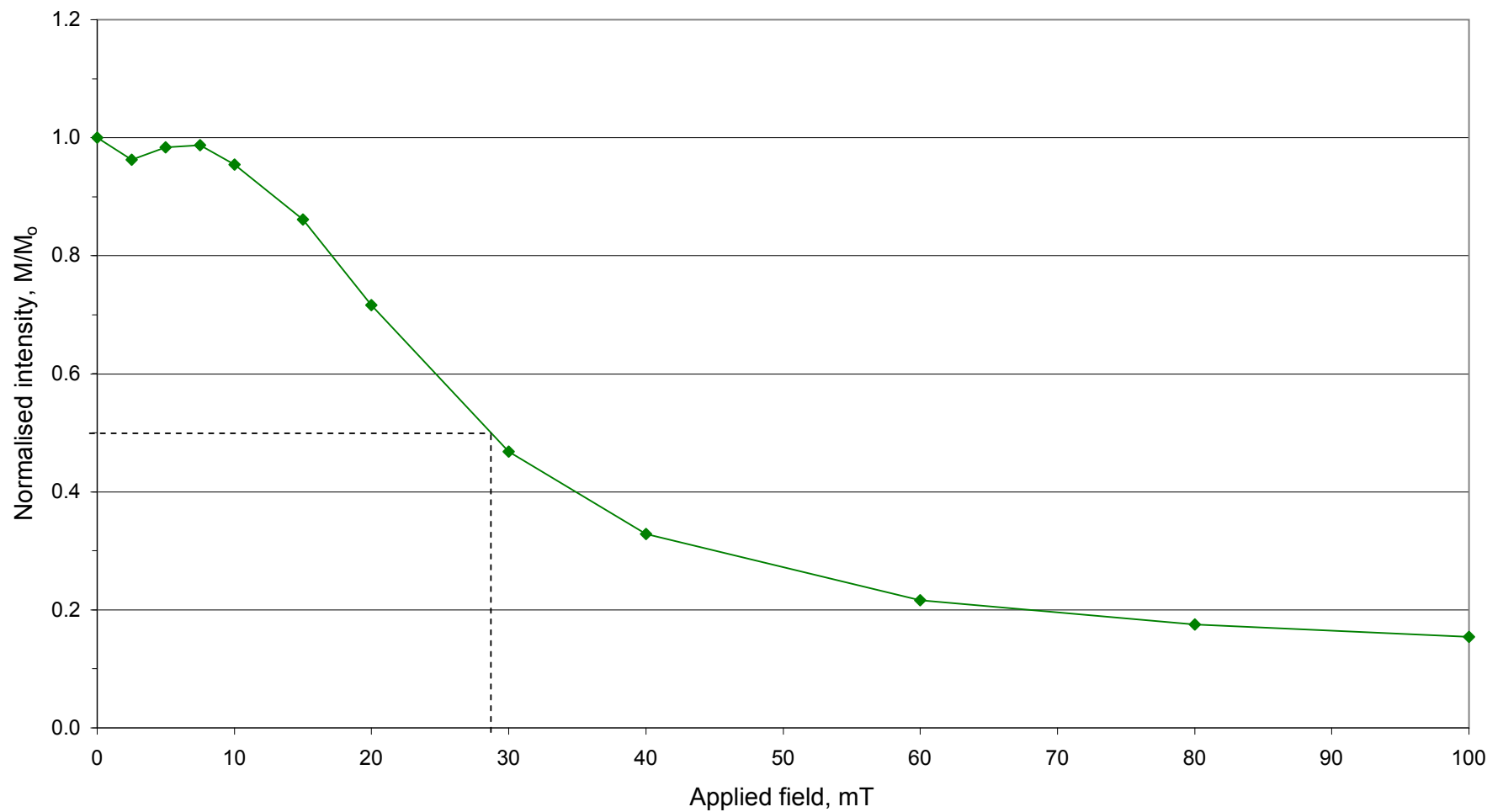
Sample No. 17

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	50.47	1.00	17.81	13.69	45.20	37.50	63.60
2.5	50.36	1.00	18.26	13.91	44.82	37.30	62.90
5.0	49.60	0.98	18.61	9.79	44.92	27.70	64.90
7.5	48.85	0.97	18.74	11.81	43.54	32.20	63.00
10.0	46.43	0.92	15.79	12.41	41.86	38.20	64.40
15.0	36.84	0.73	15.04	8.98	32.41	30.90	61.60
20.0	23.73	0.47	8.53	6.36	21.21	36.70	63.40
30.0	10.80	0.21	4.40	2.88	9.43	33.20	60.80
40.0	6.89	0.14	2.81	1.87	6.01	33.60	60.70
60.0	4.79	0.09	2.05	1.20	4.16	30.40	60.30
80.0	3.92	0.08	1.73	0.83	3.41	25.50	60.70
100.0	3.28	0.07	1.29	0.68	2.94	28.00	63.70

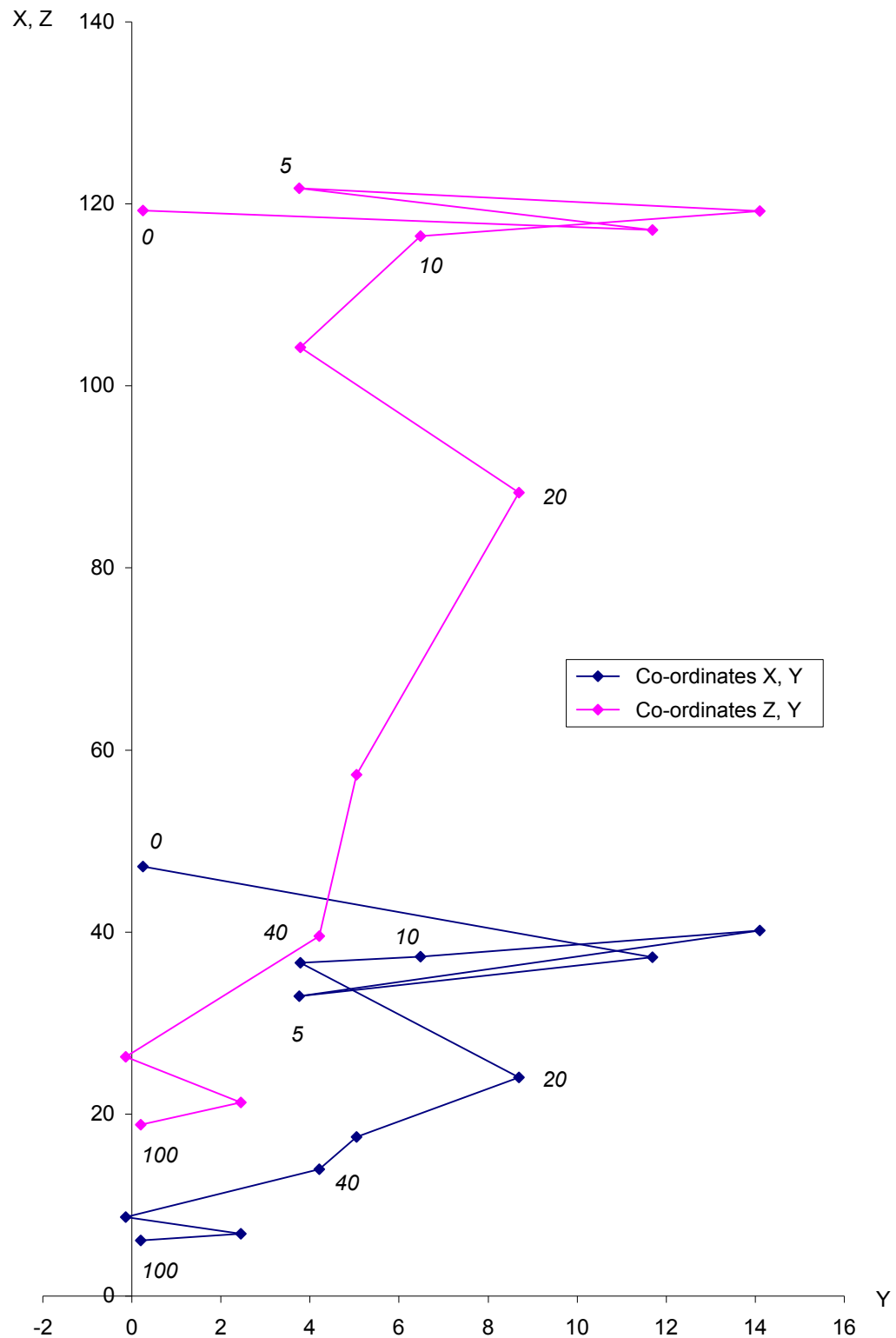
Sample No. 20

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	389.50	1.00	142.67	48.32	359.19	18.70	67.20
2.5	399.87	1.03	194.56	42.30	346.78	12.30	60.10
5.0	394.94	1.01	190.06	30.46	344.86	9.10	60.80
7.5	388.19	1.00	192.68	14.23	336.69	4.20	60.20
10.0	369.47	0.95	182.46	1.45	321.28	0.50	60.40
15.0	287.58	0.74	141.26	19.55	249.73	7.90	60.30
20.0	179.80	0.46	87.02	16.08	156.52	10.50	60.50
30.0	81.98	0.21	39.21	8.68	71.47	12.50	60.70
40.0	59.93	0.15	28.38	4.43	52.60	8.90	61.40
60.0	46.56	0.12	23.22	4.86	40.06	11.80	59.40
80.0	39.26	0.10	20.29	2.81	33.49	7.90	58.60
100.0	33.86	0.09	16.31	0.46	29.67	1.60	61.20

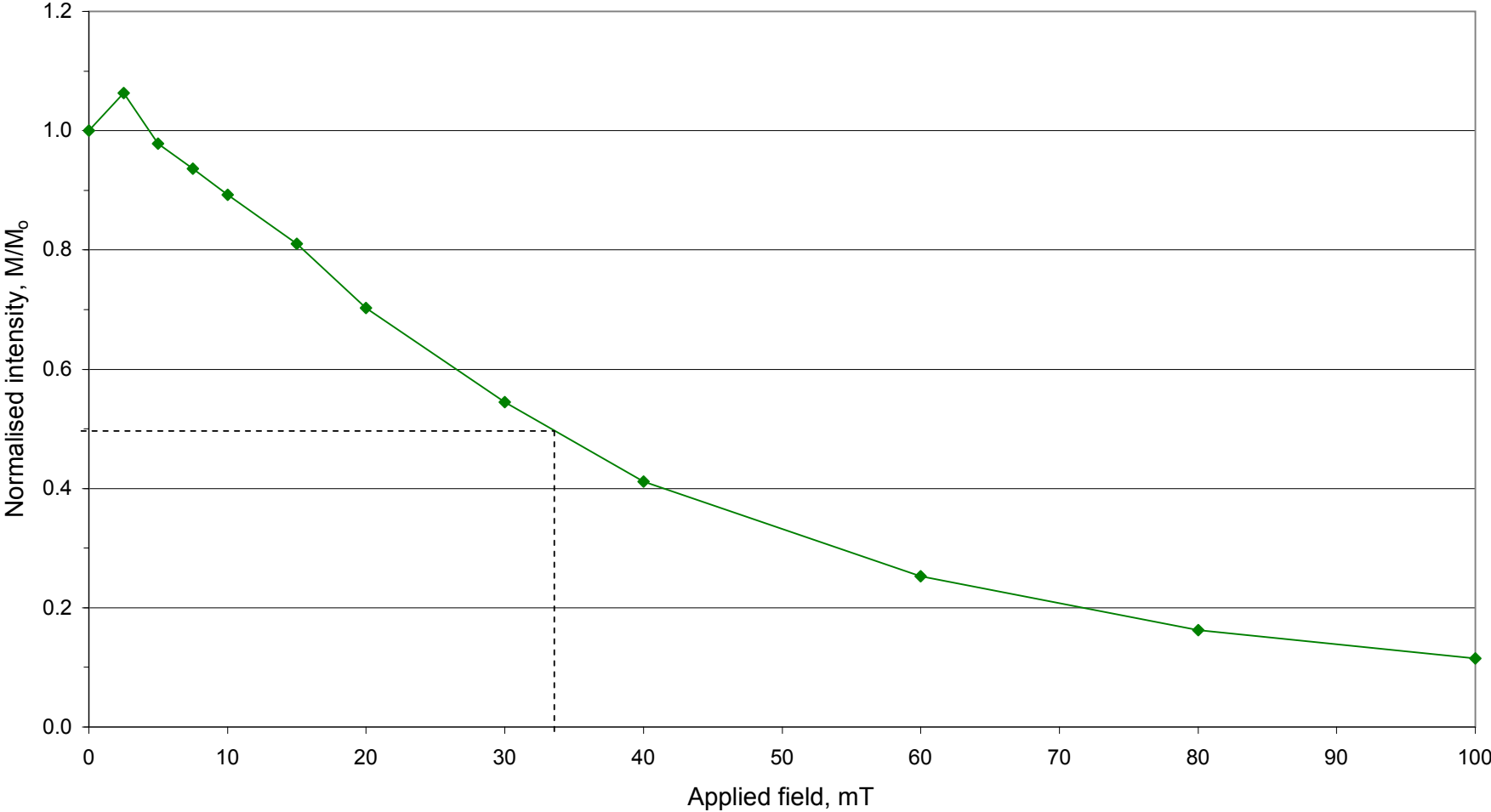
STINGAMIRES TRENCH 2 - SAMPLE POINT 2 DEMAGNETISATION: INTENSITY SPECTRUM



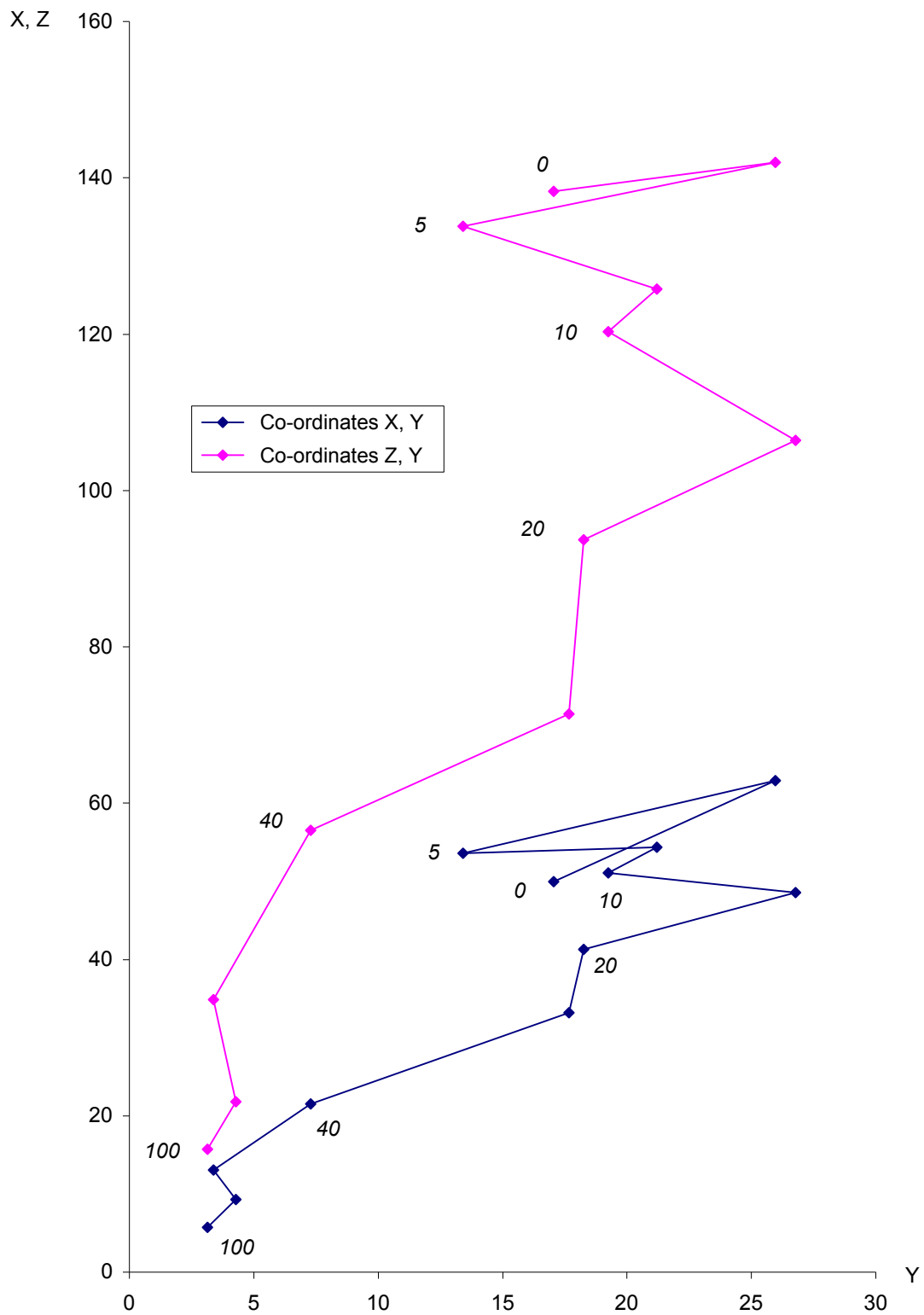
STINGAMIRES TRENCH 2 - SAMPLE POINT 2 - ZIJDERVELD PLOT



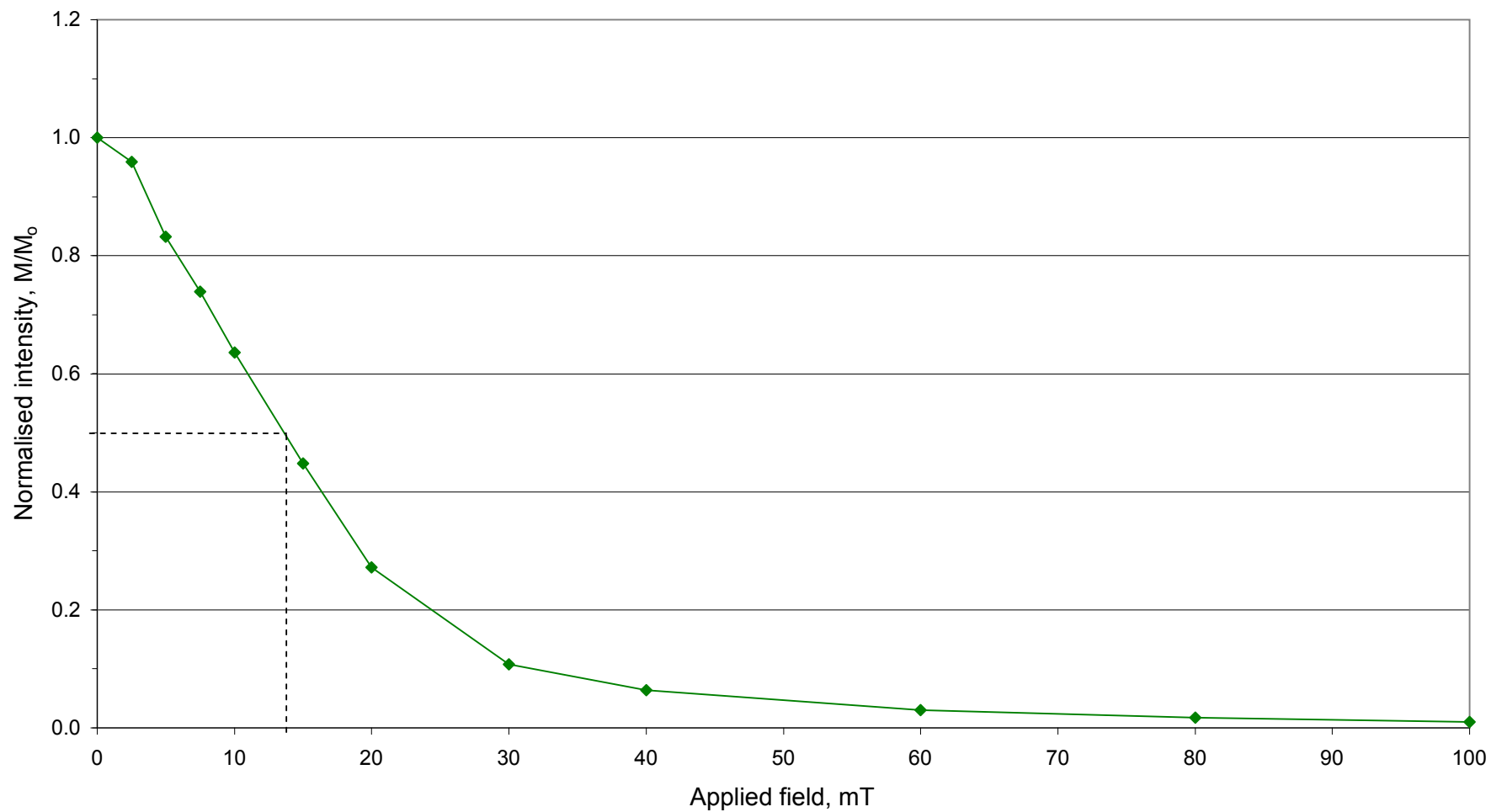
STINGAMIRES TRENCH 2 - SAMPLE POINT 8 DEMAGNETISATION: INTENSITY SPECTRUM



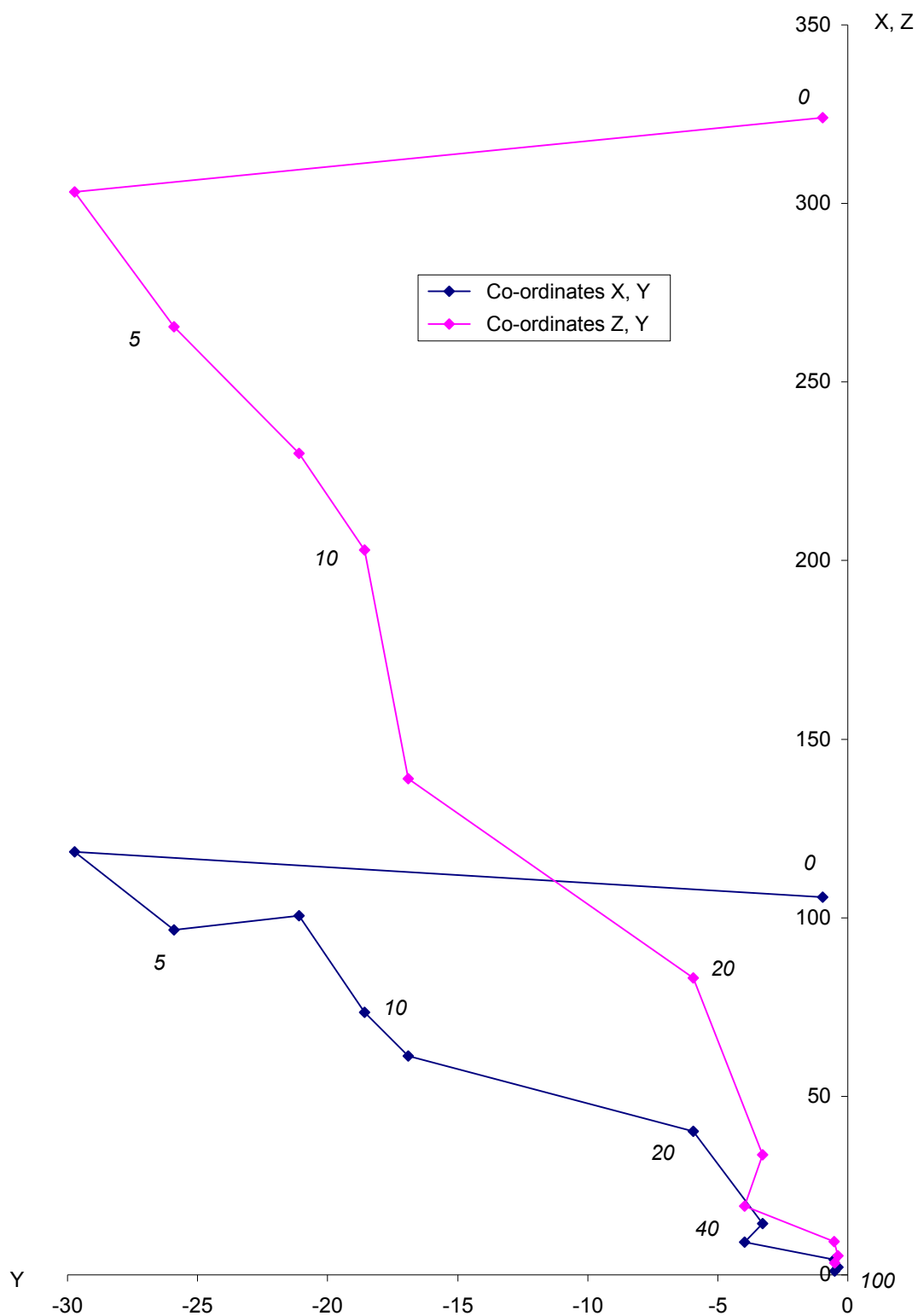
STINGAMIRES TRENCH 2 - SAMPLE POINT 8 - ZIJDERVELD PLOT



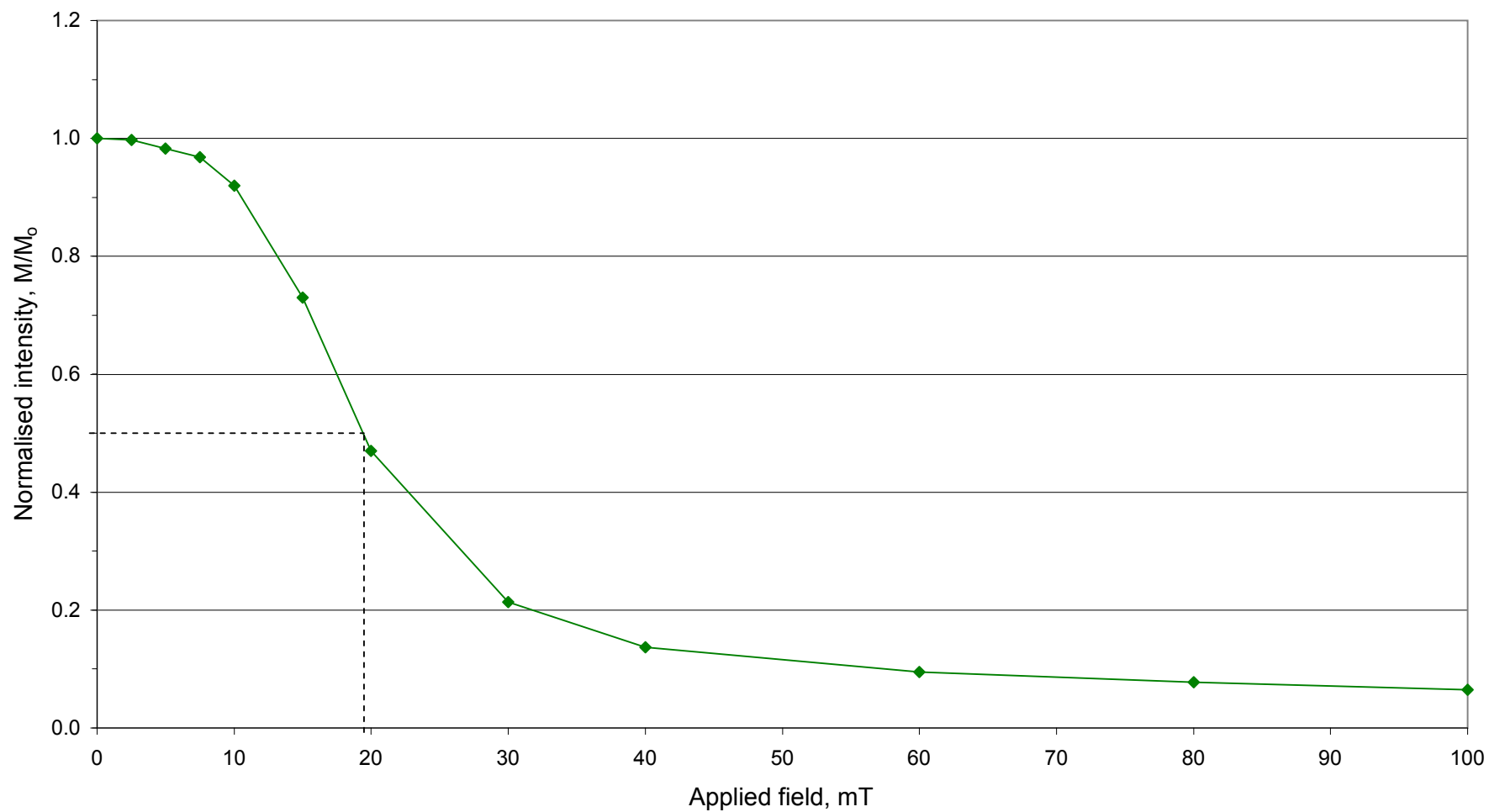
STINGAMIRES TRENCH 2 - SAMPLE POINT 12 DEMAGNETISATION: INTENSITY SPECTRUM



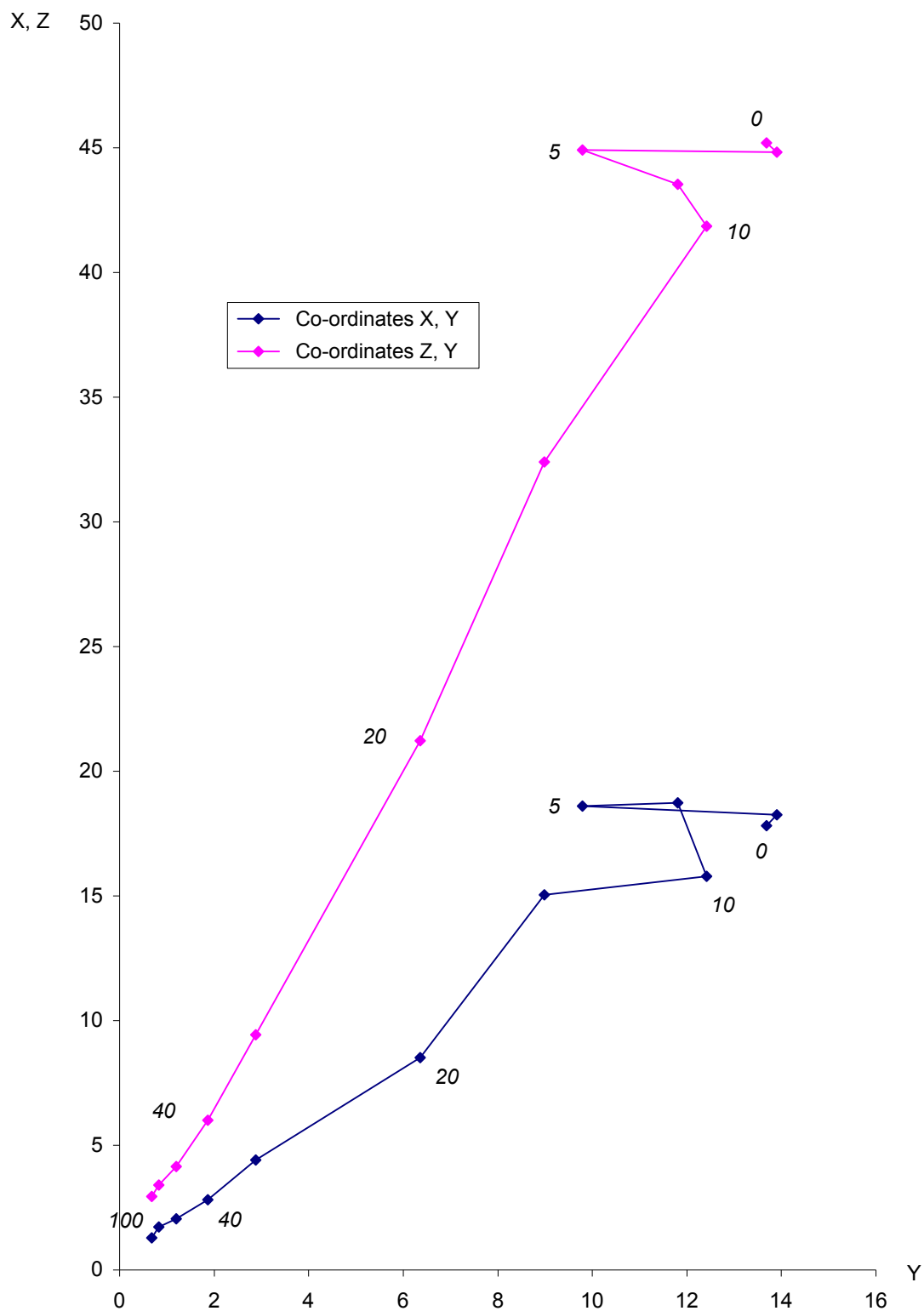
STINGAMIRES TRENCH 2 - SAMPLE POINT 12 - ZIJDERVELD PLOT



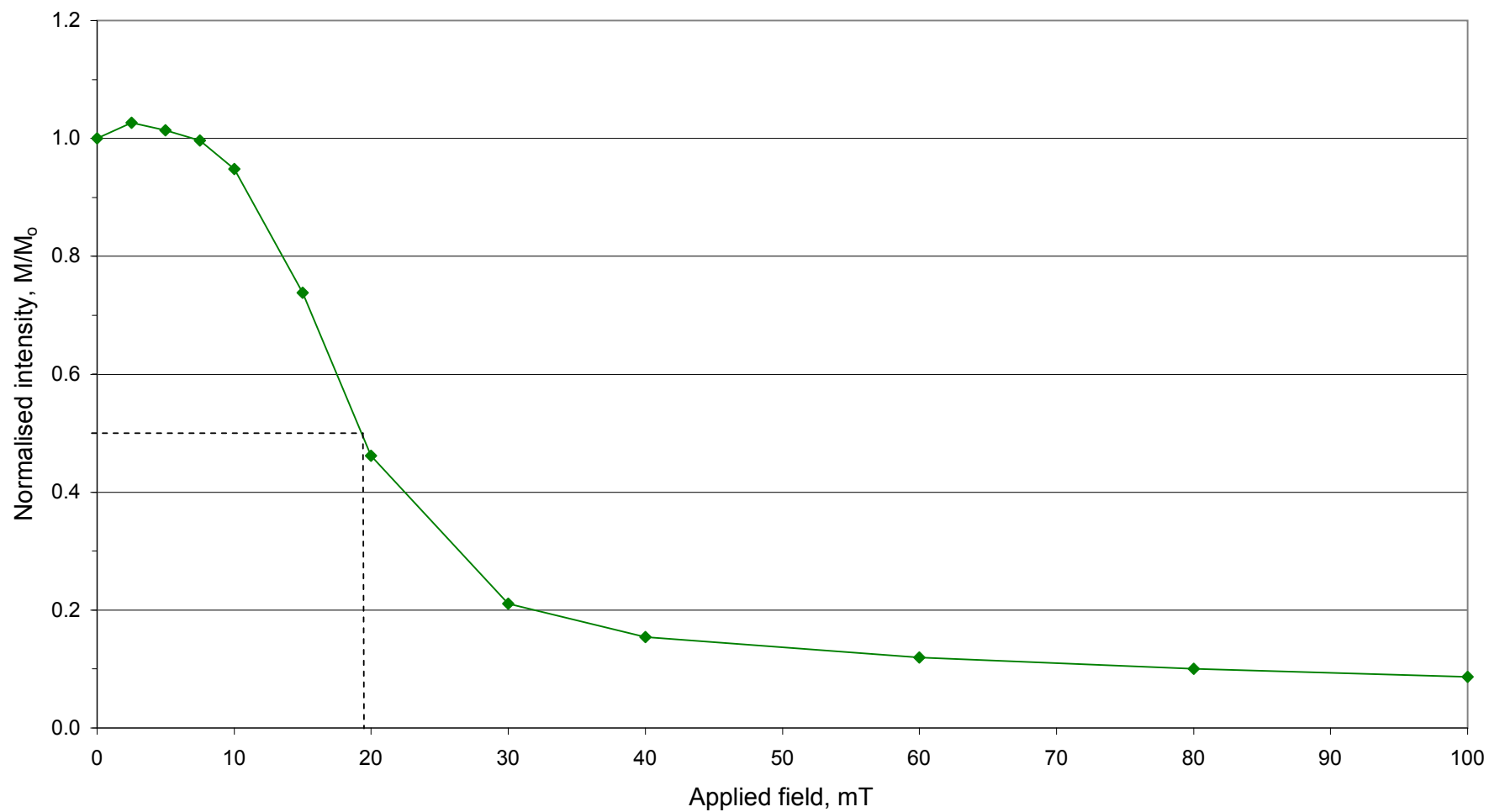
STINGAMIRES TRENCH 2 - SAMPLE POINT 17 DEMAGNETISATION: INTENSITY SPECTRUM



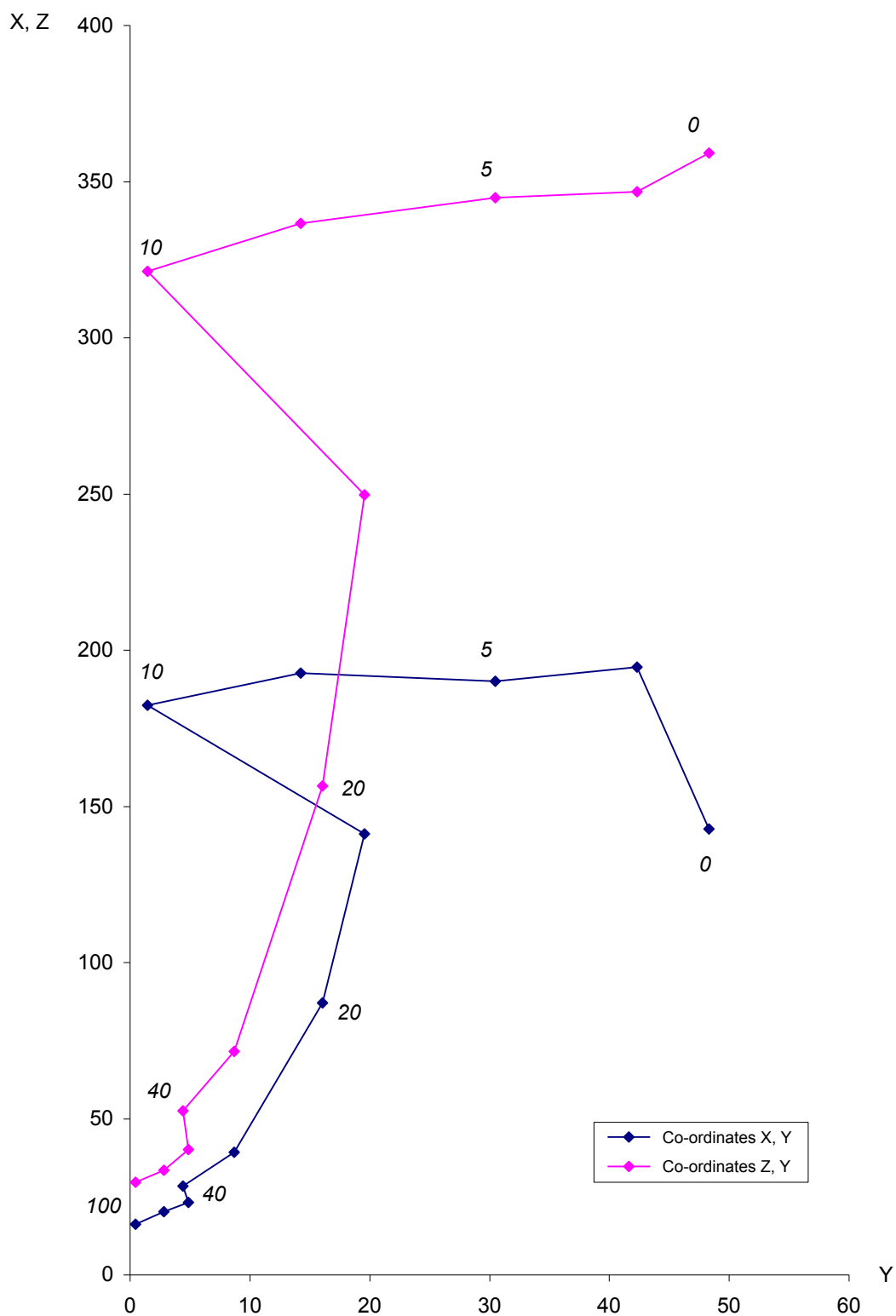
STINGAMIRES TRENCH 2 - SAMPLE POINT 17 - ZIJDERVELD PLOT



STINGAMIRES TRENCH 2 - SAMPLE POINT 20 DEMAGNETISATION: INTENSITY SPECTRUM



STINGAMIRES TRENCH 2 - SAMPLE POINT 20 - ZIJDERVELD PLOT



STABILITY INDEX

Sample No. 2

Demag Step	NRM				
	D	I	x	y	z
mT	degs.	degs.			
0.0	0.30	68.40	0.36812	0.00193	0.92978
2.5	17.50	71.60	0.30104	0.09492	0.94888
5.0	6.50	74.70	0.26218	0.02987	0.96456
7.5	19.30	70.40	0.31660	0.11087	0.94206
10.0	9.90	72.00	0.30442	0.05313	0.95106
15.0	5.90	70.50	0.33204	0.03431	0.94264
20.0	19.90	73.90	0.26076	0.09439	0.96078
30.0	16.10	72.40	0.29051	0.08385	0.95319
40.0	16.80	69.80	0.33056	0.09980	0.93849
60.0	359.10	71.70	0.31395	-0.00493	0.94943
80.0	19.70	71.20	0.30340	0.10863	0.94665
100.0	1.90	71.90	0.31051	0.01030	0.95052

Number = 12
Sum x = 3.69408
Sum y = 0.71708
Sum z = 11.37802
R = 11.98415
x bar = 0.30825
y bar = 0.05984
z bar = 0.94942

Mean Dec = 10.99
Mean Inc = 71.70
Alpha95 = 1.65

k = 694
Theta63 = 3.08
Range = 100
S.I. = 10.3

Sample No. 2

Number	Range	S.I.
3	5	1.7
4	7.5	2.2
5	10	2.9
6	15	3.8
7	20	4.3
8	30	5.6
9	40	6.6
10	60	7.8
11	80	9.2
12	100	10.3 *

Sample No. 8

Demag Step	NRM				
	D	I	x	y	z
mT	degs.	degs.			
0.0	18.80	69.10	0.33771	0.11496	0.93420
2.5	22.40	64.40	0.39948	0.16466	0.90183
5.0	14.00	67.60	0.36975	0.09219	0.92455
7.5	21.30	65.10	0.39228	0.15294	0.90704
10.0	20.70	65.60	0.38644	0.14602	0.91068
15.0	28.90	62.50	0.40424	0.22315	0.88701
20.0	23.80	64.30	0.39678	0.17500	0.90108
30.0	28.00	62.20	0.41179	0.21896	0.88458
40.0	18.70	68.10	0.35330	0.11958	0.92784
60.0	14.60	68.90	0.34837	0.09074	0.93295
80.0	24.70	64.90	0.38539	0.17726	0.90557
100.0	28.80	67.50	0.33535	0.18436	0.92388

Number = 12
Sum x = 4.52088
Sum y = 1.85983
Sum z = 10.94122
R = 11.98364
x bar = 0.37725
y bar = 0.15520
z bar = 0.91301

Mean Dec = 22.36
Mean Inc = 65.93
Alpha95 = 1.68

k = 672
Theta63 = 3.12
Range = 100
S.I. = 10.1

Sample No. 8

Number	Range	S.I.
3	5	2.4
4	7.5	3.3
5	10	4.3
6	15	4.0
7	20	4.9
8	30	5.6
9	40	6.4
10	60	7.5
11	80	9.1
12	100	10.1 *

Sample No. 12

Demag Step	NRM				
	D	I	x	y	z
mT	deg.	deg.			
0.0	359.50	71.90	0.31066	-0.00271	0.95052
2.5	345.90	68.10	0.36175	-0.09087	0.92784
5.0	345.00	69.40	0.33985	-0.09106	0.93606
7.5	348.10	65.90	0.39956	-0.08420	0.91283
10.0	345.80	69.50	0.33951	-0.08591	0.93667
15.0	344.60	65.40	0.40133	-0.11055	0.90924
20.0	351.60	64.00	0.43367	-0.06404	0.89879
30.0	347.20	66.30	0.39196	-0.08905	0.91566
40.0	336.70	62.40	0.42551	-0.18325	0.88620
60.0	352.90	65.30	0.41466	-0.05165	0.90851
80.0	350.50	67.20	0.38220	-0.06396	0.92186
100.0	333.80	71.20	0.28916	-0.14228	0.94665

Number = 12
Sum x = 4.48982
Sum y = -1.05953
Sum z = 11.05083
R = 11.97506
x bar = 0.37493
y bar = -0.08848
z bar = 0.92282

Mean Dec = -13.28
Mean Inc = 67.34
Alpha95 = 2.07

k = 441
Theta63 = 3.86
Range = 100
S.I. = 8.2

Sample No. 12

Number	Range	S.I.
3	5	2.1
4	7.5	2.6
5	10	3.3
6	15	3.9
7	20	4.2
8	30	5.5
9	40	5.3
10	60	6.6
11	80	8.0
12	100	8.2 *

Sample No. 17

Demag Step	NRM				
	D	I	x	y	z
mT	deg.	deg.			
0.0	37.50	63.60	0.35275	0.27068	0.89571
2.5	37.30	62.90	0.36237	0.27605	0.89021
5.0	27.70	64.90	0.37558	0.19719	0.90557
7.5	32.20	63.00	0.38416	0.24192	0.89101
10.0	38.20	64.40	0.33956	0.26721	0.90183
15.0	30.90	61.60	0.40812	0.24425	0.87965
20.0	36.70	63.40	0.35900	0.26759	0.89415
30.0	33.20	60.80	0.40822	0.26713	0.87292
40.0	33.60	60.70	0.40762	0.27082	0.87207
60.0	30.40	60.30	0.42734	0.25072	0.86863
80.0	25.50	60.70	0.44171	0.21068	0.87207
100.0	28.00	63.70	0.39121	0.20801	0.89649

Number = 12
Sum x = 4.65765
Sum y = 2.97226
Sum z = 10.64031
R = 11.98934
x bar = 0.38848
y bar = 0.24791
z bar = 0.88748

Mean Dec = 32.54
Mean Inc = 62.56
Alpha95 = 1.35

k = 1032
Theta63 = 2.52
Range = 100
S.I. = 12.5

Sample No. 17

Number	Range	S.I.
3	5	2.7
4	7.5	3.8
5	10	4.6
6	15	5.5
7	20	6.7
8	30	8.0
9	40	9.2
10	60	10.7
11	80	11.2
12	100	12.5 *

Sample No. 20

Demag Step	NRM				
	D	I	x	y	z
<i>mT</i>	<i>degs.</i>	<i>degs.</i>			
0.0	18.70	67.20	0.36706	0.12424	0.92186
2.5	12.30	60.10	0.48705	0.10619	0.86690
5.0	9.10	60.80	0.48172	0.07716	0.87292
7.5	4.20	60.20	0.49564	0.03640	0.86777
10.0	0.50	60.40	0.49392	0.00431	0.86949
15.0	7.90	60.30	0.49076	0.06810	0.86863
20.0	10.50	60.50	0.48418	0.08974	0.87036
30.0	12.50	60.70	0.47778	0.10592	0.87207
40.0	8.90	61.40	0.47293	0.07406	0.87798
60.0	11.80	59.40	0.49828	0.10410	0.86074
80.0	7.90	58.60	0.51606	0.07161	0.85355
100.0	1.60	61.20	0.48157	0.01345	0.87631

Sample No. 20

Number	Range	S.I.
3	5	1.6
4	7.5	2.0
5	10	2.2
6	15	3.0
7	20	3.8
8	30	4.9
9	40	6.1
10	60	7.7
11	80	9.0
12	100	10.0 *

Number = 12
Sum x = 5.74695
Sum y = 0.87528
Sum z = 10.47858
R = 11.98308
x bar = 0.47959
y bar = 0.07304
z bar = 0.87445

Mean Dec = 8.66
Mean Inc = 60.98
Alpha95 = 1.70

k = 650
Theta63 = 3.18
Range = 100
S.I. = 10.0