

ECHO - LOG

Harlingen BAS 3

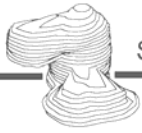
1. Messung (Vollvermessung)

22.02.2008

081512



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**Bericht über die Ergebnisse der
echometrischen Hohlraumvermessung
in der Kaverne**

Harlingen BAS 3

Datum: 22.02.2008

Berichtsnummer: 081512

Auftraggeber: FRISIA Zout B.V., Harlingen

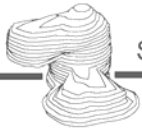
Verantwortlich für die Vermessung:

Messtechniker :

Truppleiter :

Auswertung :

Kontrolle:



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Zusammenfassung der Ergebnisse

Angaben zur Bohrung

Alle Teufenangaben sind:

MD-Angaben

Bezugsebene der Teufenangaben:

Erdoberfläche

Unterkante Carnallit: 3906.0 m

Rohrstand der 11 3/4"-Verrohrung
während der Messung: 3961.0 m

Rohrstand der 7"-Verrohrung
während der Messung: 3932.0 m

Bezugsteufe der Sonarvermessung: 3906.0 m

Angebrachte Teufenkorrektur: 11.0 m

Angaben zum Messequipment

Eingesetztes Messfahrzeug: L 103

Eingesetzte Messsonden: Echosonde BSE 5, BSE 5
Echosonde BSE 15, BSE 15

Allgemeine Angaben zur Durchführung der Messung

Anzahl der Einfahrten: 2

Horizontal gemessene Echogramme: 22

Gekippt gemessene Echogramme: 26

Tiefste Messposition: 4058.5 m

**Ausdehnungen bezogen auf die Messachse****Richtungsbezug:****Magnetisch Nord**

Ermittlung aus 36 Vertikalschnitten, abgeleitet aus Horizontal- und Kippdaten in 5°-Schritten:

minimaler Radius:	0.0 m
Teufe:	4061.8 m
Richtung:	0°

maximaler Radius:	65.8 m
Teufe:	4028.5 m
Richtung:	150°

höchster Punkt:	3958.1 m
Entfernung:	0.4 m
Richtung:	95°

tiefster Punkt:	4069.0 m
Entfernung:	11.5 m
Richtung:	230°

tiefster Punkt in der Messachse:	4061.8 m
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Ermittlung aus 27 Horizontalschnitten zwischen 3960.0 m und 4067.5 m in 5°-Schritten:

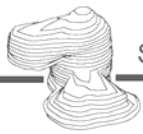
maximaler Radius:	65.8 m
Teufe:	4028.5 m
Richtung:	150°

maximaler Durchmesser:	117.2 m
Teufe:	4018.5 m
Richtung:	150 - 330°

Volumen

Volumen:	537 761 m³
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Teufenbereich:	3958.5 m <--> 4068.5 m
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Interpretation

Unter Voraussetzung eines geradlinigen Strahlenweges wurden die gemessenen Laufzeitdaten in Entfernungen mit der nachfolgend angegebenen Schallgeschwindigkeit umgerechnet:

1830.0 m/s in Sole (angenommen)

Wurden in einer Echospur mehrere Echos registriert, erfolgte die Auswahl des repräsentativen Echos entsprechend der Amplitudenhöhe, Laufzeit, Messpunktdichte und Kavernenform.

Horizontalschnitte

22 Horizontalschnitte in folgenden Messteufen sind dem Bericht als grafische Ausgaben beigelegt:

3963.5 m	3968.5 m	3973.5 m	3978.5 m	3983.5 m	3988.5 m	3993.5 m
3998.5 m	4003.5 m	4008.5 m	4013.5 m	4018.5 m	4023.5 m	4028.5 m
4033.5 m	4038.5 m	4043.5 m	4048.5 m	4053.5 m	4055.5 m	4057.5 m
4058.5 m						

Es wurden 5 Schnitte durch Konstruktion ermittelt:

3960.0 m	4060.0 m	4062.5 m	4065.0 m	4067.5 m
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Kippschnitte

26 Kippschnitte in folgenden Messteufen sind in den Vertikalschnitten dargestellt:

14 Schnitte mit aufwärts gerichtetem Ultraschallwandler:

Teufe / Kippwinkel

3963.5 / 6	3963.5 / 10	3963.5 / 12	3963.5 / 18	3963.5 / 24	3963.5 / 30
3963.5 / 36	3963.5 / 42	3963.5 / 48	3963.5 / 54	3963.5 / 60	3963.5 / 66
3963.5 / 72	3963.5 / 78				

12 Schnitte mit abwärts gerichtetem Ultraschallwandler:

Teufe / Kippwinkel

3963.5 / 78	3963.5 / 84	3963.5 / 87	4053.5 / 12	4053.5 / 24	4053.5 / 36
4053.5 / 48	4053.5 / 60	4053.5 / 66	4053.5 / 72	4053.5 / 79	4053.5 / 84



Vertikalschnitte

Durch gemeinsame Interpretation aller richtungsbezogenen Daten wurde der Verlauf der Kavernenwand ermittelt und in 36 Vertikalschnitten dargestellt.

Maxplots (grundrisslich)

Die erste Abbildung im Abschnitt Horizontalschnitte zeigt die Flächen aller Horizontalschnitte und die durch die Vertikalschnitte gebildete Fläche (schraffiert). Die resultierende Gesamtfläche ist in der zweiten Abbildung dargestellt (Kreuzschraffur), wobei zur Übersicht die größte Einzelfläche miteingeblendet wird.

Der aus der Umhüllenden (Verbindungsline der größten horizontalen Kavernenausdehnung in jeder Messrichtung) ermittelte Gesamtschwerpunkt der Kaverne ist in beiden Abbildungen mit Entfernungs- und Richtungsangabe bezüglich der Messachse eingezeichnet.

Perspektivansichten

Zur besseren Übersicht enthält dieser Bericht diverse Perspektivansichten.

Hintersolungen

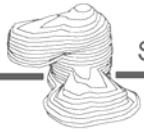
Mit geneigtem Messkopf festgestellte Hintersolungen wurden anhand der Vertikalschnitte in die entsprechenden Horizontalschnitte übertragen.

Die ermittelten Zusatzflächen sind zu den bereits erfassten Flächen addiert worden.

LOG - Daten

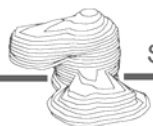
Am Ende des Berichtes sind die grafischen Ausgaben folgender LOG - Daten zusammengefasst:

Parameter	von	bis
CCL:	3881.2 m	3964.9 m
MCCL:	3852.9 m	3970.9 m
Gamma:	3853.1 m	3971.1 m



LEGENDE

- Messwert, ermittelt mit horizontal ausgerichtetem Ultraschallwandler
- Messwert, ermittelt mit ausgekipptem Ultraschallwandler
- ▲ konstruierter Wert, aus Vertikalschnitten abgeleitet
- Verbindungslinie zwischen zwei Messwerten zur Berechnung des Volumens
- angenommener Verlauf (in Bereichen, die nicht ausreichend durch Messwerte belegt sind)
- N** Magnetisch Nord mit Sondenkompass ermittelt
(Magnetkompass im unverrohrten Bereich)
(Faserkreiselkompass im verrohrten Bereich)
- (N)** Angenommene Nordrichtung (Messung im magnetisch gestörten Umfeld ohne Faserkreiselkompass)
- a** größte Ausdehnung im Schnitt
(ohne Berücksichtigung von Hintersolungsflächen)
- b** größte zu a senkrechte Ausdehnung
(ohne Berücksichtigung von Hintersolungsflächen)
- a/b** Verhältnis der größten zueinander senkrechten Ausdehnungen im Schnitt
- (+ xx m²)** Hintersolungsfläche im aktuellen Horizontalschnitt
- r~** mittlerer Radius



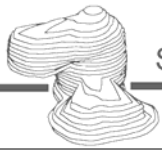
Volumenliste

ne: Harlingen BAS 3

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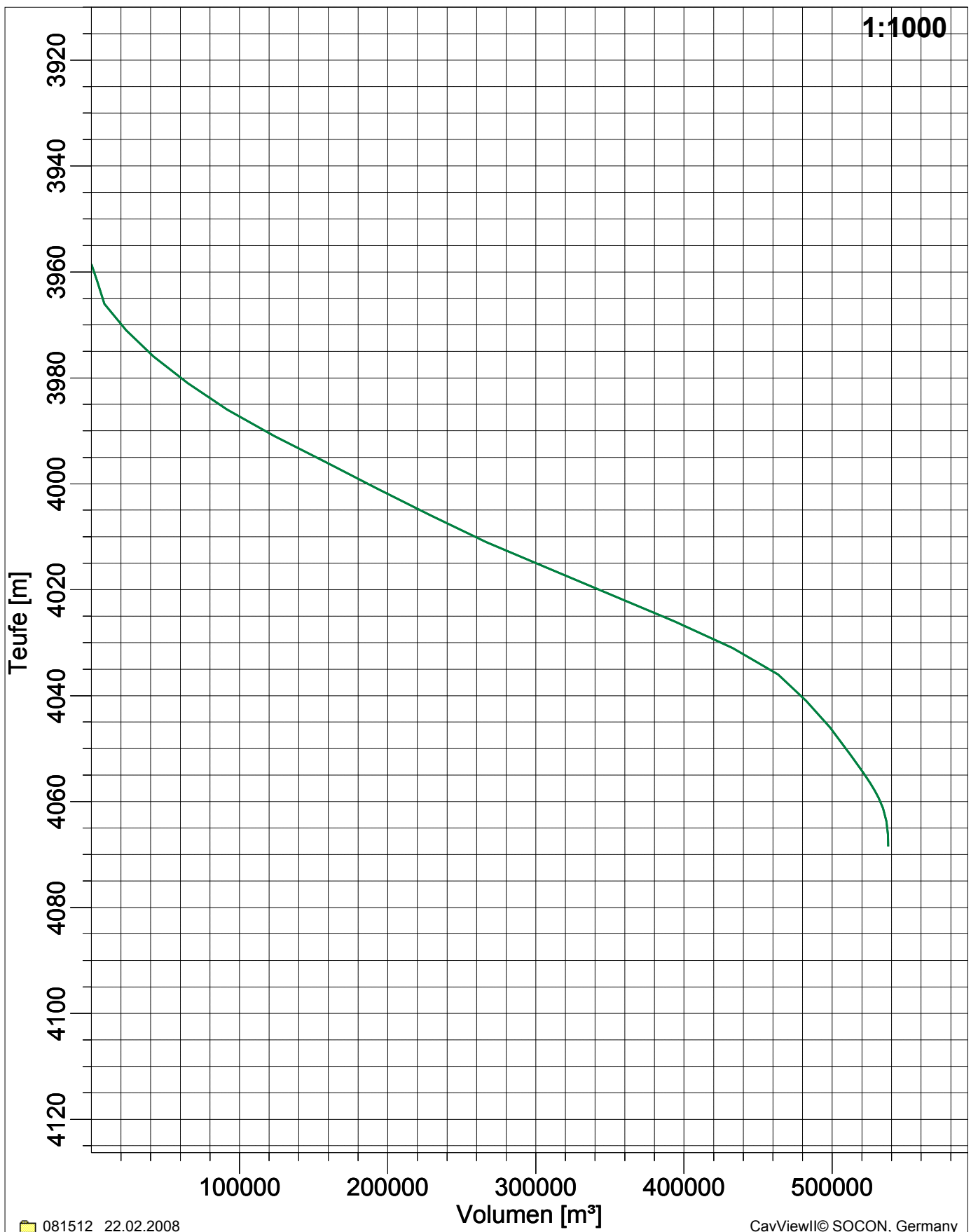
Tiefe [m]	Radius [m]	Fläche [m²]	Tiefenbereich [m]		Volumen [m³]	
			von	bis	partial	gesamt
3960.0	20.0	1256.2	3958.50	3961.75	4082.7	4082.7
3963.5	18.8	1112.1	3961.75	3966.00	4726.3	8808.9
3968.5	30.5	2928.9	3966.00	3971.00	14644.5	23453.5
3973.5	34.4	3713.8	3971.00	3976.00	18568.9	42022.4
3978.5	38.3	4599.9	3976.00	3981.00	22999.7	65022.2
3983.5	41.2	5329.0	3981.00	3986.00	26644.9	91667.0
3988.5	45.1	6397.8	3986.00	3991.00	31989.2	123656.2
3993.5	47.4	7046.7	3991.00	3996.00	35233.5	158889.7
3998.5	46.9	6908.1	3996.00	4001.00	34540.3	193430.0
4003.5	47.6	7128.7	4001.00	4006.00	35643.7	229073.7
4008.5	48.9	7506.6	4006.00	4011.00	37533.2	266606.8
4013.5	51.6	8369.1	4011.00	4016.00	41845.4	308452.2
4018.5	52.2	8554.4	4016.00	4021.00	42772.2	351224.5
4023.5	52.0	8508.5	4021.00	4026.00	42542.7	393767.1
4028.5	49.8	7790.3	4026.00	4031.00	38951.7	432718.8
4033.5	44.3	6169.4	4031.00	4036.00	30847.1	463565.9
4038.5	34.7	3785.6	4036.00	4041.00	18928.2	482494.1
4043.5	31.9	3187.8	4041.00	4046.00	15939.0	498433.1
4048.5	29.3	2705.4	4046.00	4051.00	13526.8	511959.9
4053.5	28.4	2536.4	4051.00	4054.50	8877.3	520837.3
4055.5	27.4	2366.1	4054.50	4056.50	4732.2	525569.5
4057.5	26.0	2116.3	4056.50	4058.00	3174.4	528743.9
4058.5	25.2	1998.2	4058.00	4059.25	2497.8	531241.7
4060.0	22.1	1538.2	4059.25	4061.25	3076.4	534318.1
4062.5	17.0	906.5	4061.25	4063.75	2266.3	536584.4
4065.0	11.0	377.6	4063.75	4066.25	944.1	537528.5
4067.5	5.7	103.4	4066.25	4068.50	232.5	537761.0



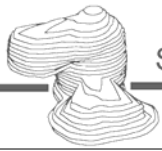
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GESAMTVOLUMEN

22.02.2008



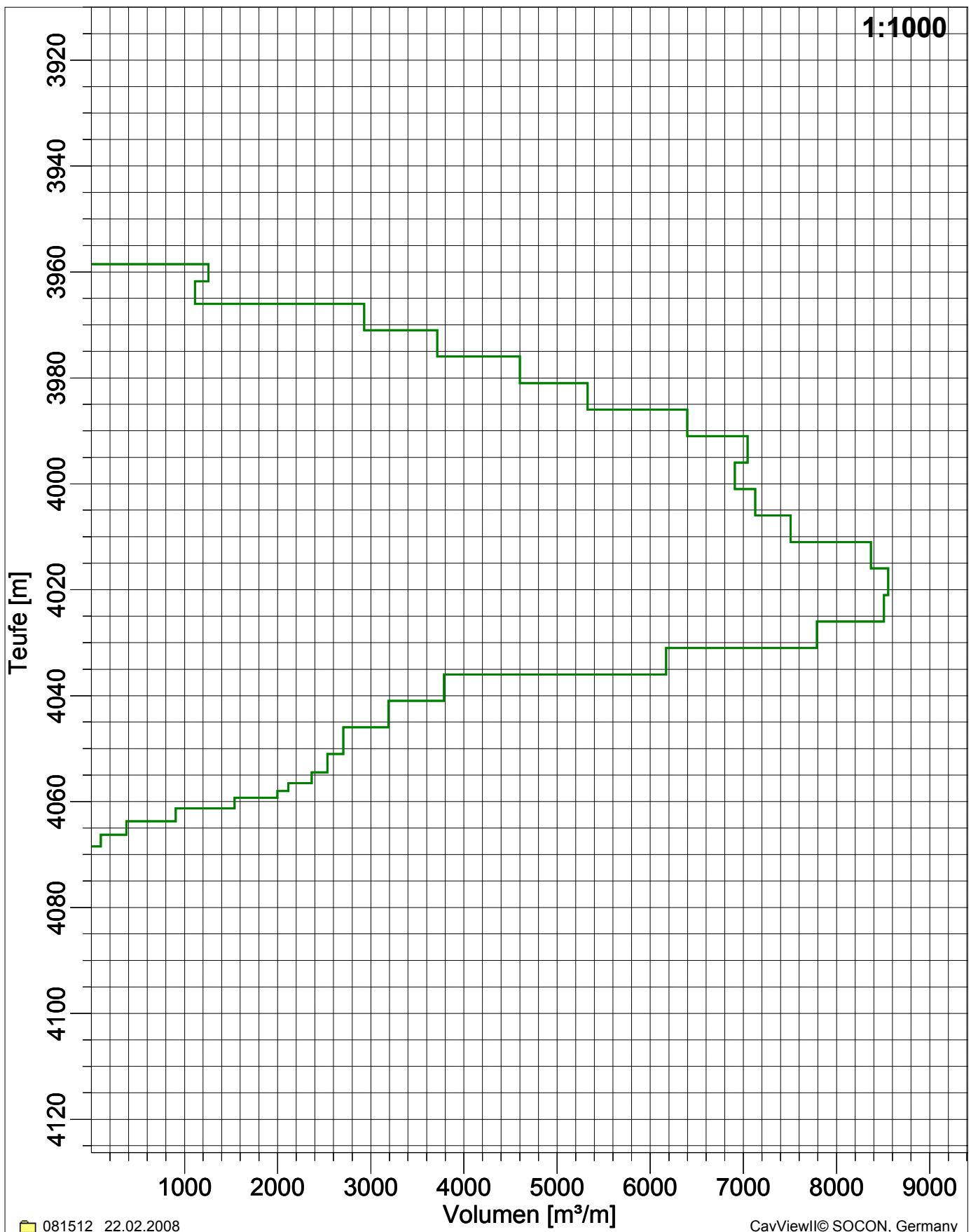
Gesamtvolumen = 537761.0 m³



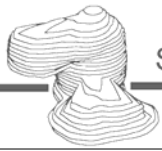
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PARTIALVOLUMEN

22.02.2008



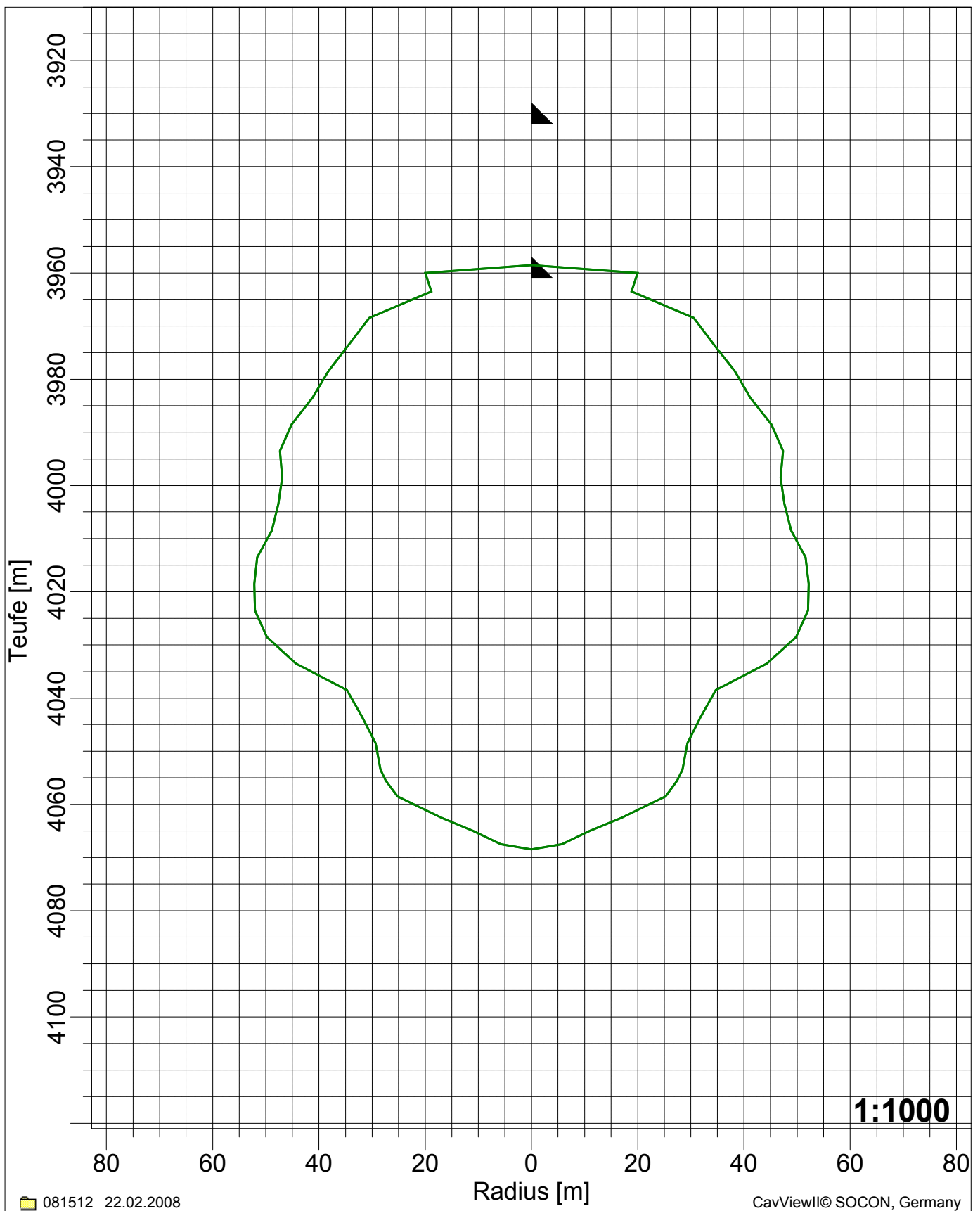
Partialvolumen



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MITTLERER RADIUS

22.02.2008

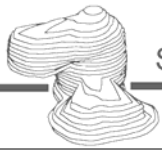


▲ Carnallit : 3906.0 m

▲ 11 3/4" : 3961.0 m

▲ 7" : 3932.0 m

— Mittlerer Radius (22.02.2008)

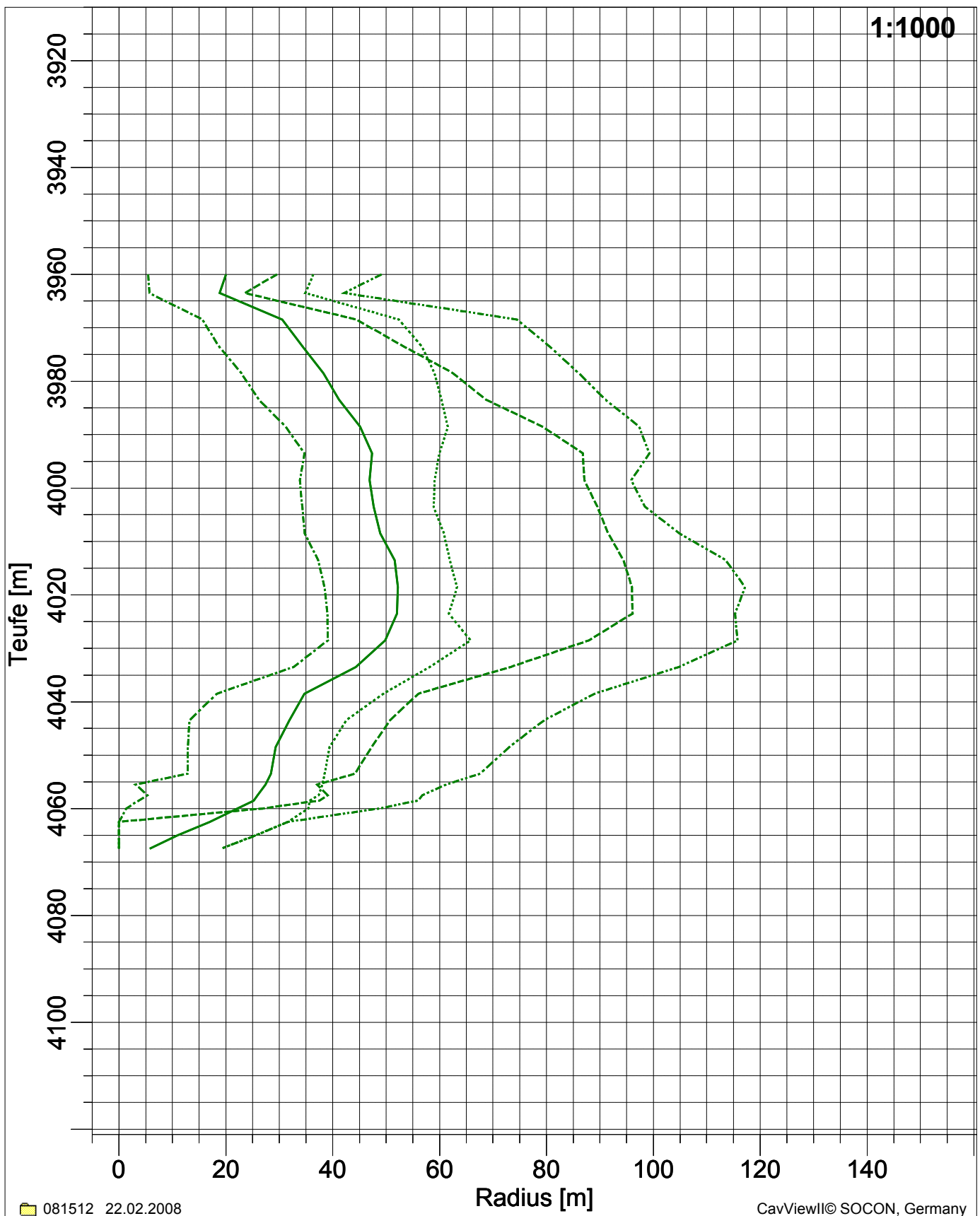


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RADIEN / DURCHMESSER

22.02.2008

1:1000



081512 22.02.2008

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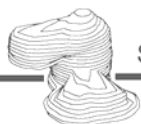
— Mittlerer Radius

- - - Minimaler Radius

..... Maximaler Radius

- - - Minimaler Durchmesser

- - - Maximaler Durchmesser



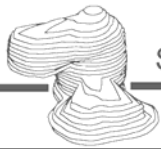
Radien- und Durchmesserertabelle

Kaverne: Harlingen BAS 3

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22.02.2008

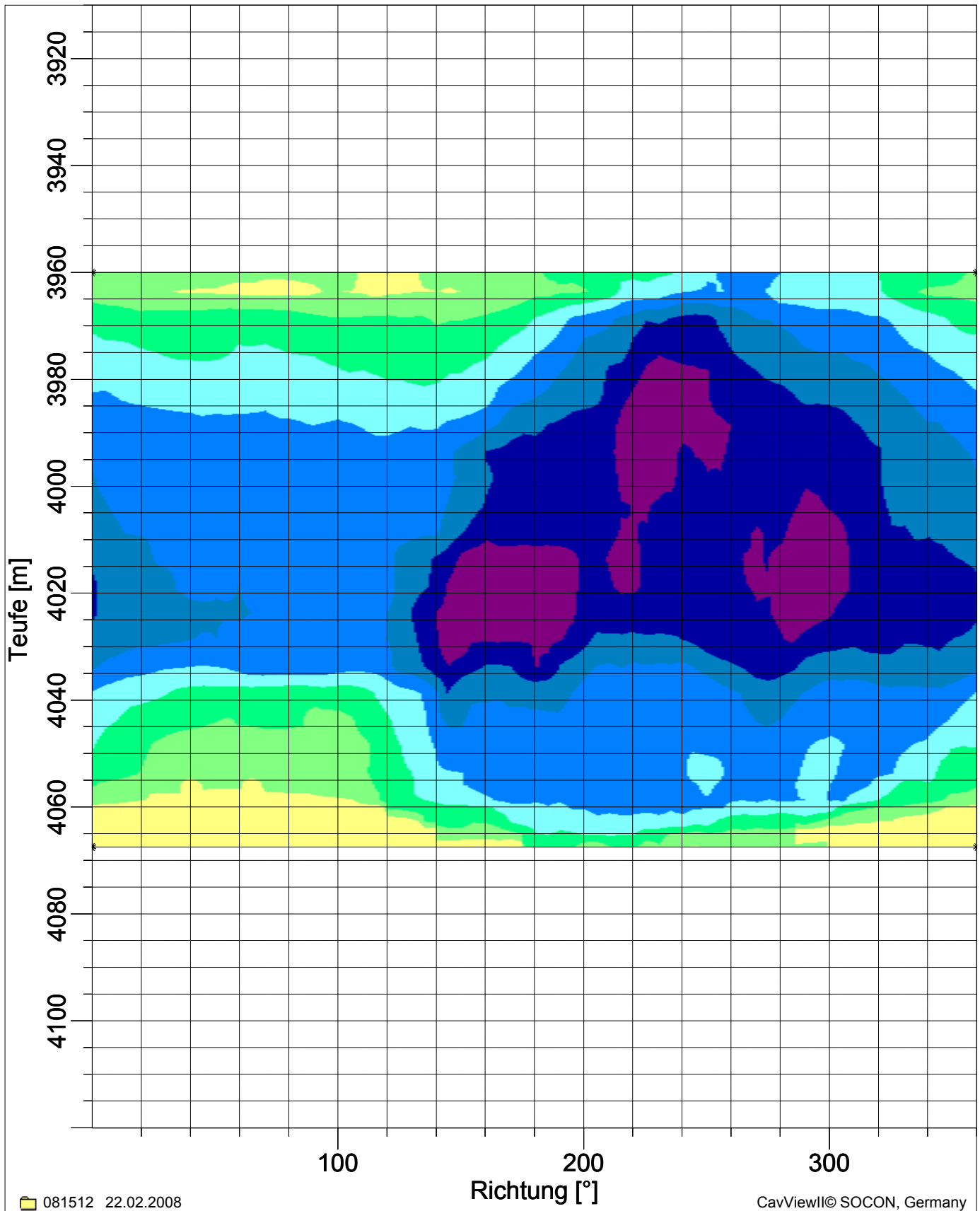
Tiefe [m]	Radius [MIN]		Radius [MAX]		Durchmesser [MIN]		[MAX]	
	[m]	[°]	[m]	[°]	[m]	[°]	[m]	[°]
3960.0	5.5	115	36.3	275	29.6	0 <-> 180	49.1	95 <-> 275
3963.5	5.7	70	34.9	270	23.6	164 <-> 344	42.1	90 <-> 270
3968.5	15.6	140	52.4	245	44.4	168 <-> 348	74.5	65 <-> 245
3973.5	18.7	139	56.7	230	53.3	169 <-> 349	80.6	59 <-> 239
3978.5	22.9	134	59.1	230	62.5	159 <-> 339	86.0	70 <-> 250
3983.5	26.2	134	60.4	230	68.7	158 <-> 338	91.0	59 <-> 239
3988.5	31.2	119	61.5	224	79.2	154 <-> 334	97.3	40 <-> 220
3993.5	34.7	94	59.9	219	86.8	140 <-> 320	99.3	39 <-> 219
3998.5	33.8	94	59.1	220	87.1	135 <-> 315	95.9	35 <-> 215
4003.5	34.3	104	58.9	290	89.5	139 <-> 319	98.4	174 <-> 354
4008.5	34.8	100	60.8	300	91.6	100 <-> 280	104.8	160 <-> 340
4013.5	37.3	109	61.9	154	94.4	59 <-> 239	113.6	159 <-> 339
4018.5	38.5	110	63.2	150	96.0	65 <-> 245	117.2	150 <-> 330
4023.5	39.1	111	61.7	150	96.1	51 <-> 231	115.3	150 <-> 330
4028.5	39.1	104	65.8	150	88.0	54 <-> 234	115.8	145 <-> 325
4033.5	32.7	45	58.1	180	73.3	40 <-> 220	104.8	145 <-> 325
4038.5	18.3	84	49.5	144	56.0	66 <-> 246	89.0	144 <-> 324
4043.5	13.1	90	42.5	145	50.7	54 <-> 234	79.5	145 <-> 325
4048.5	12.9	90	39.4	150	47.3	49 <-> 229	73.1	150 <-> 330
4053.5	12.8	65	38.5	155	44.2	65 <-> 245	67.6	155 <-> 335
4055.5	3.1	47	38.0	200	37.1	64 <-> 244	61.2	130 <-> 310
4057.5	5.3	60	37.3	200	39.1	65 <-> 245	56.7	129 <-> 309
4058.5	3.7	64	35.7	200	37.5	65 <-> 245	56.0	125 <-> 305
4060.0	1.4	55	35.5	205	26.9	124 <-> 304	48.7	120 <-> 300
4062.5	0.0	0	31.6	240	0.0	1 <-> 181	31.6	60 <-> 240
4065.0	0.0	0	25.6	210	0.0	1 <-> 181	25.6	30 <-> 210
4067.5	0.0	0	19.2	195	0.0	1 <-> 181	19.2	15 <-> 195



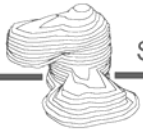
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RADIENABWICKLUNG

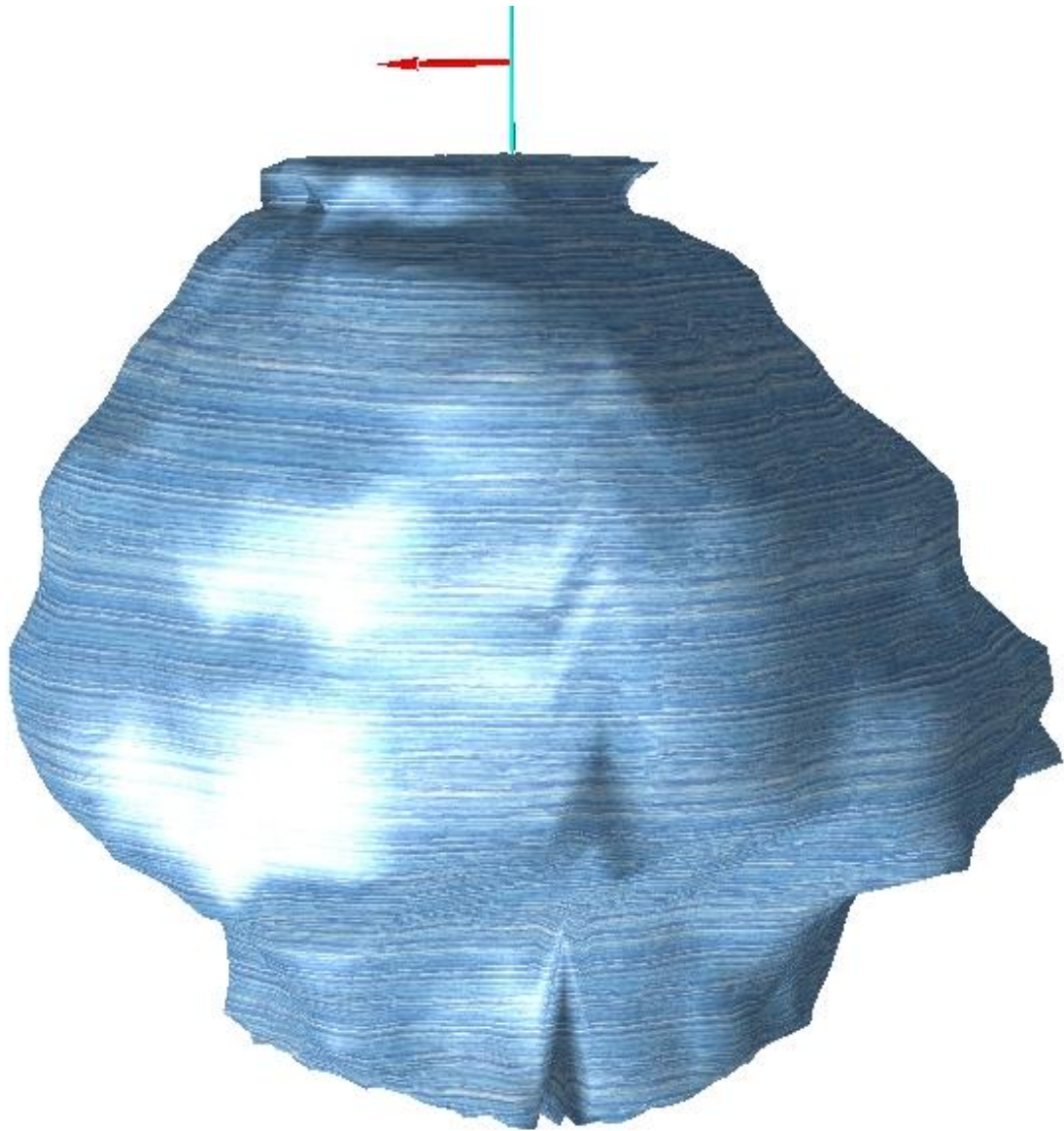
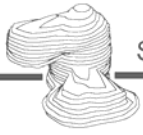
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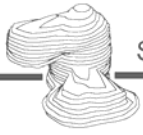
0.00 - 8.23 m	8.23 - 16.46 m	16.46 - 24.69 m	24.69 - 32.92 m	32.92 - 41.15 m
41.15 - 49.38 m	49.38 - 57.61 m	57.61 - 65.84 m		



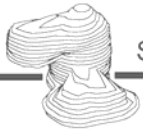
Harlingen BAS 3 --> 0° <--



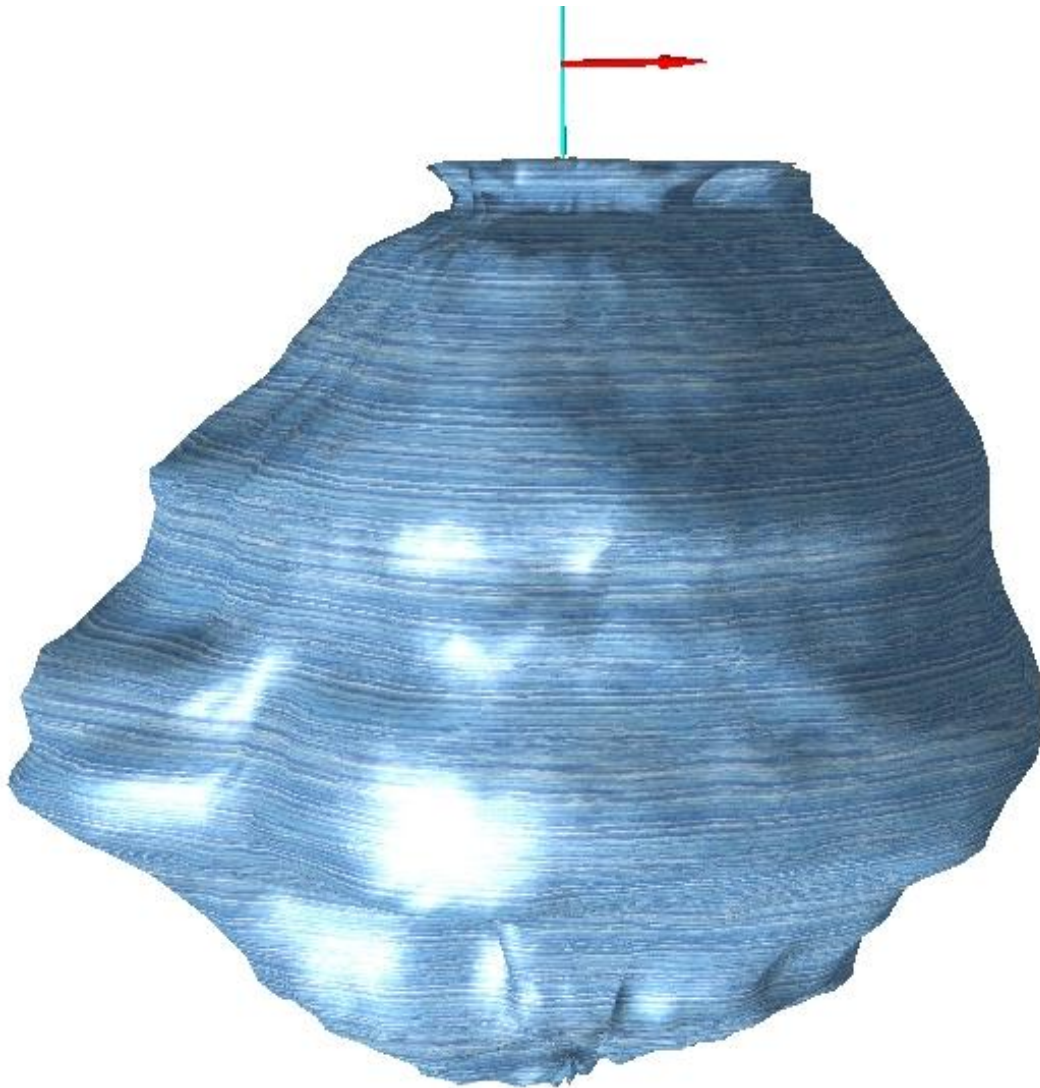
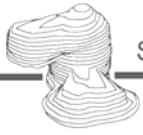
Harlingen BAS 3 --> 60° <--



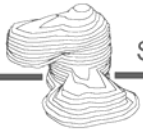
Harlingen BAS 3 --> 120° <--



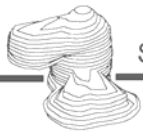
Harlingen BAS 3 --> 180° <--



Harlingen BAS 3 --> 240° <--



Harlingen BAS 3 --> 300° <--



HORIZONTALSCHNITTE

Kaverne: Harlingen BAS 3

Berichts-Nr.: 081512

Rechengeschw.: 1830.0 m/s

Messdatum : 22.02.2008

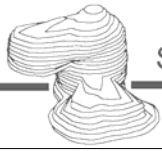
Maßstab: 1 : 1000

Horizontalschnitte in folgenden Teufen:

3963.5 m	3968.5 m	3973.5 m	3978.5 m	3983.5 m	3988.5 m	3993.5 m
3998.5 m	4003.5 m	4008.5 m	4013.5 m	4018.5 m	4023.5 m	4028.5 m
4033.5 m	4038.5 m	4043.5 m	4048.5 m	4053.5 m	4055.5 m	4057.5 m
4058.5 m						

Es wurden 5 Schnitte durch Konstruktion ermittelt:

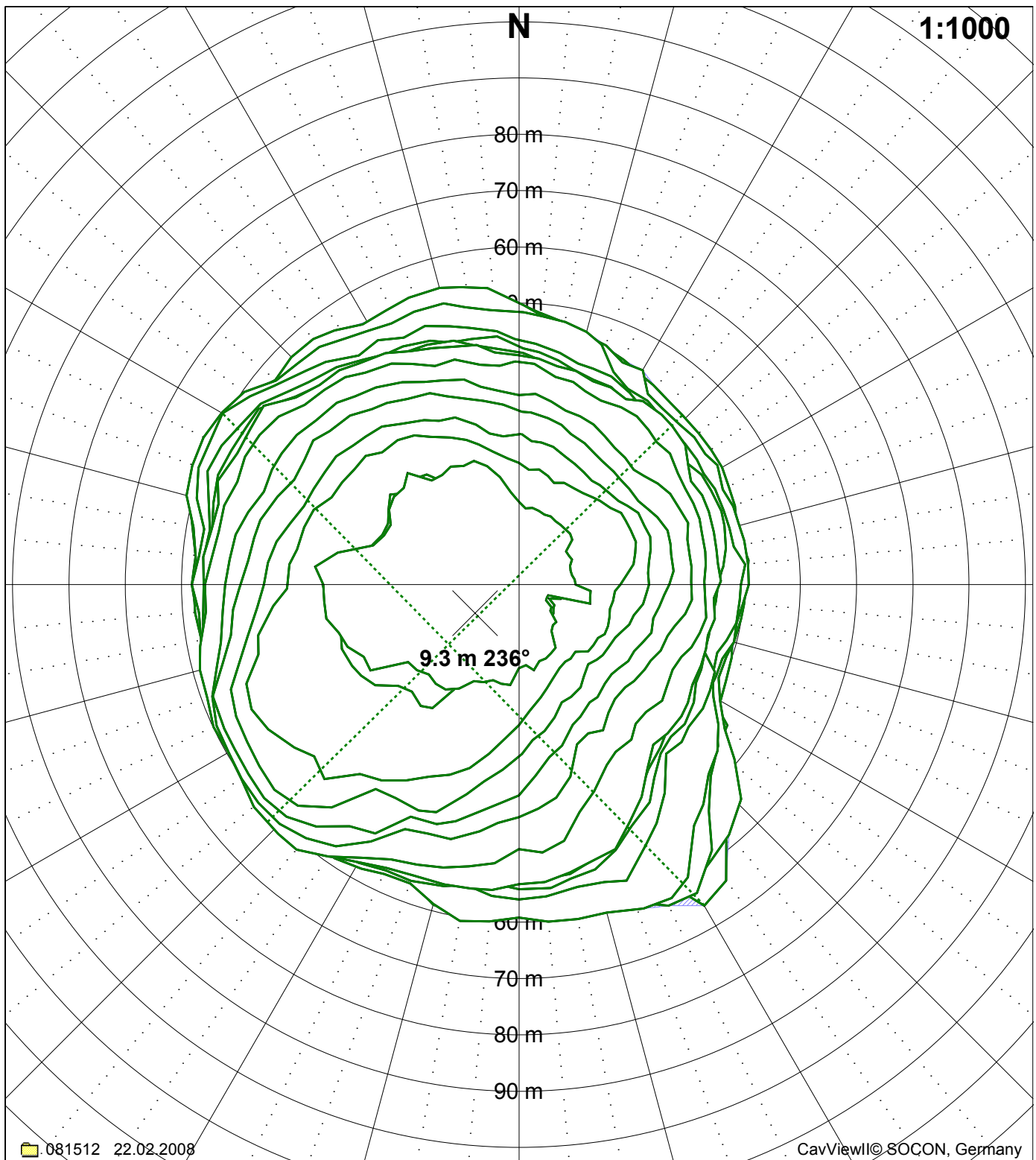
3960.0 m 4060.0 m 4062.5 m 4065.0 m 4067.5 m



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MAXPLOT

22.02.2008



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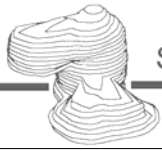
Vertikal-Maxplot

Horizontalschnitte

a/b

Schwerpunkt

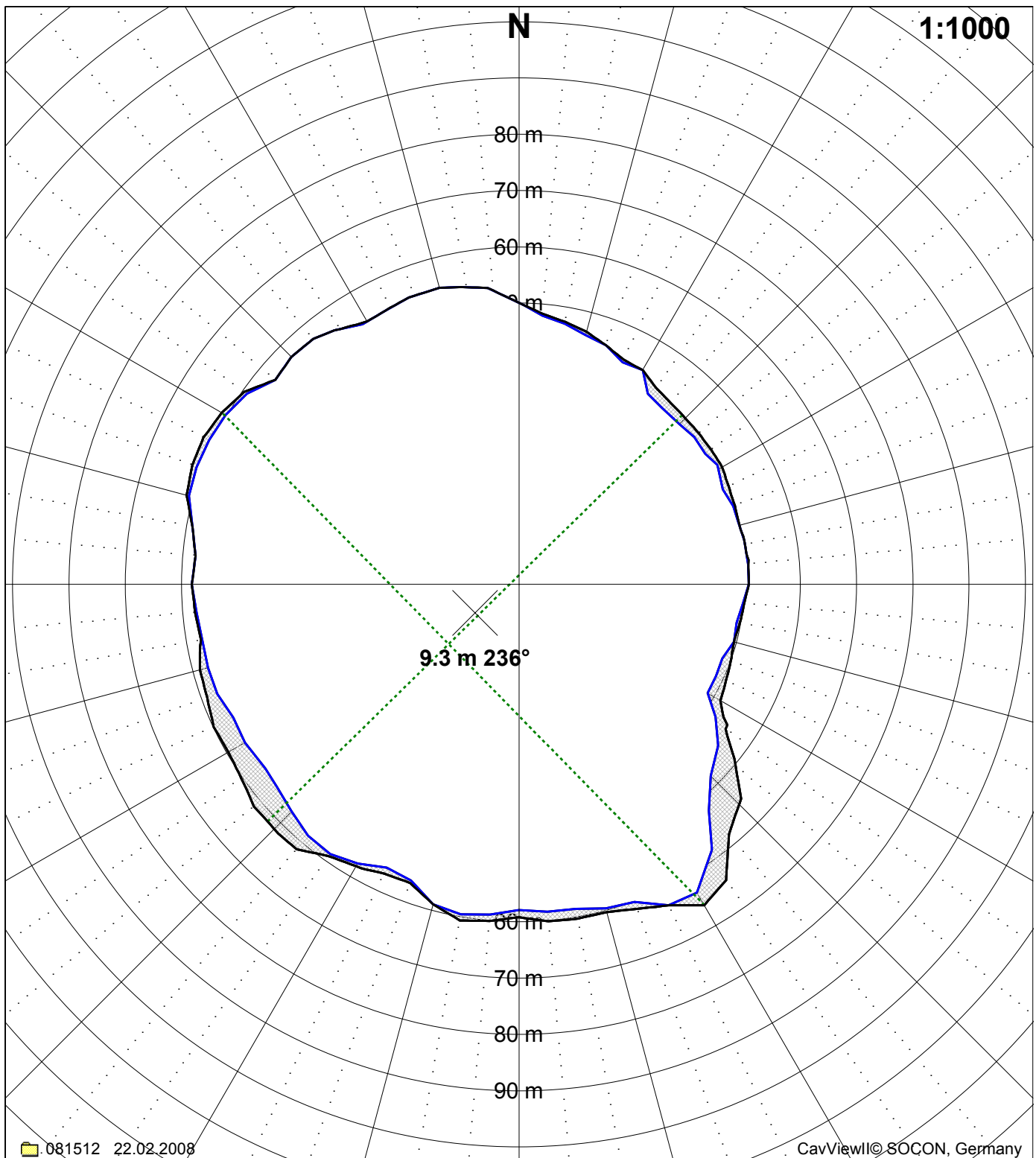
 $d_{\max}: 119.8 \text{ m } 150^\circ \leftrightarrow 330^\circ$ $r_{\min}: 39.6 \text{ m } \rightarrow 105^\circ$ $r_{\sim}: 53.4 \text{ m}$ $r_{\max}: 65.8 \text{ m } \rightarrow 150^\circ$ $a/b = 1.187$ $a = 122.5 \text{ m } (149^\circ - 300^\circ)$ $b = 103.2 \text{ m } (43^\circ - 226^\circ)$ Fläche aus Vertikalschnitten: 8954 m², Fläche aus Horizontal- u. Vertikalschnitten: 8960 m²



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MAXPLOT

22.02.2008

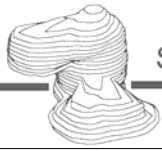


..... a/b	✕ Schwerpunkt	Horizontal/Vertikal-Maxplot
Größte Einzelfläche		

$d_{\max}$: 119.8 m 150° <--> 330° $r_{\min}$: 39.6 m -> 105° $r_{\sim}$: 53.4 m $r_{\max}$: 65.8 m -> 150°

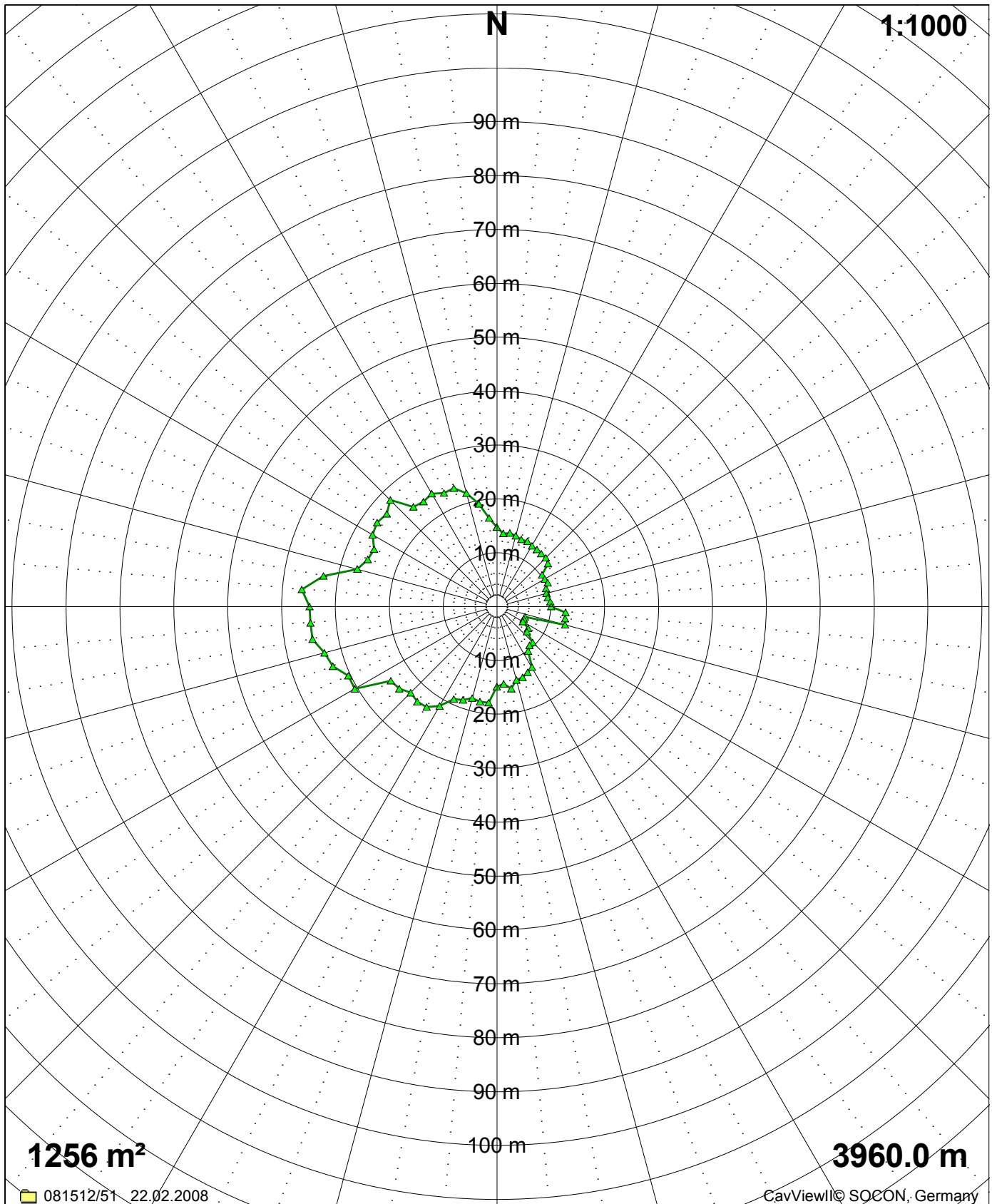
$a/b = 1.187$ $a = 122.5$ m (149°-300°) $b = 103.2$ m (43°-226°)

Größte Einzelfläche: 8554 m² in Teufe: 4018.5 m, Fläche aus Horizontal- u. Vertikalschnitten: 8960 m²



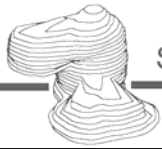
Harlingen BAS 3

22.02.2008



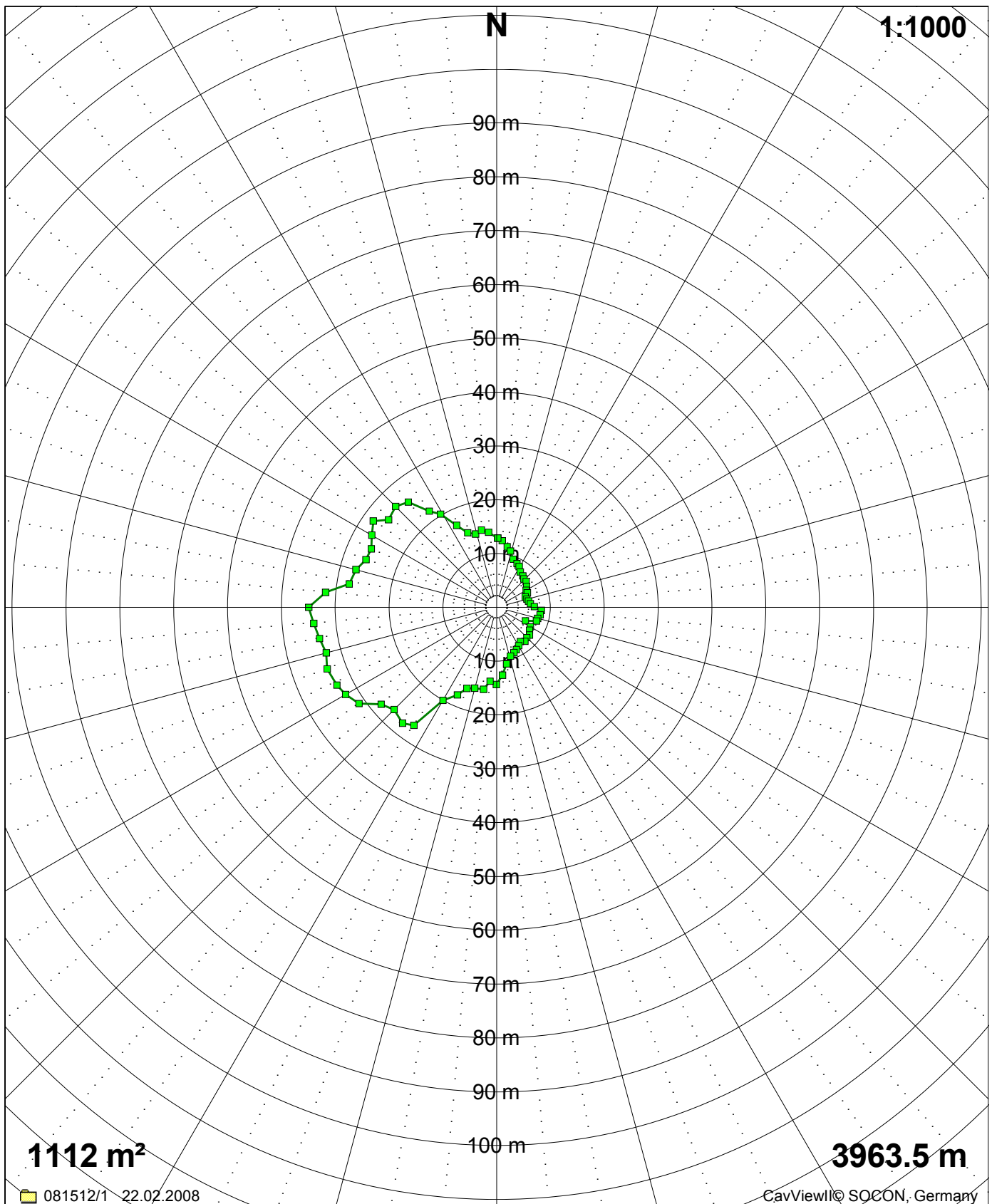
(22.02.2008)

d_{max}: 49.1 m 275° <--> 95° r_{min}: 5.5 m -> 115° r~: 20.0 m r_{max}: 36.3 m -> 275°



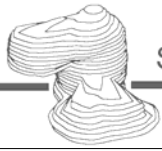
Harlingen BAS 3

22.02.2008



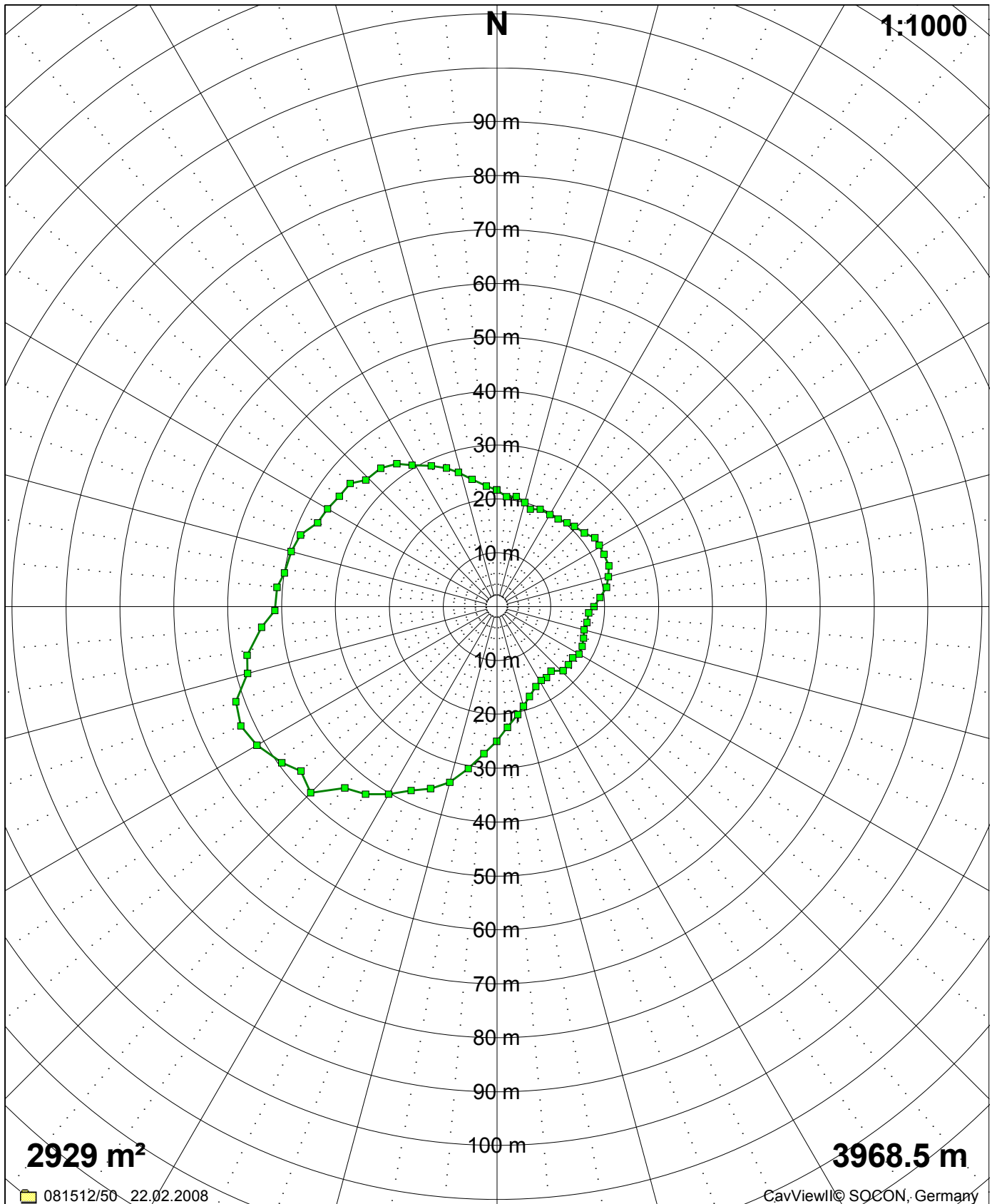
(22.02.2008)

d_{max}: 42.1 m 90° <--> 270° r_{min}: 5.7 m -> 70° r~: 18.8 m r_{max}: 34.9 m -> 270°



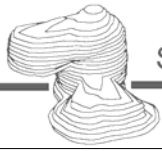
Harlingen BAS 3

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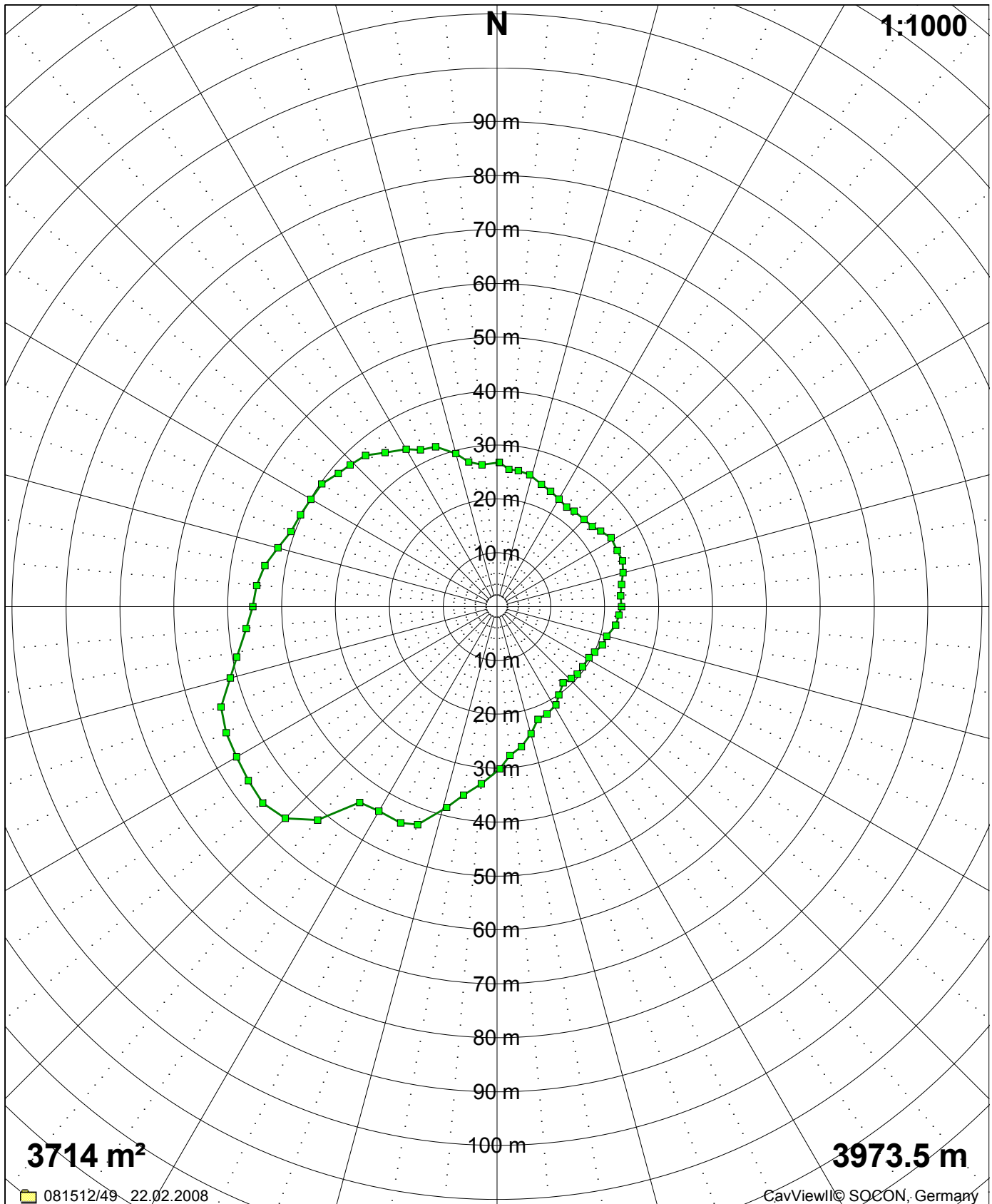
(22.02.2008)

d_{max}: 74.5 m 65° <--> 245° r_{min}: 15.6 m -> 140° r~: 30.5 m r_{max}: 52.4 m -> 245°



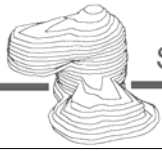
Harlingen BAS 3

22.02.2008



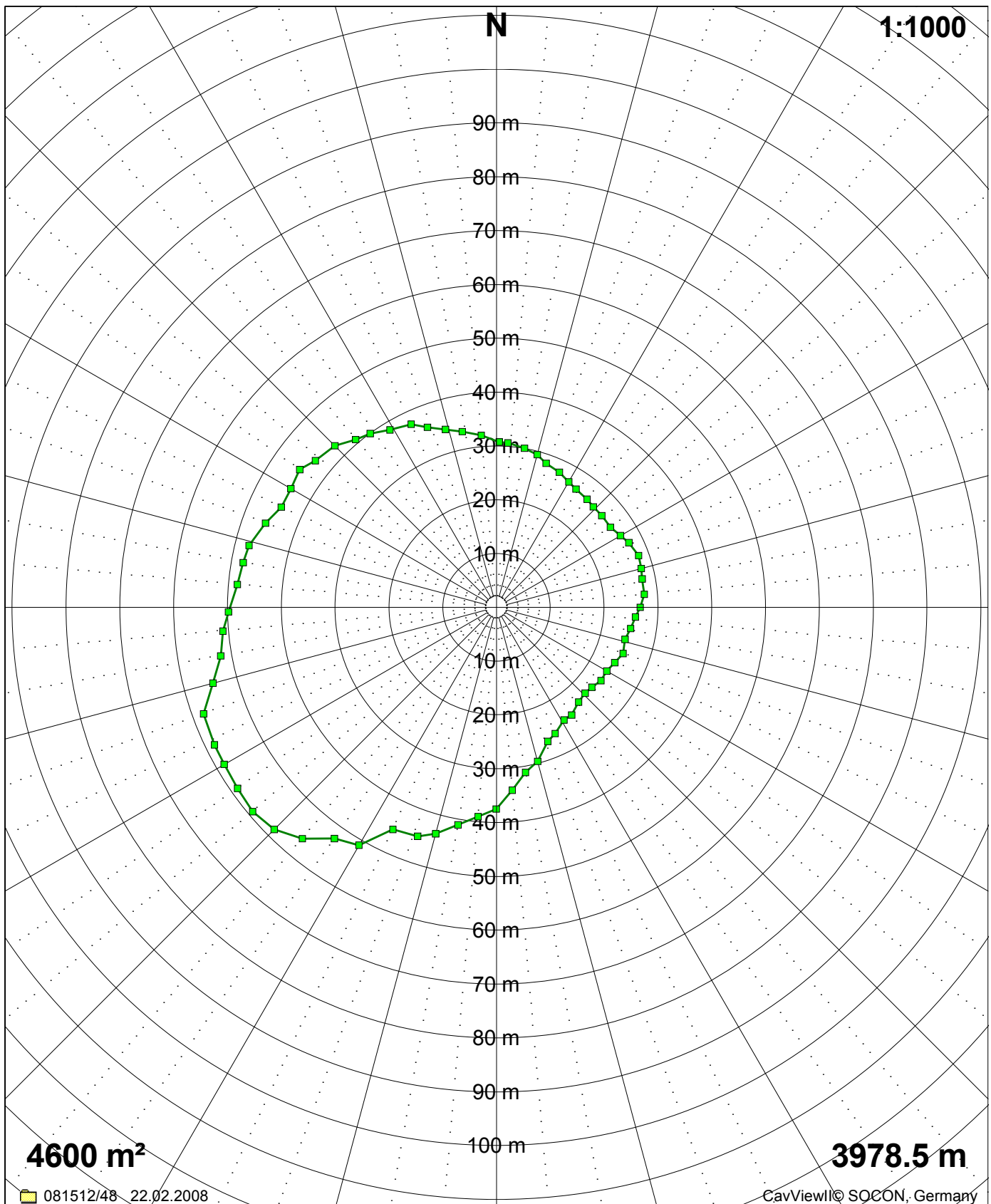
(22.02.2008)

d_{max}: 80.6 m 59° <--> 239° r_{min}: 18.7 m -> 139° r~: 34.4 m r_{max}: 56.7 m -> 230°



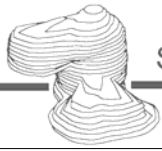
Harlingen BAS 3

22.02.2008



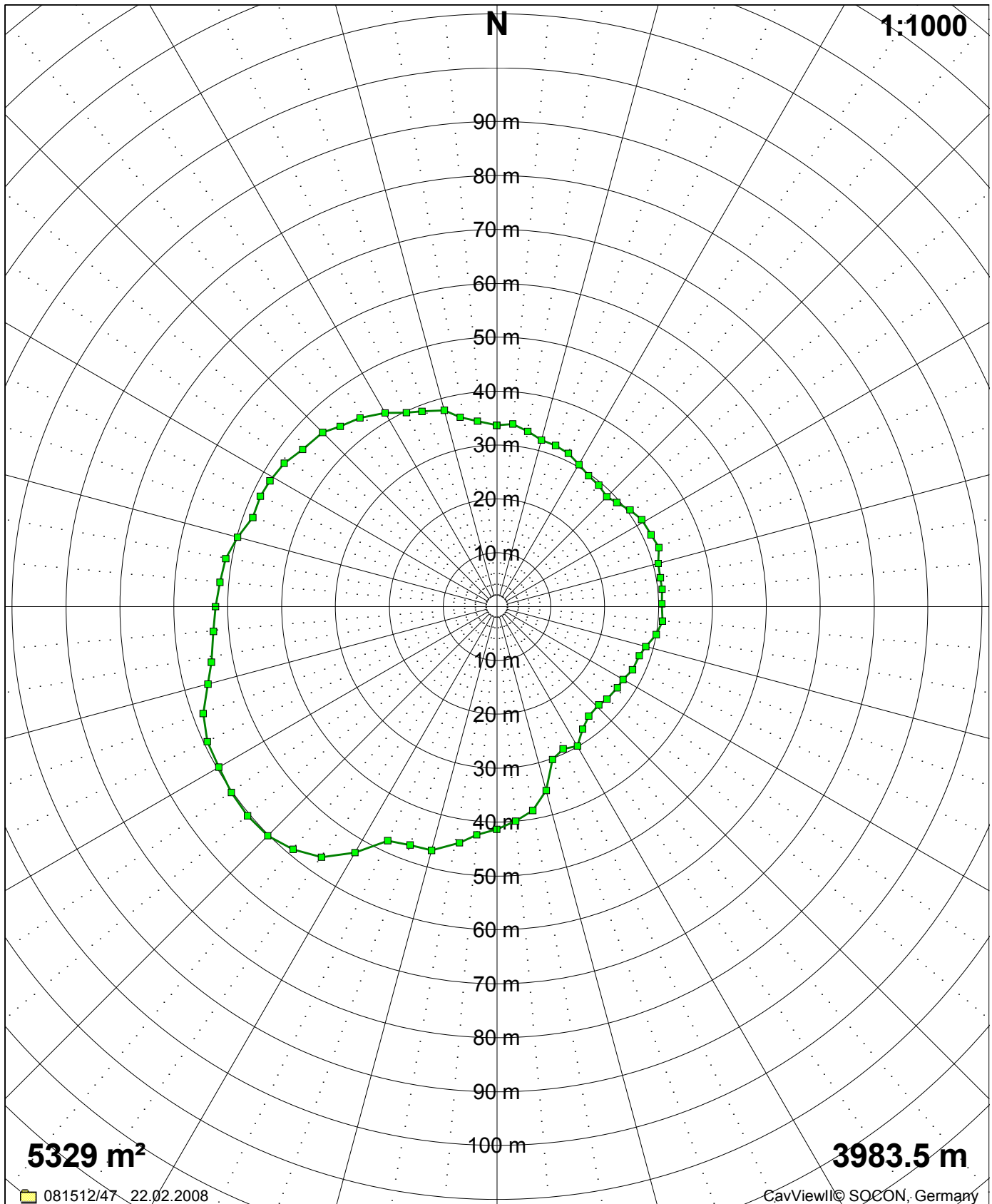
(22.02.2008)

d_{max}: 86.0 m 250° <--> 70° r_{min}: 22.9 m -> 134° r~: 38.3 m r_{max}: 59.1 m -> 230°



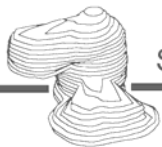
Harlingen BAS 3

22.02.2008



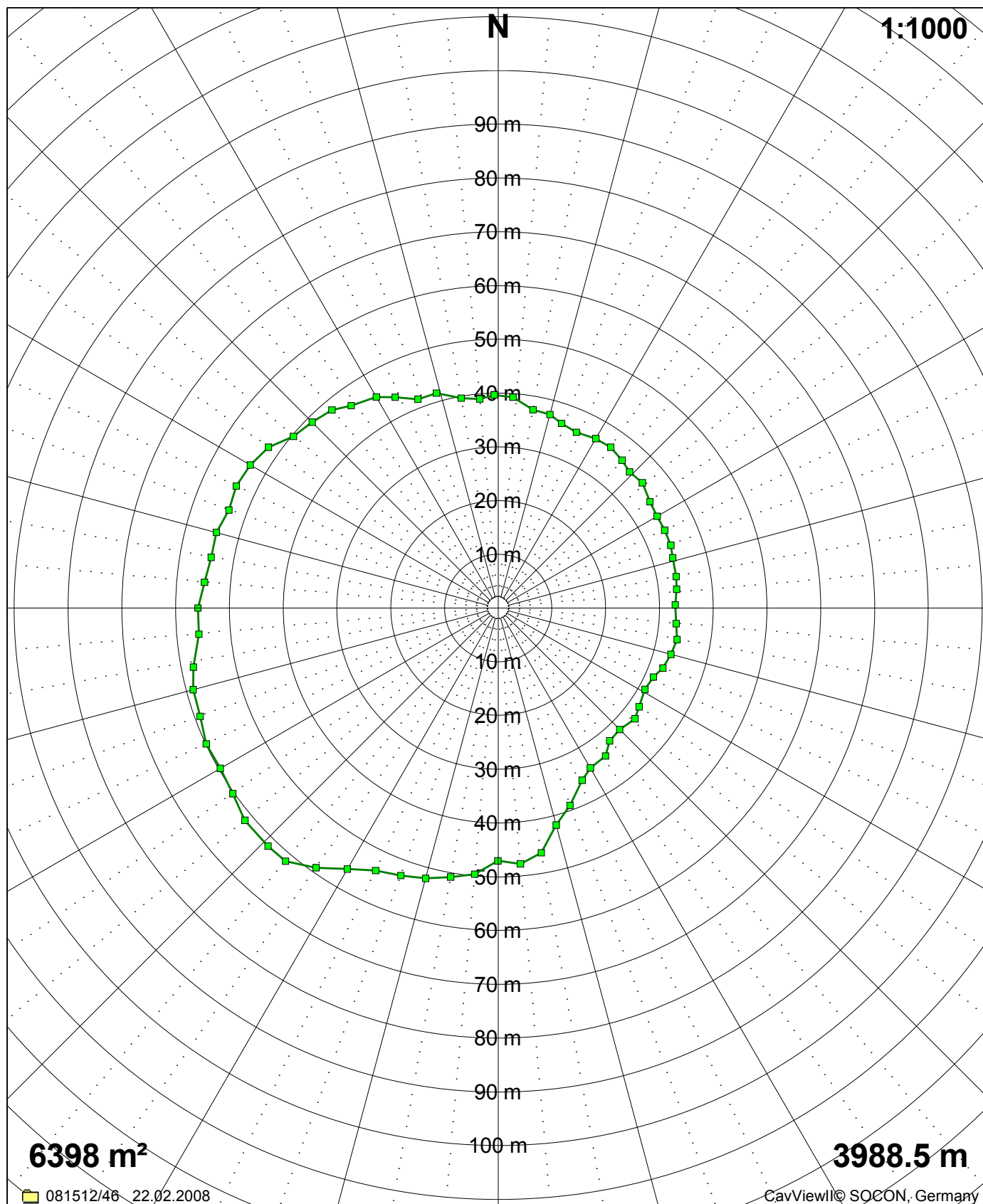
(22.02.2008)

d_{max}: 91.0 m 59° <--> 239° r_{min}: 26.2 m -> 134° r~: 41.2 m r_{max}: 60.4 m -> 230°



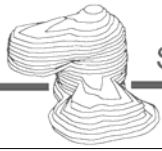
Harlingen BAS 3

22.02.2008



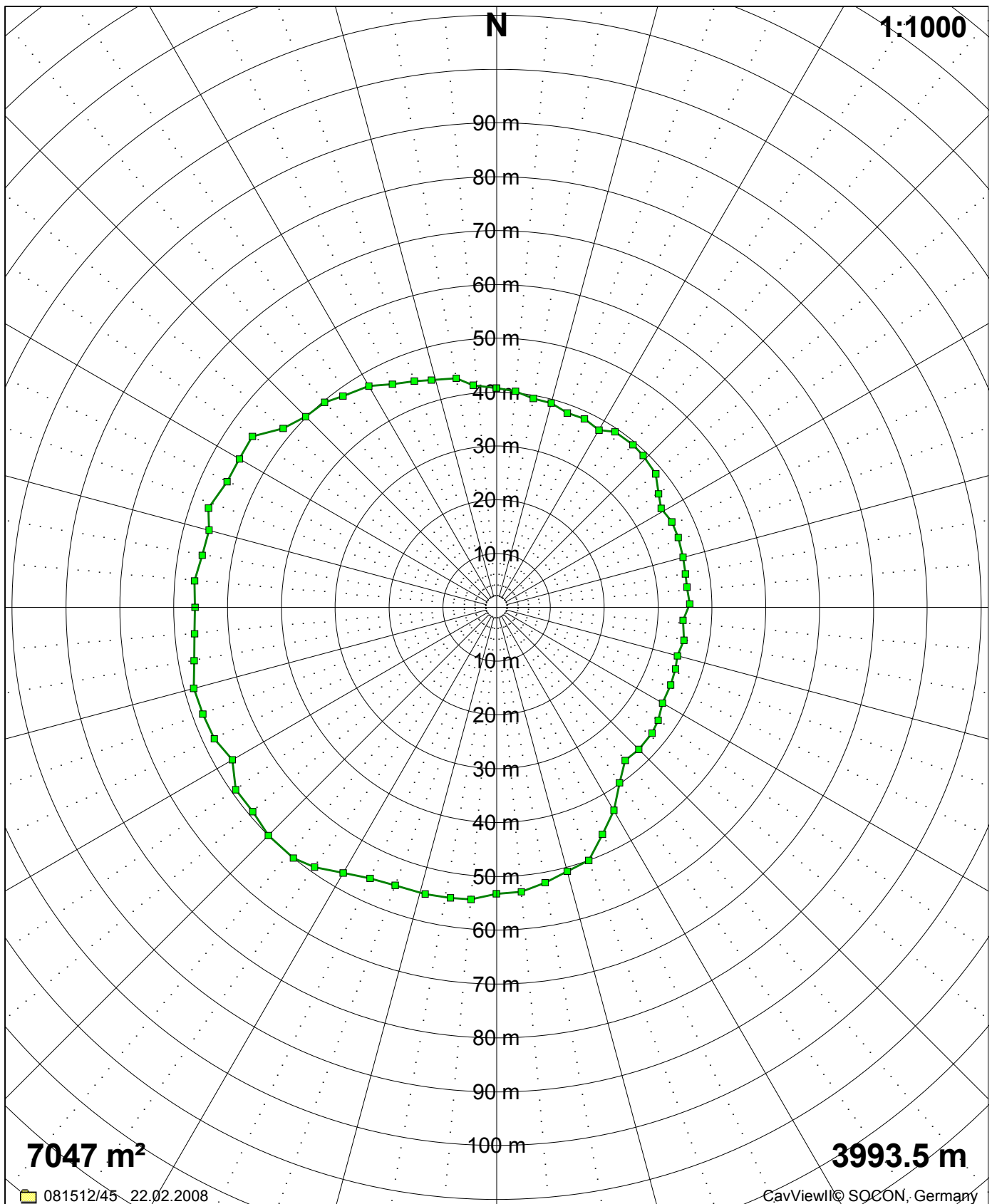
(22.02.2008)

d_{max}: 97.3 m 40° <--> 220° r_{min}: 31.2 m -> 119° r~: 45.1 m r_{max}: 61.5 m -> 224°



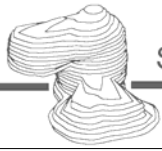
Harlingen BAS 3

22.02.2008



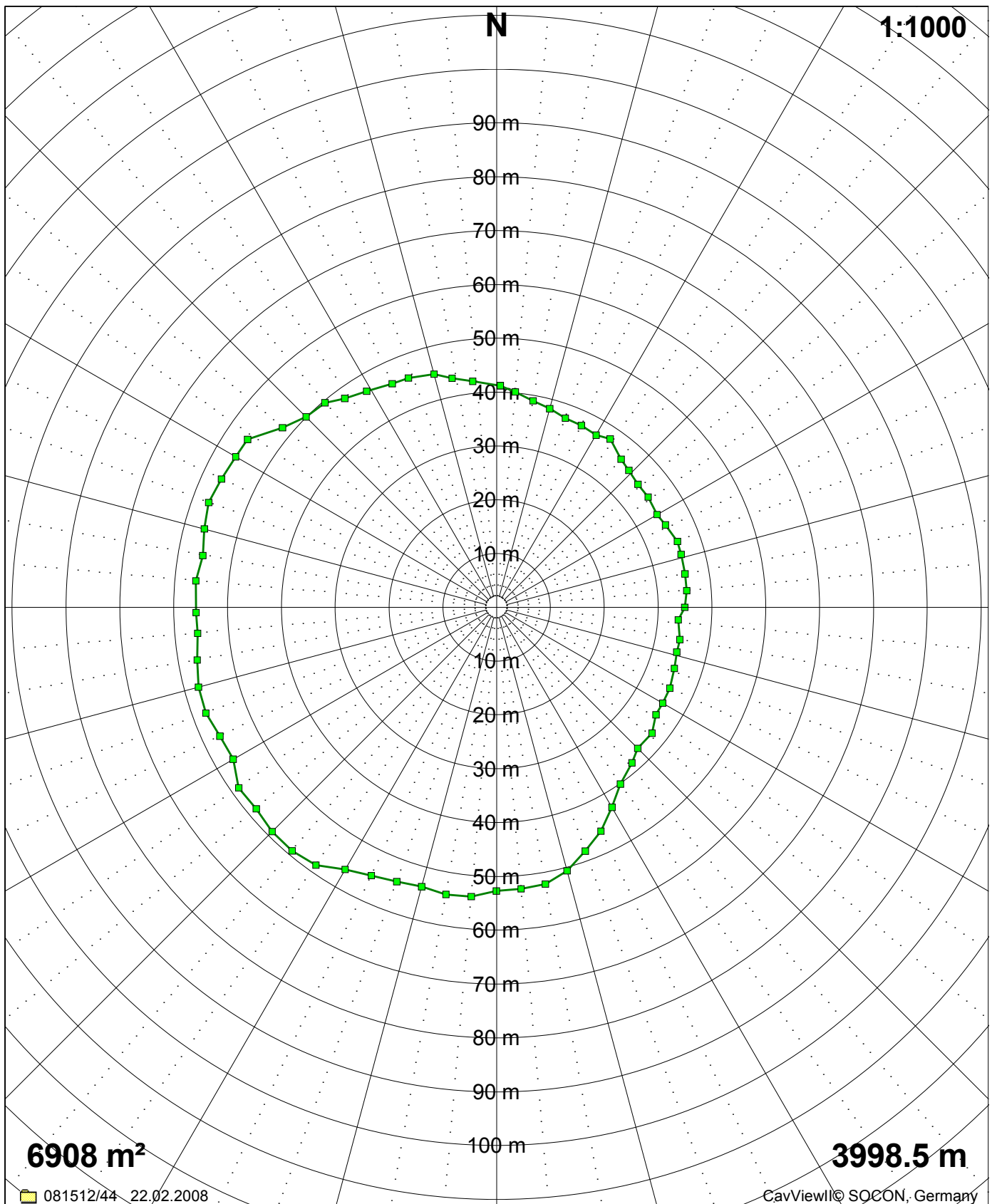
(22.02.2008)

d_{max}: 99.3 m 39° <--> 219° r_{min}: 34.7 m -> 94° r~: 47.4 m r_{max}: 59.9 m -> 219°



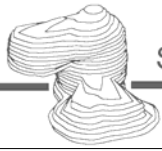
Harlingen BAS 3

22.02.2008



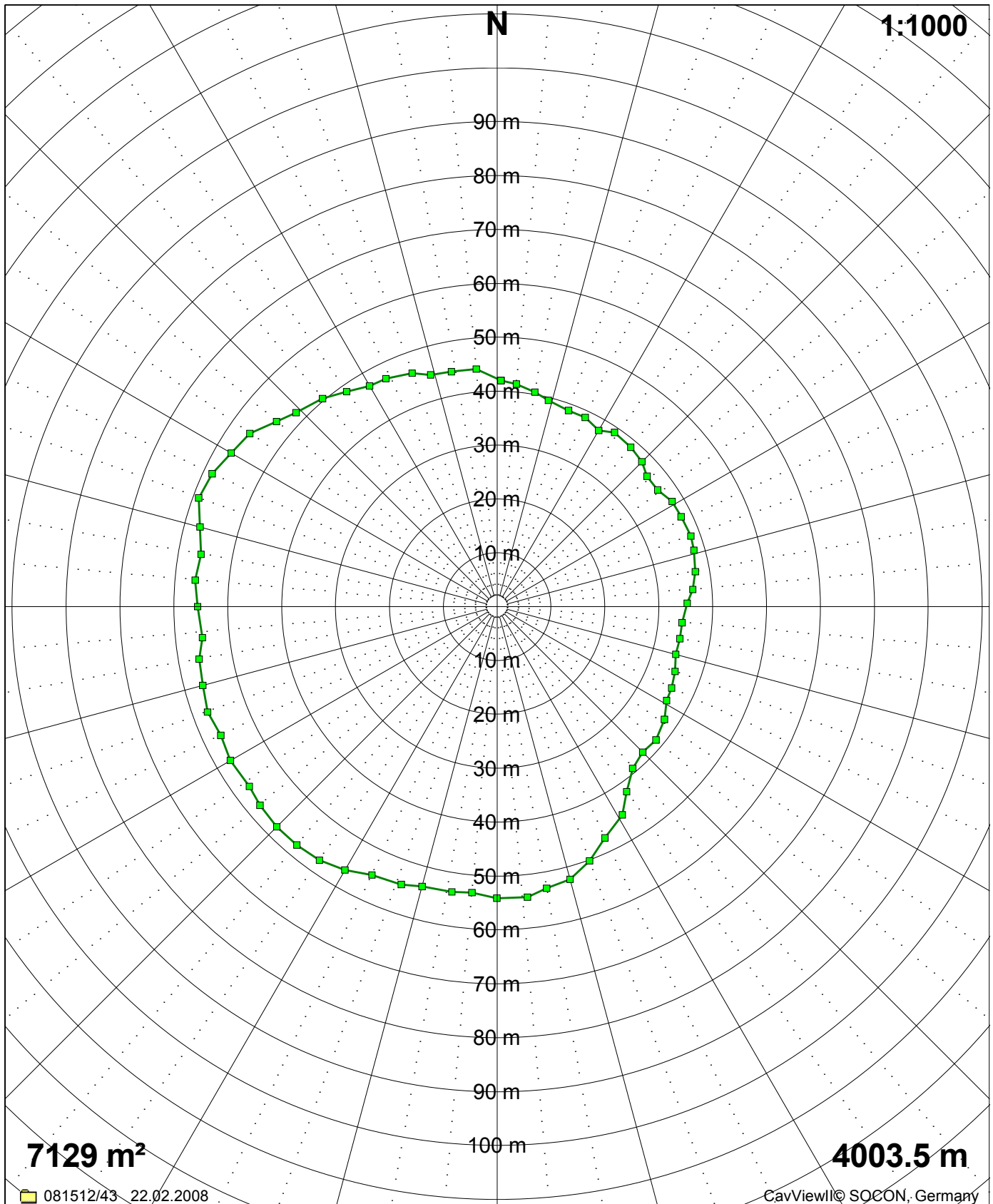
(22.02.2008)

d_{max}: 95.9 m 35° <--> 215° r_{min}: 33.8 m -> 94° r~: 46.9 m r_{max}: 59.1 m -> 220°



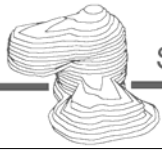
Harlingen BAS 3

22.02.2008



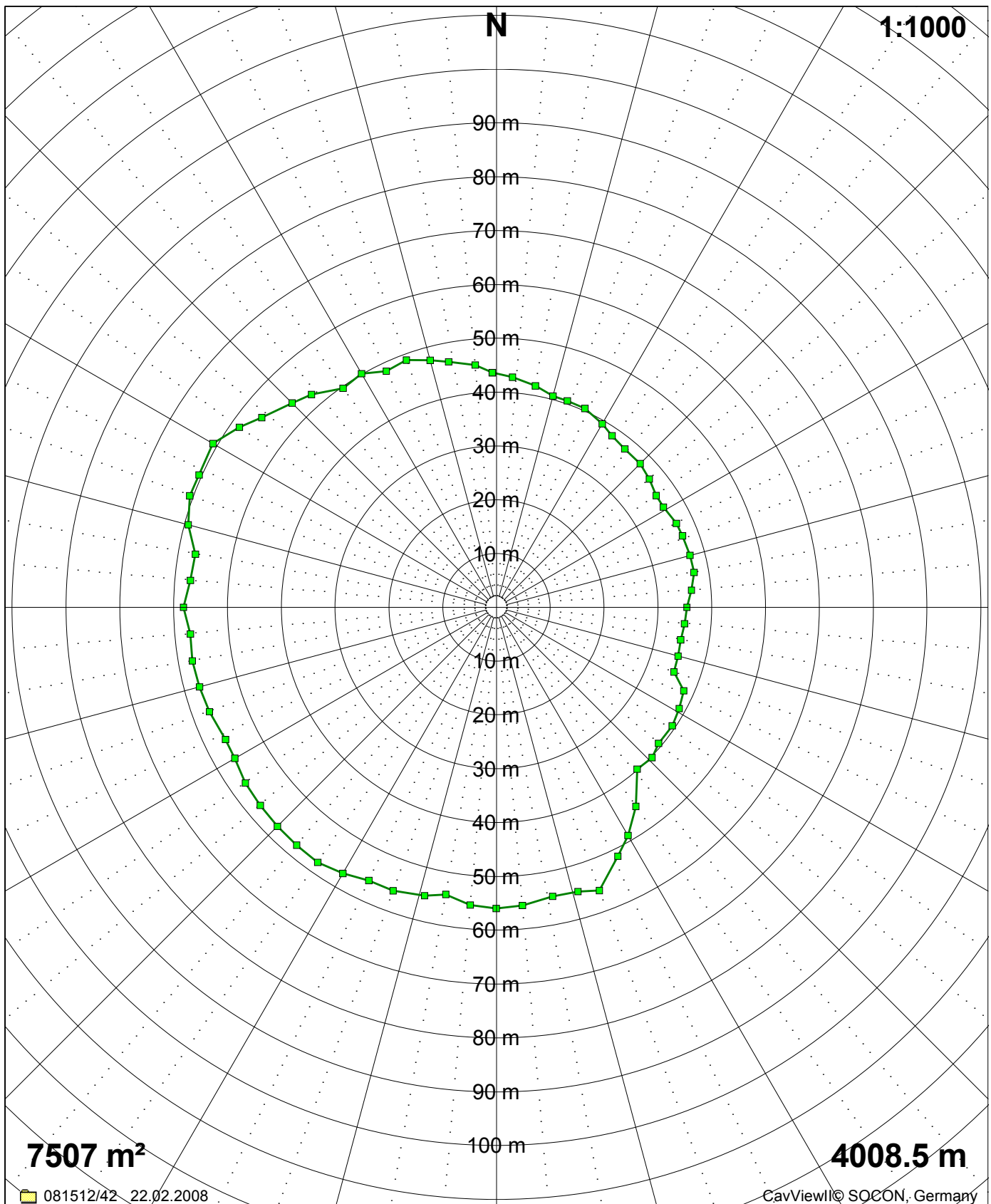
(22.02.2008)

$d_{\max}$: 98.4 m 174° <--> 354° $r_{\min}$: 34.3 m -> 104° $r_{\sim}$: 47.6 m $r_{\max}$: 58.9 m -> 290°



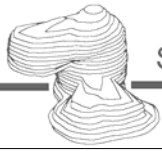
Harlingen BAS 3

22.02.2008



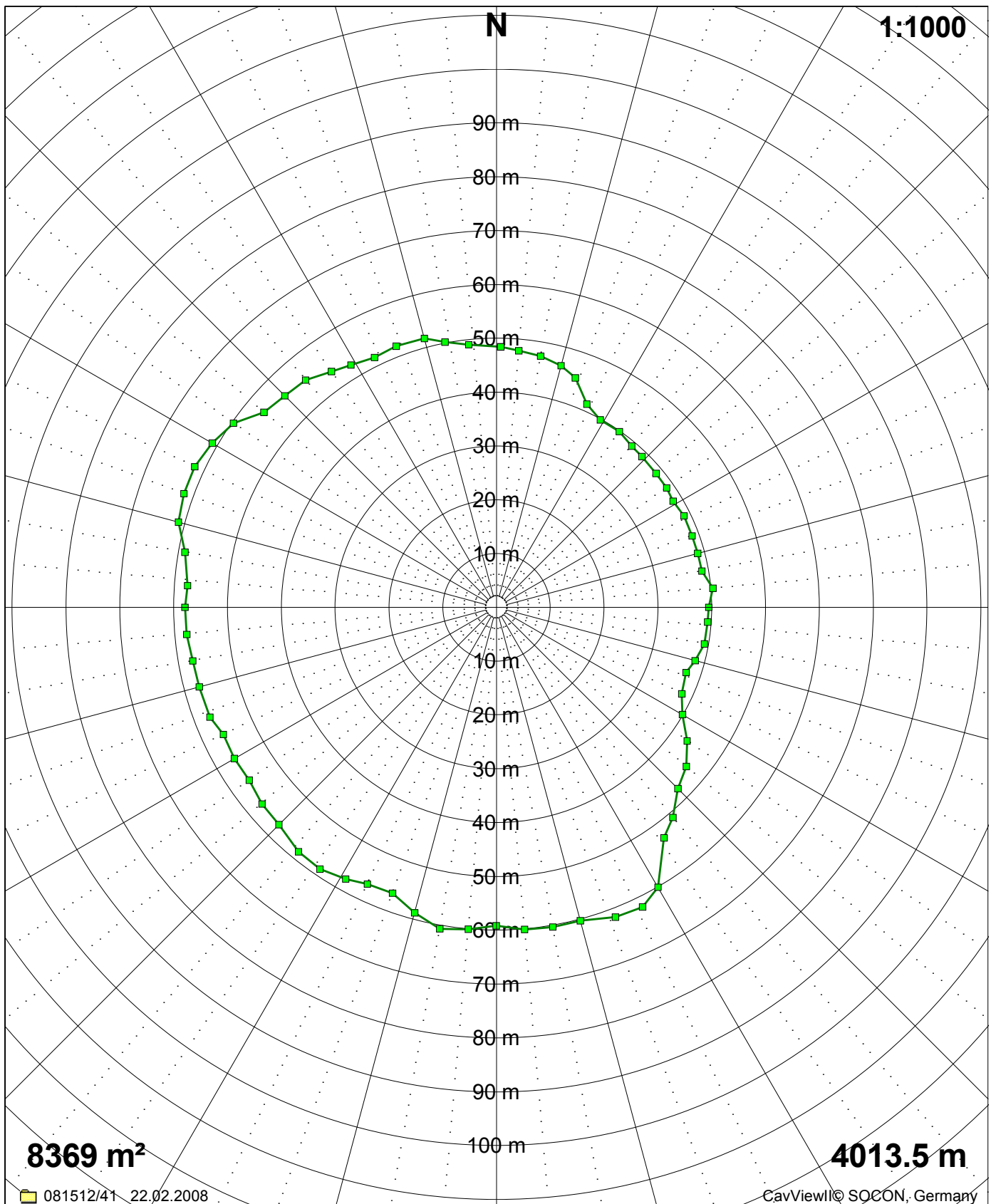
(22.02.2008)

d_{max}: 104.8 m 340° <--> 160° r_{min}: 34.8 m -> 100° r~: 48.9 m r_{max}: 60.8 m -> 300°



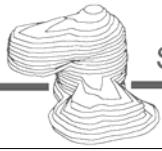
Harlingen BAS 3

22.02.2008



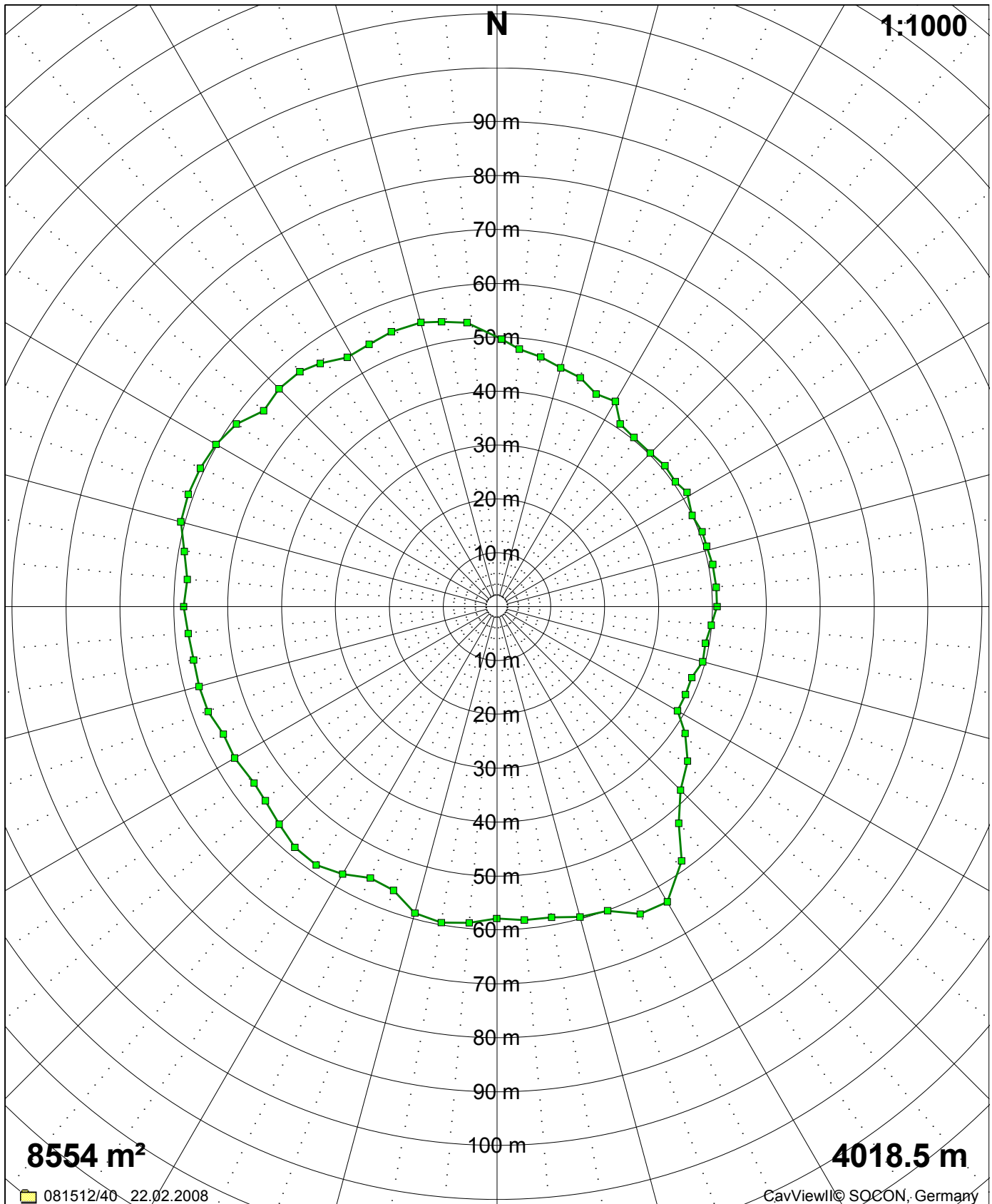
(22.02.2008)

d_{max}: 113.6 m 159° <--> 339° r_{min}: 37.3 m -> 109° r~: 51.6 m r_{max}: 61.9 m -> 154°



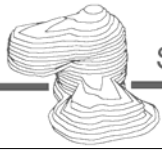
Harlingen BAS 3

22.02.2008



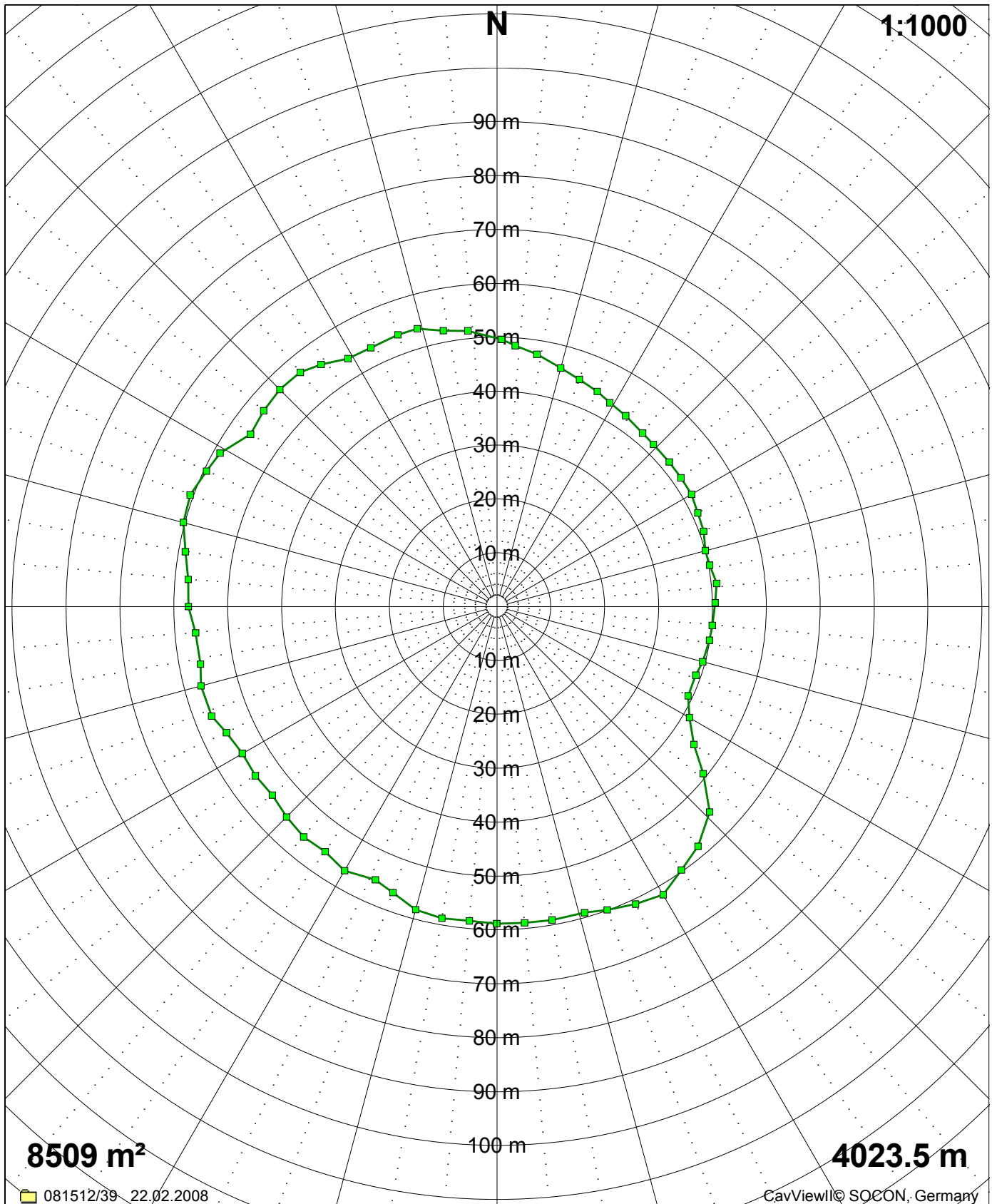
—■— (22.02.2008)

d_{max}: 117.2 m 150° <--> 330° r_{min}: 38.5 m -> 110° r~: 52.2 m r_{max}: 63.2 m -> 150°



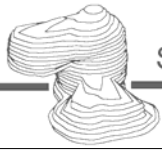
Harlingen BAS 3

22.02.2008



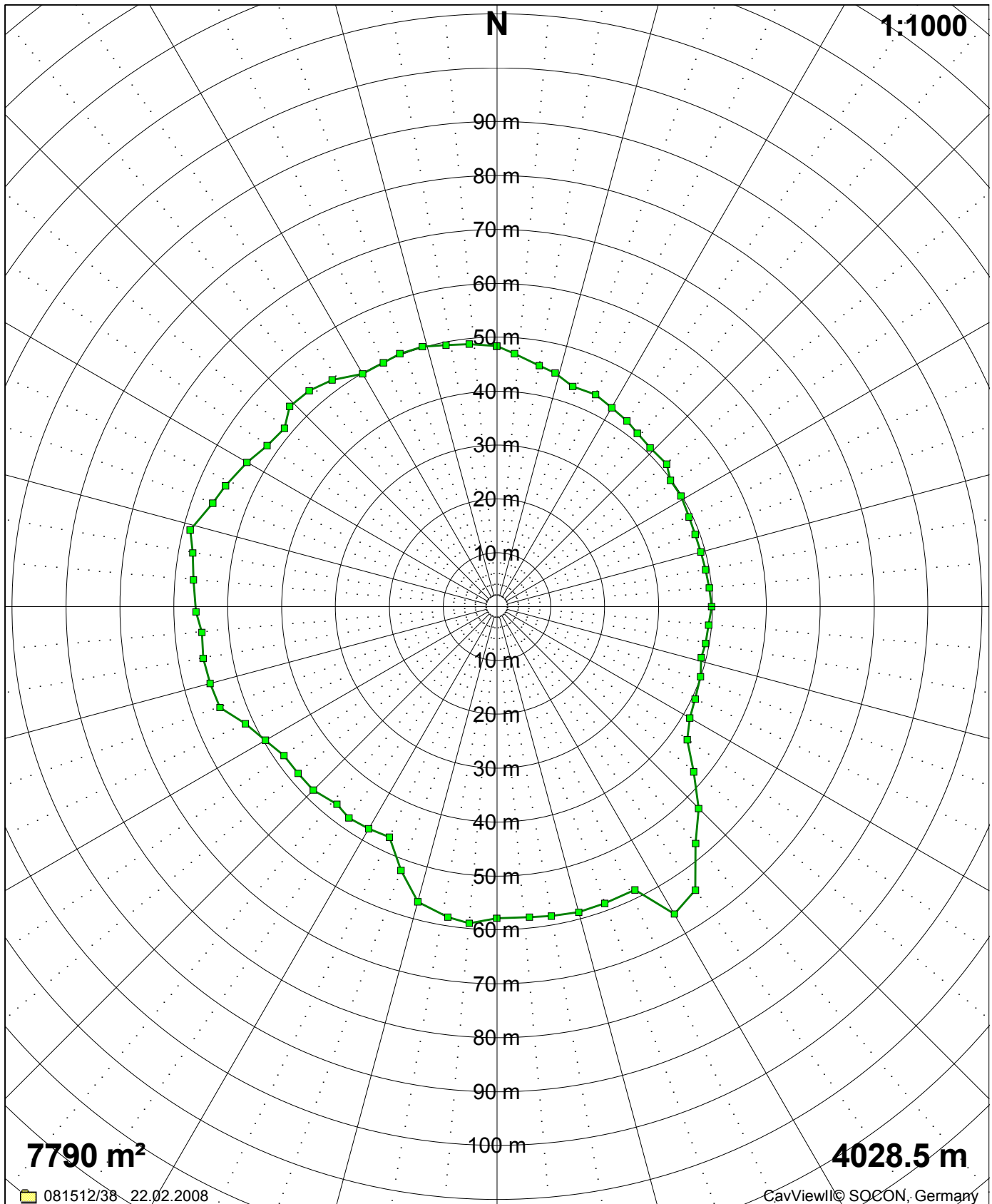
(22.02.2008)

d_{max}: 115.3 m 150° <--> 330° r_{min}: 39.1 m -> 111° r~: 52.0 m r_{max}: 61.7 m -> 150°



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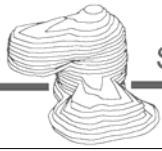


081512/38 22.02.2008

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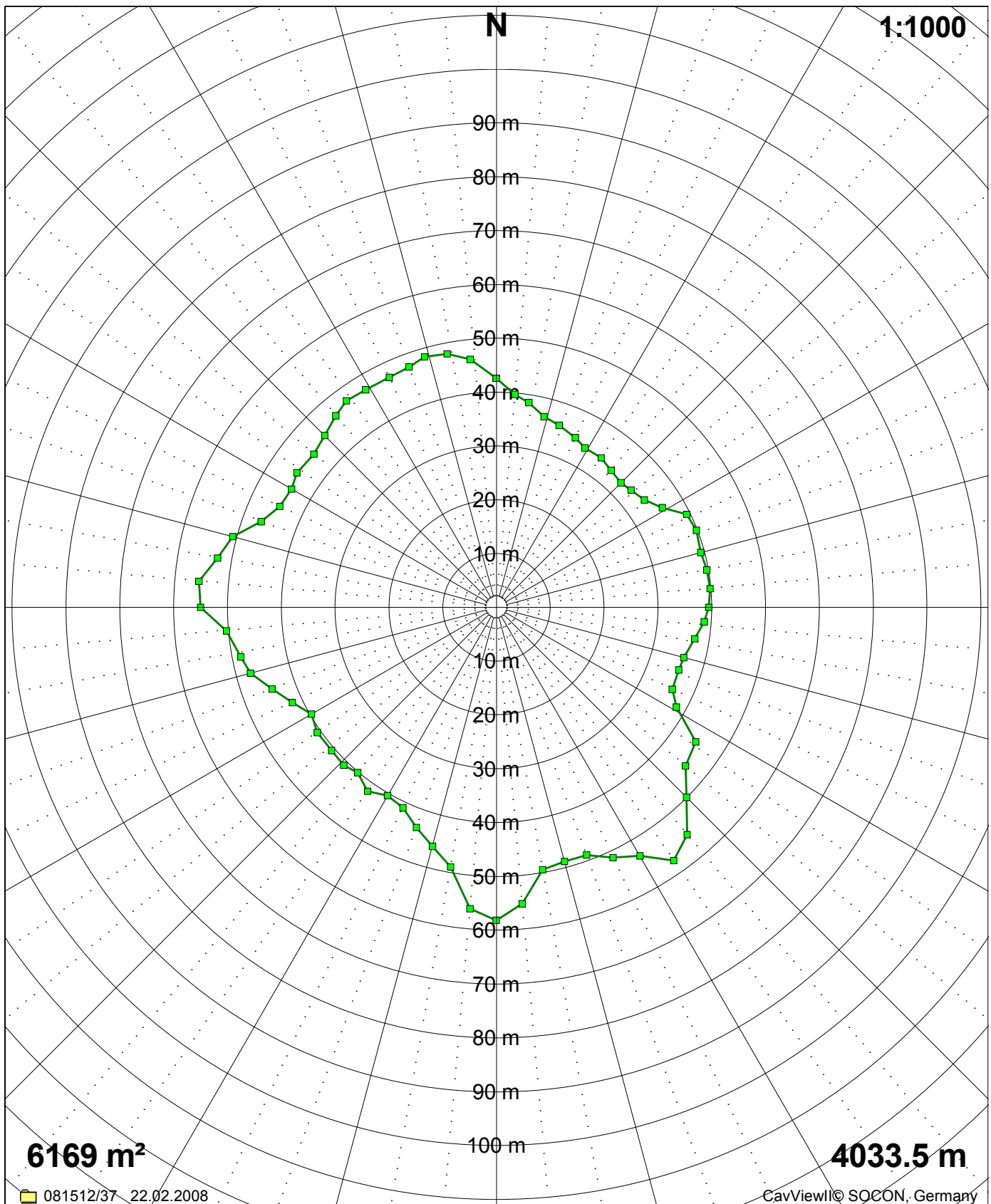
(22.02.2008)

$d_{\max}$: 115.8 m 145° <--> 325° $r_{\min}$: 39.1 m -> 104° $r_{\sim}$: 49.8 m $r_{\max}$: 65.8 m -> 150°



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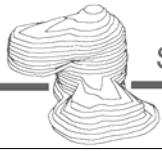


081512/37 22.02.2008

CavView!© SOCON, Germany

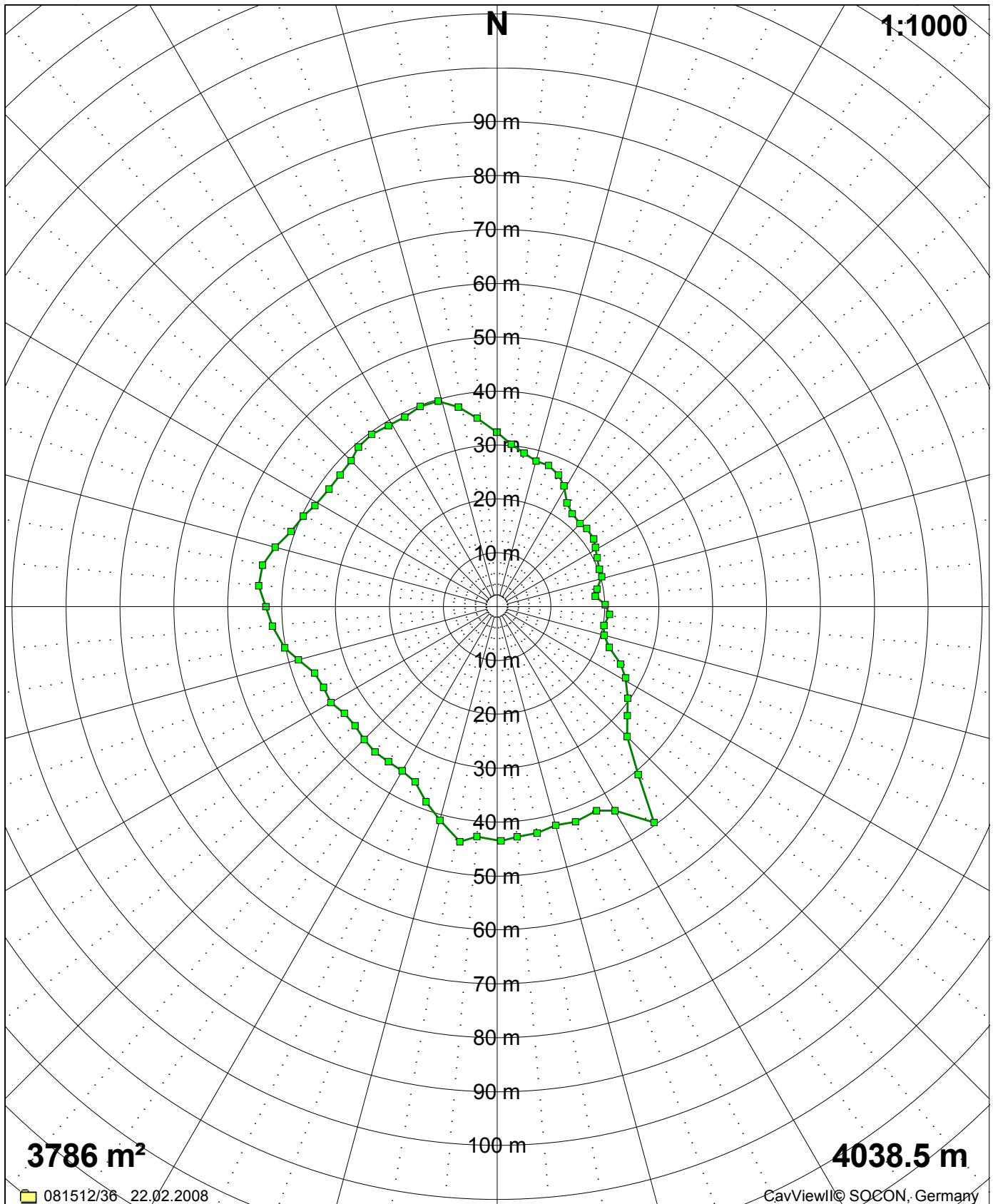
(22.02.2008)

d_{max}: 104.8 m 325° <--> 145° r_{min}: 32.7 m -> 45° r~: 44.3 m r_{max}: 58.1 m -> 180°



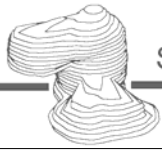
Harlingen BAS 3

22.02.2008



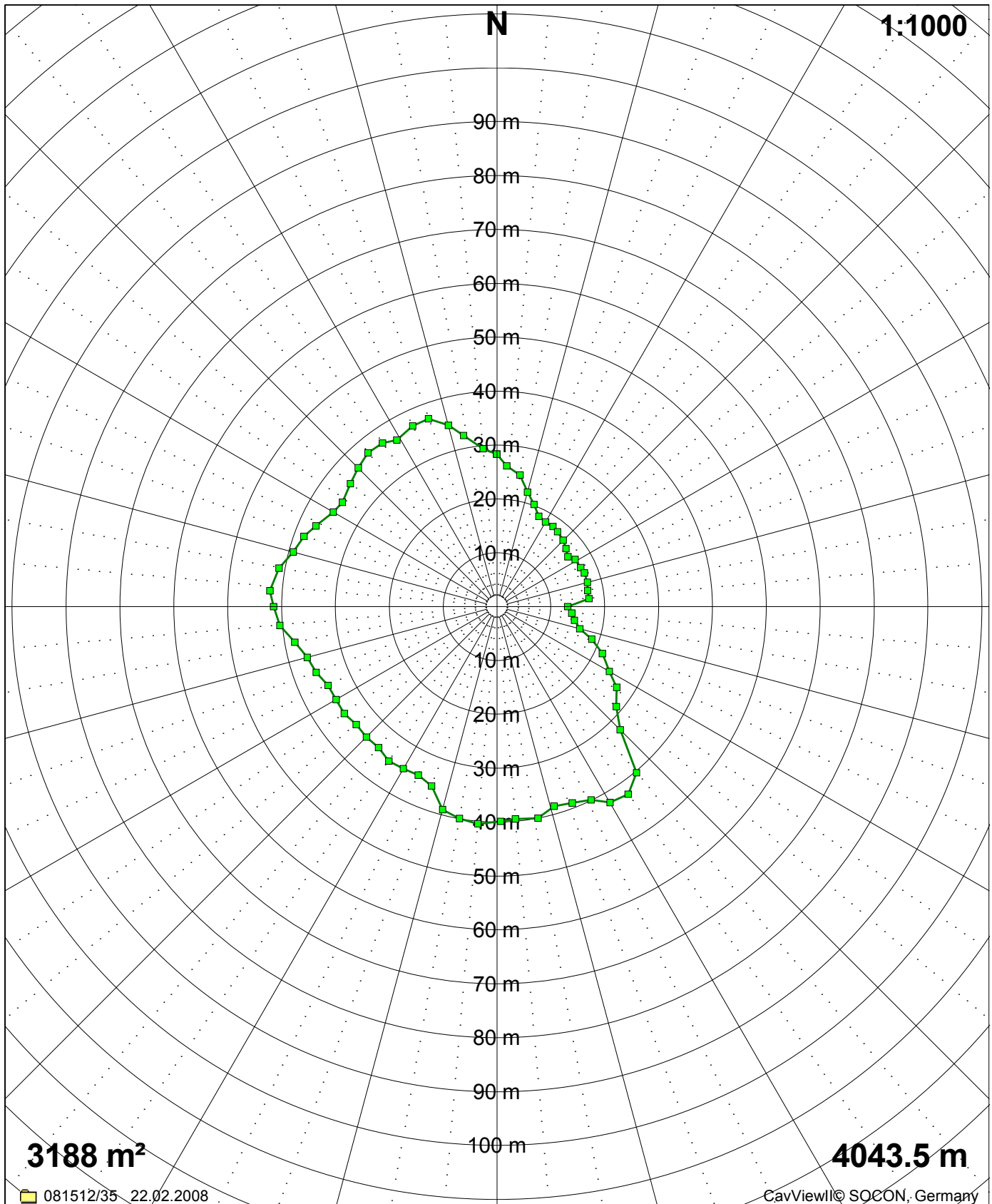
(22.02.2008)

d_{max}: 89.0 m 324° <--> 144° r_{min}: 18.3 m -> 84° r~: 34.7 m r_{max}: 49.5 m -> 144°

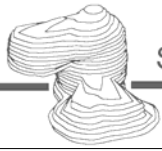


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22.02.2008

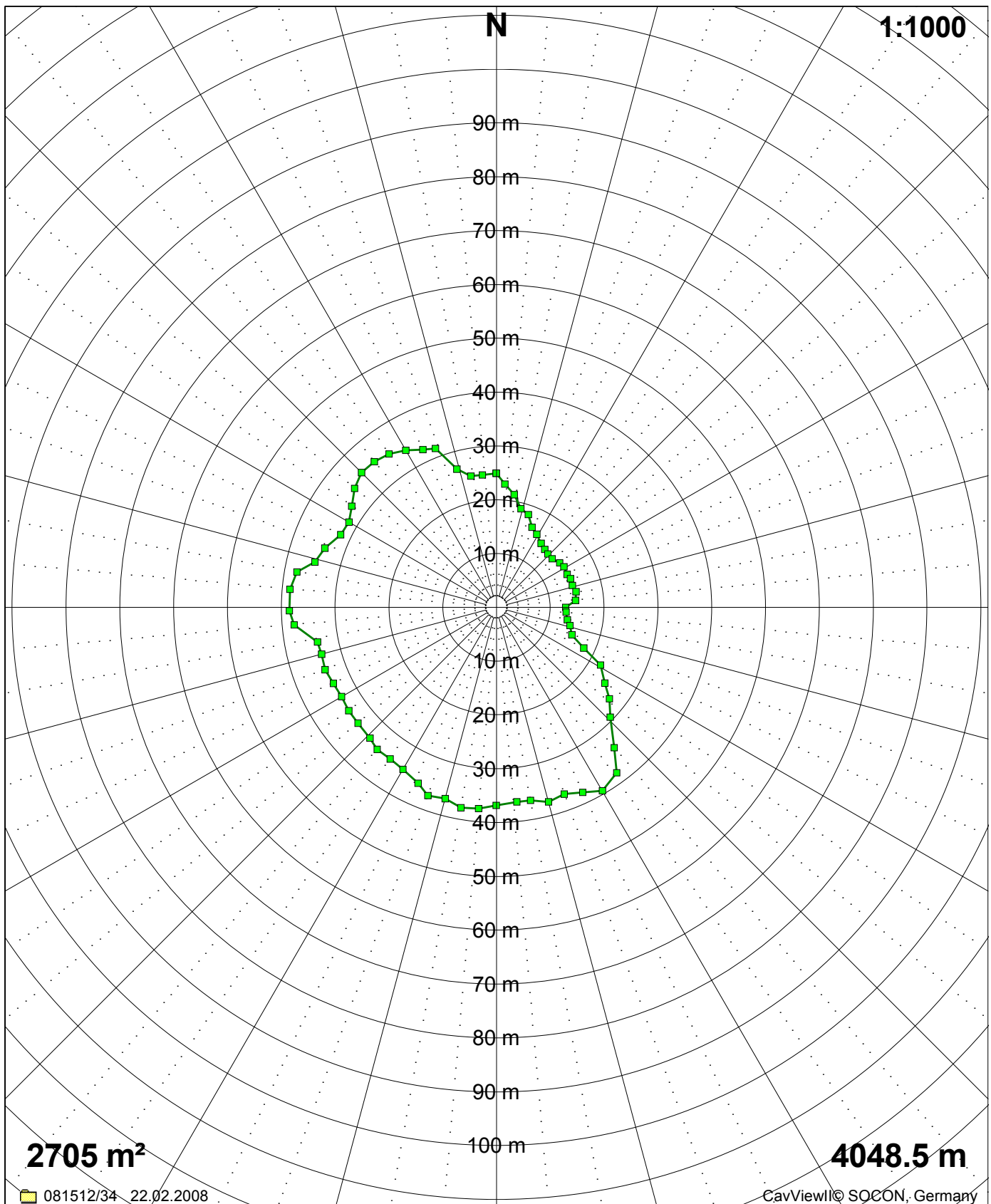


d_{max}: 79.5 m 325° <--> 145° r_{min}: 13.1 m -> 90° r~: 31.9 m r_{max}: 42.5 m -> 145°



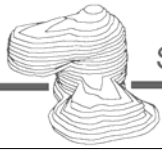
Harlingen BAS 3

22.02.2008



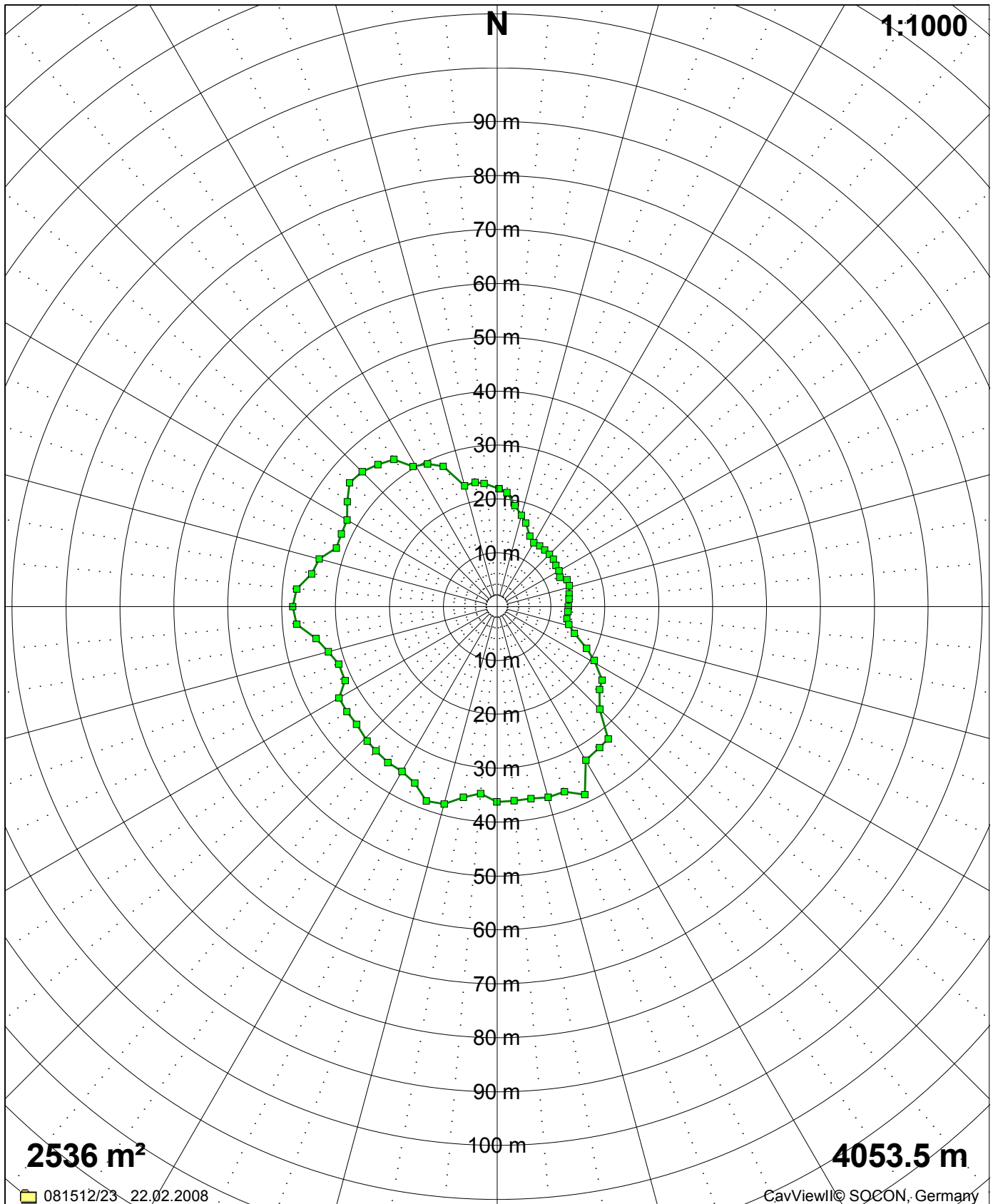
—■— (22.02.2008)

d_{max}: 73.1 m 150° <--> 330° r_{min}: 12.9 m -> 90° r~: 29.3 m r_{max}: 39.4 m -> 150°



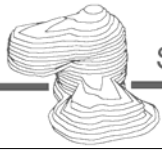
Harlingen BAS 3

22.02.2008



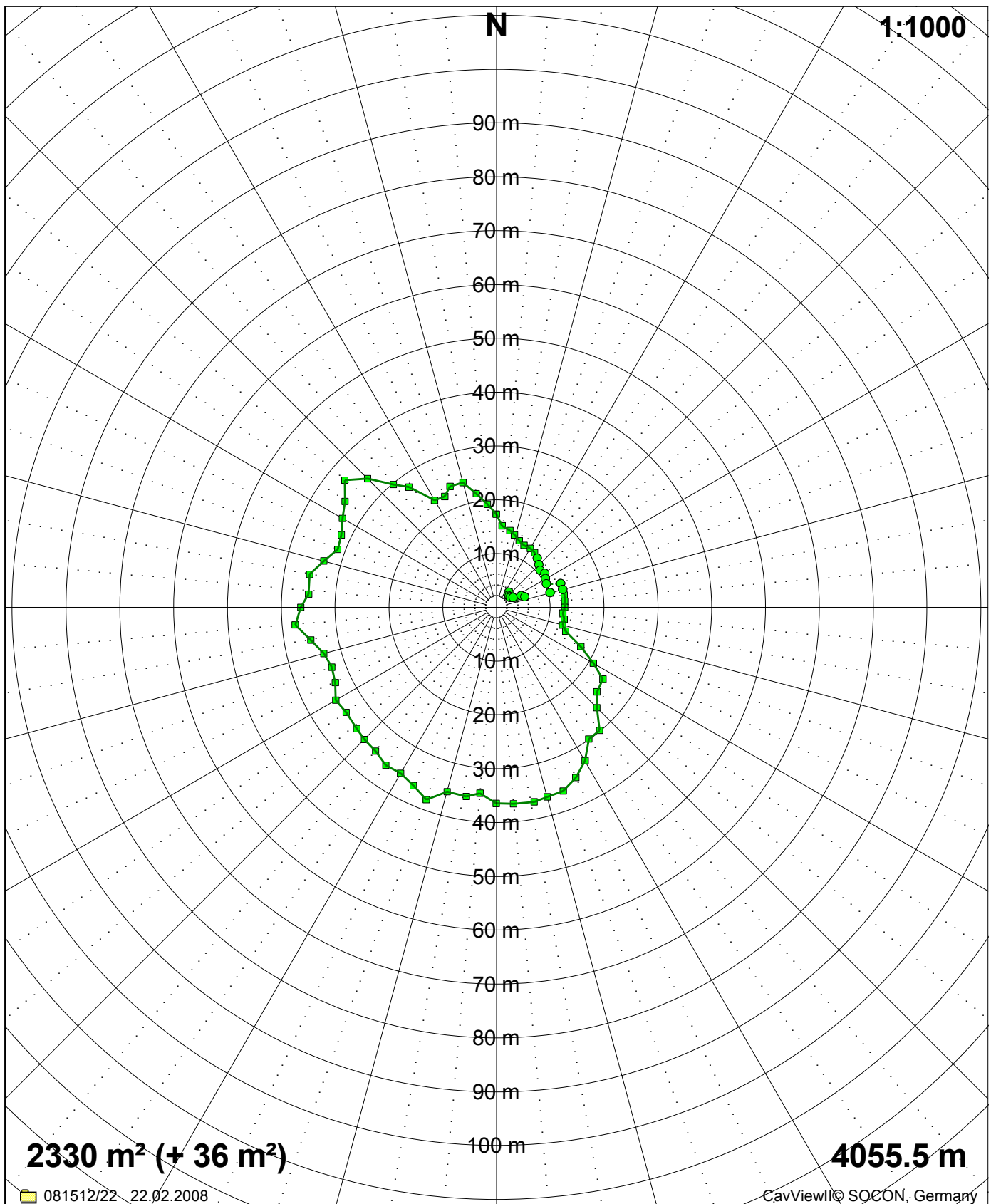
(22.02.2008)

d_{max}: 67.6 m 335° <--> 155° r_{min}: 12.8 m -> 65° r~: 28.4 m r_{max}: 38.5 m -> 155°



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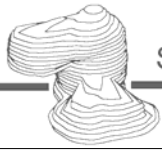
22.02.2008



—■— (22.02.2008)

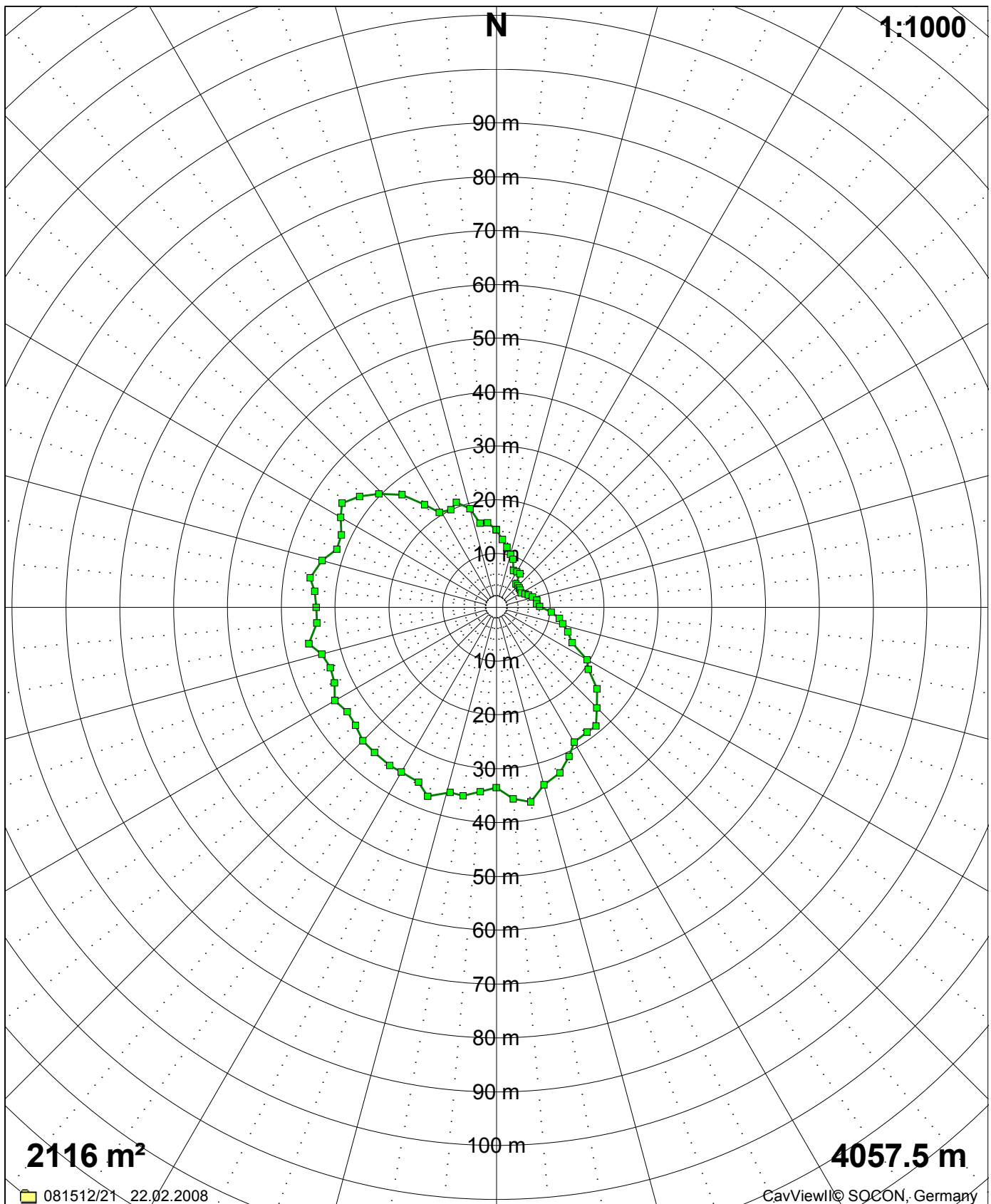
—●— Hintersolung (22.02.2008)

d_{max}: 61.2 m 130° <--> 310° r_{min}: 3.1 m -> 47° r~: 27.4 m r_{max}: 38.0 m -> 200°



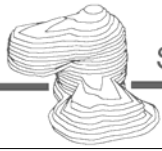
Harlingen BAS 3

22.02.2008



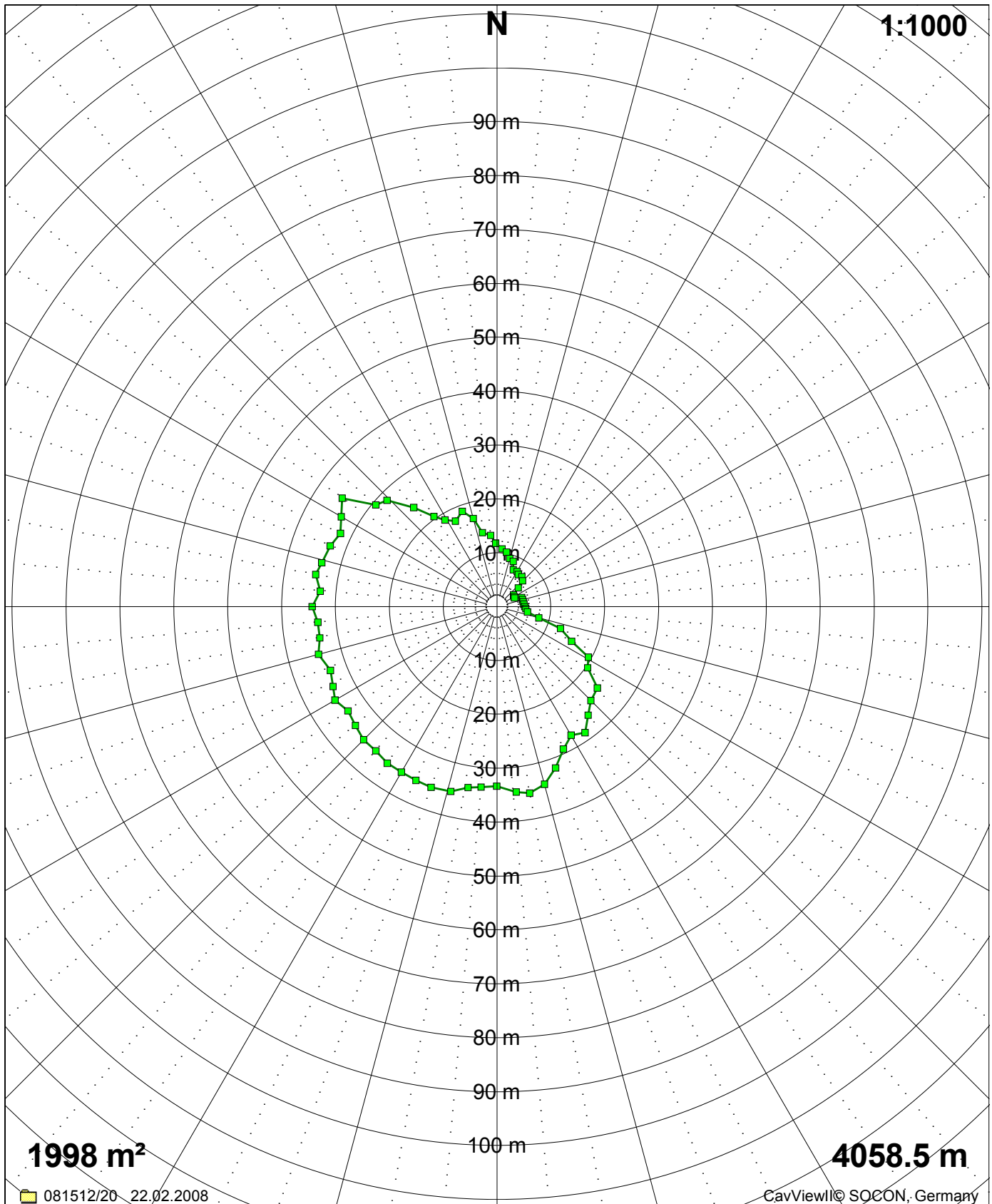
(22.02.2008)

d_{max}: 56.7 m 129° <--> 309° r_{min}: 5.3 m -> 60° r~: 26.0 m r_{max}: 37.3 m -> 200°

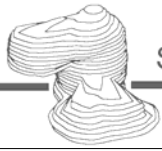


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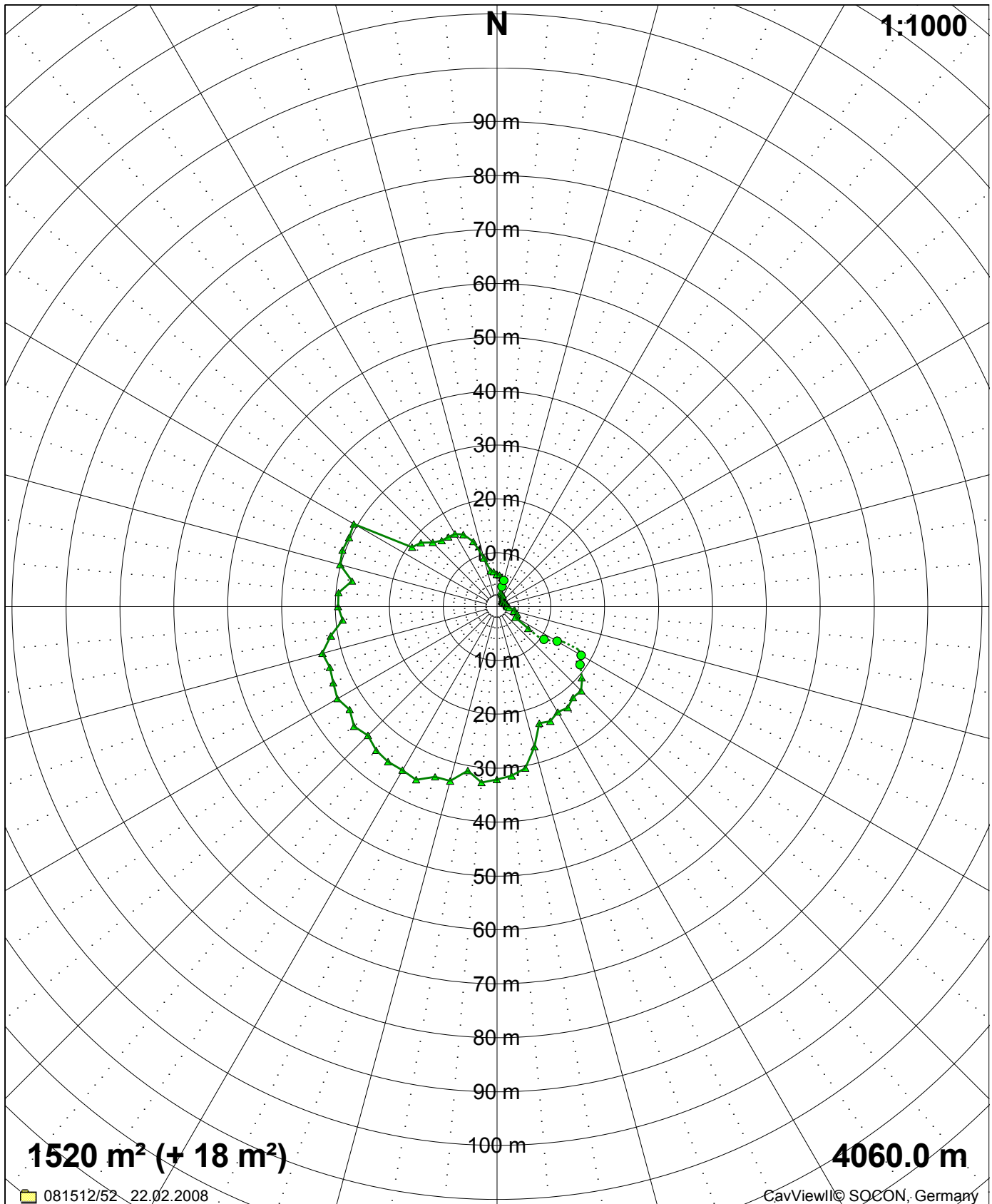


d_{max}: 56.0 m 125° <--> 305° r_{min}: 3.7 m -> 64° r~: 25.2 m r_{max}: 35.7 m -> 200°



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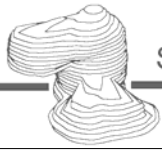
22.02.2008



—■— (22.02.2008)

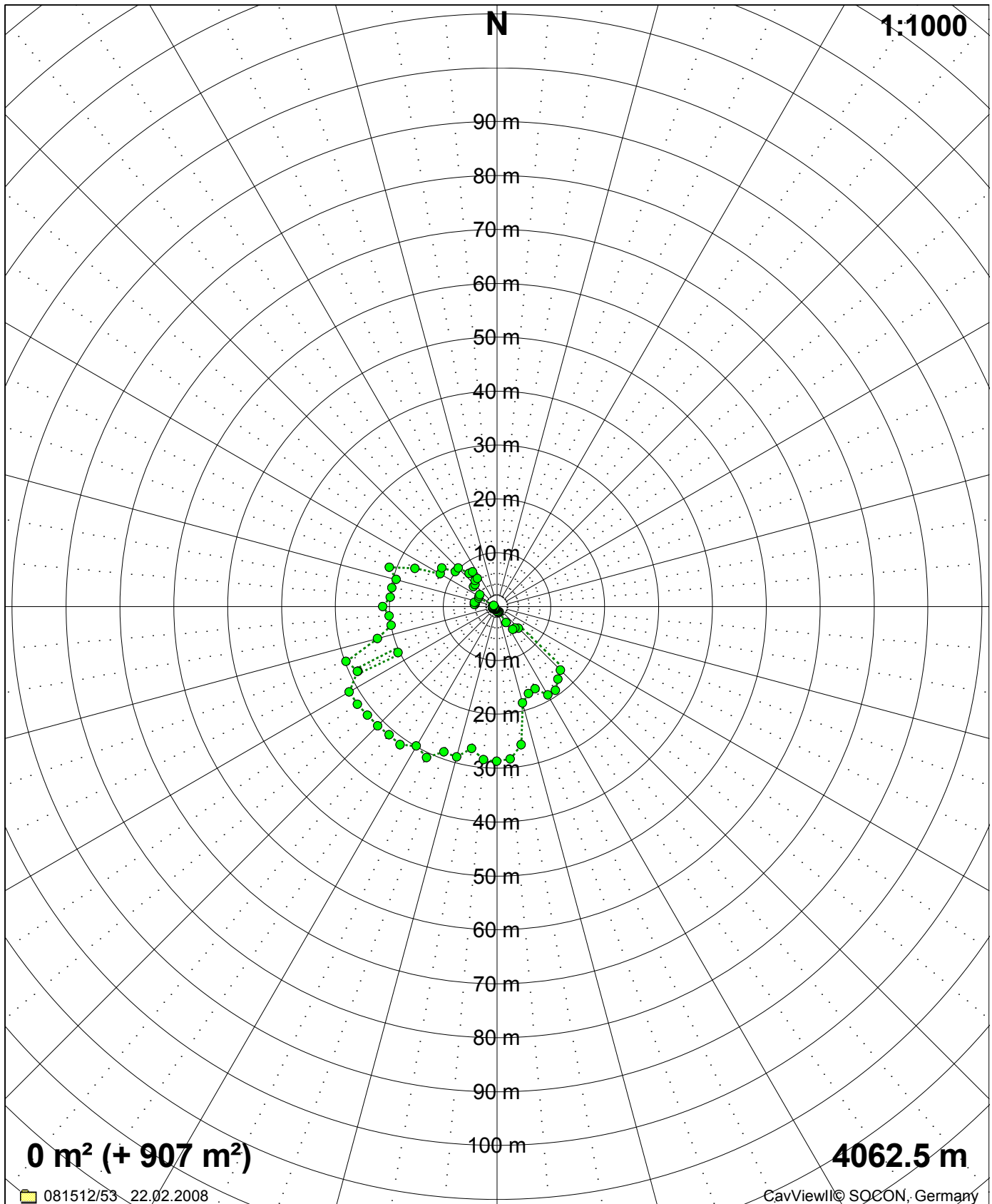
—●— Hintersolung (22.02.2008)

$d_{\max}$: 48.7 m 120° <--> 300° $r_{\min}$: 1.4 m -> 55° $r_{\sim}$: 22.1 m $r_{\max}$: 35.5 m -> 205°



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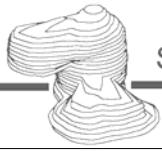
22.02.2008



—■— (22.02.2008)

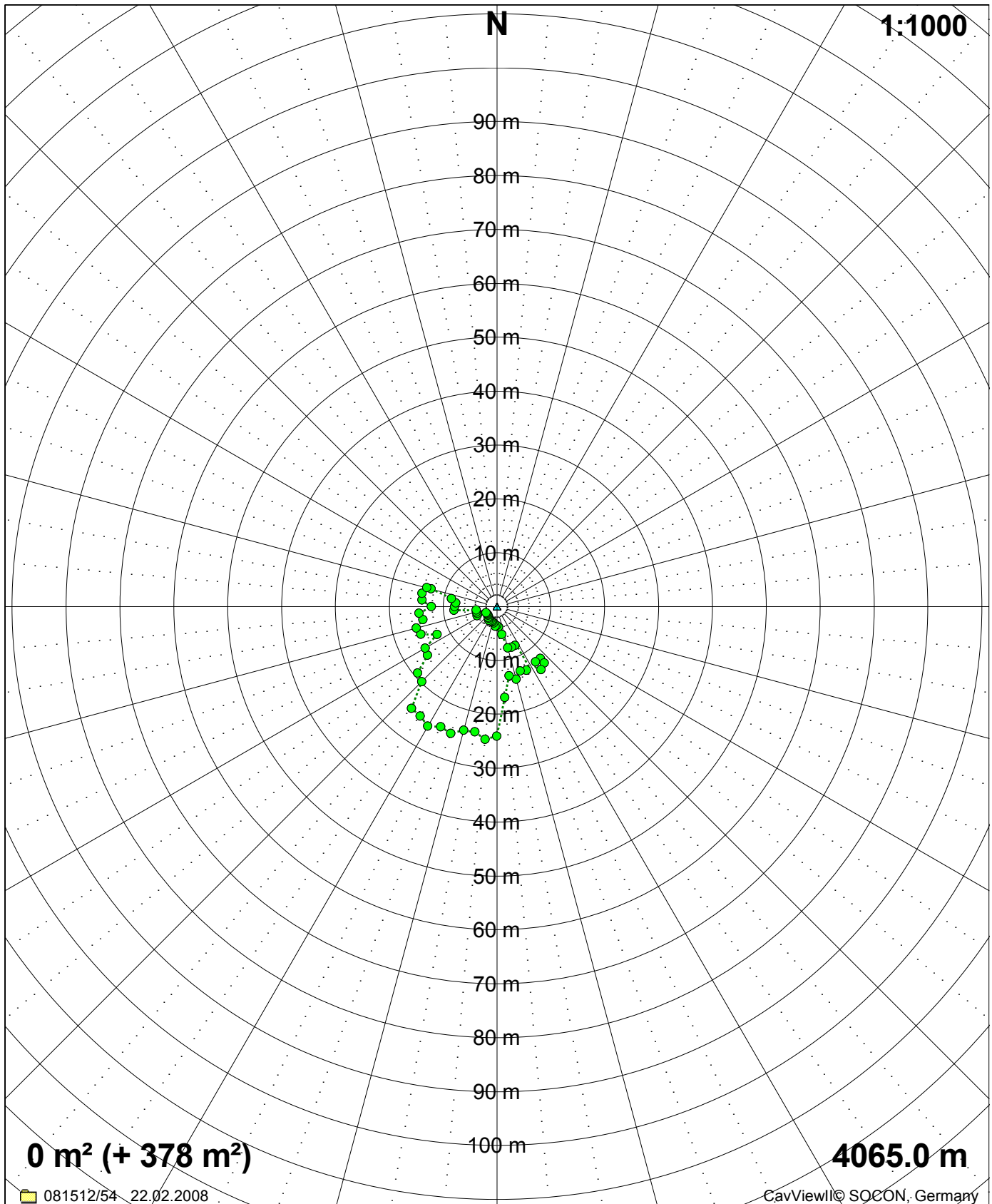
—●— Hintersolung (22.02.2008)

d_{max}: 31.6 m 60° <--> 240° r_{min}: 0.0 m -> 0° r~: 17.0 m r_{max}: 31.6 m -> 240°



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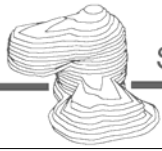
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(22.02.2008)

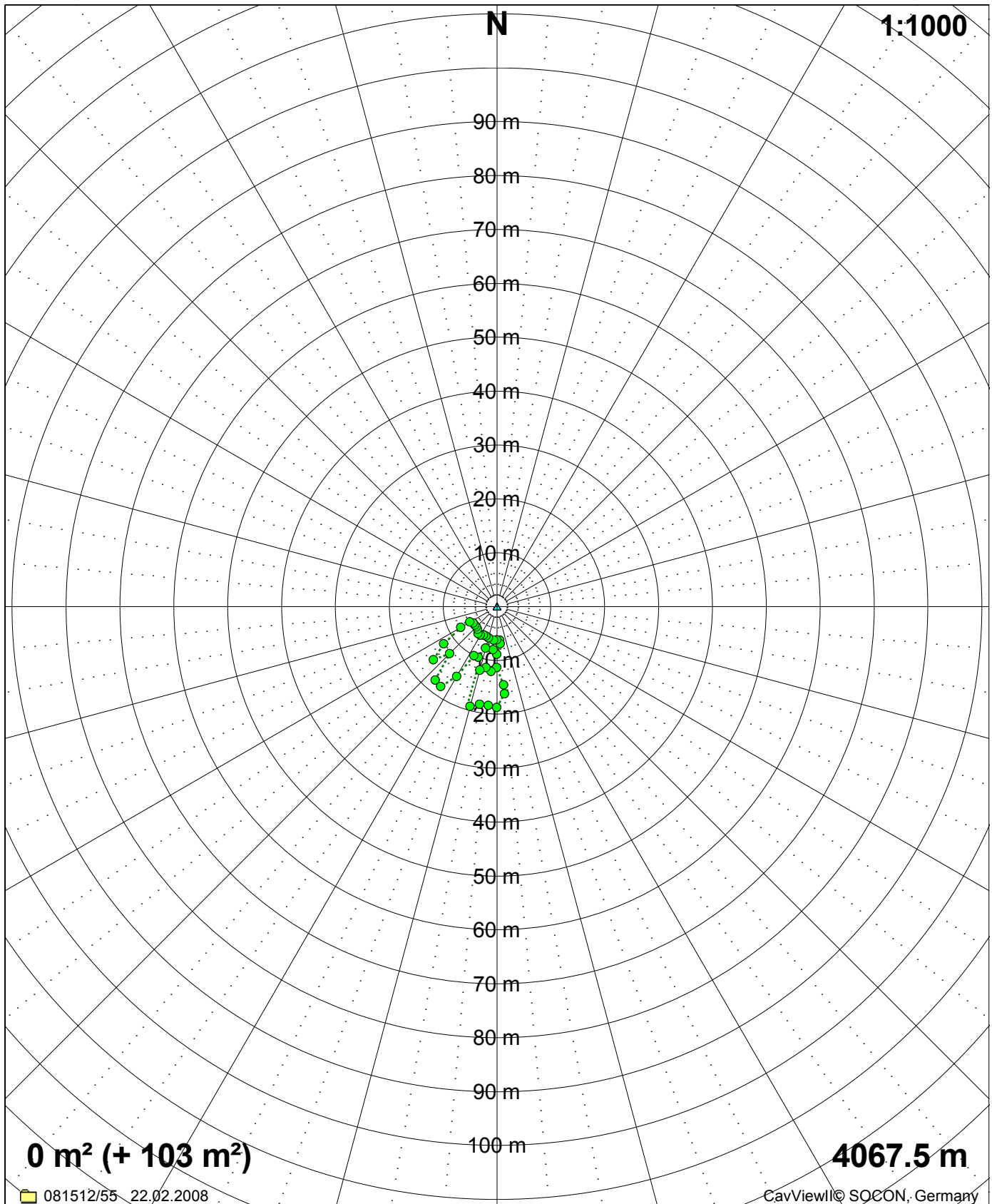
Hintersolung (22.02.2008)

d_{max}: 25.6 m 30° <--> 210° r_{min}: 0.0 m -> 0° r~: 11.0 m r_{max}: 25.6 m -> 210°



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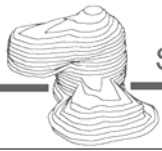
22.02.2008



—■— (22.02.2008)

—●— Hintersolung (22.02.2008)

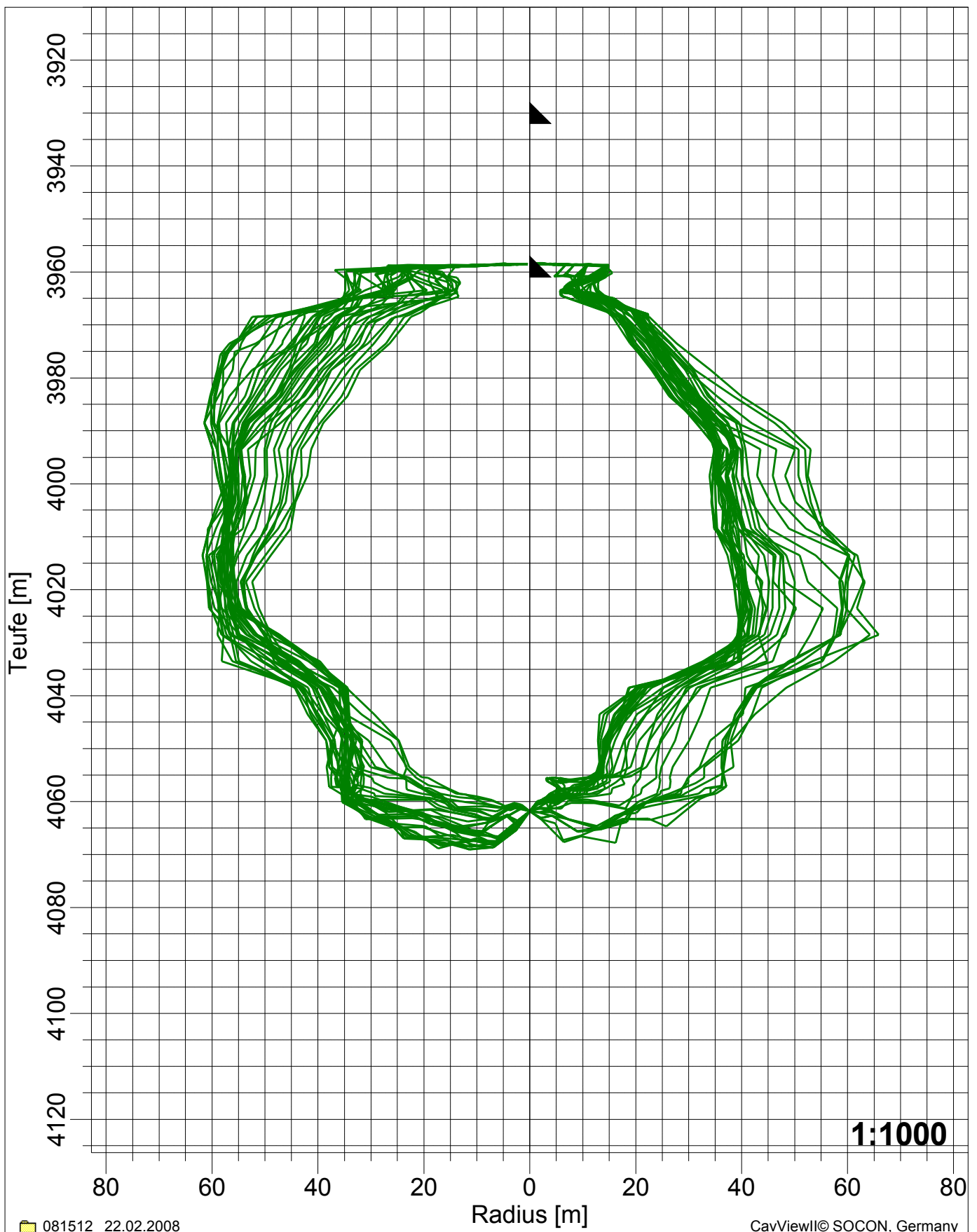
d_{max}: 19.2 m 15° <--> 195° r_{min}: 0.0 m -> 0° r~: 5.7 m r_{max}: 19.2 m -> 195°



Harlingen BAS 3

MAXPLOT

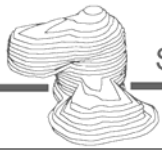
22.02.2008



▲ Carnallit" : 3906.0 m

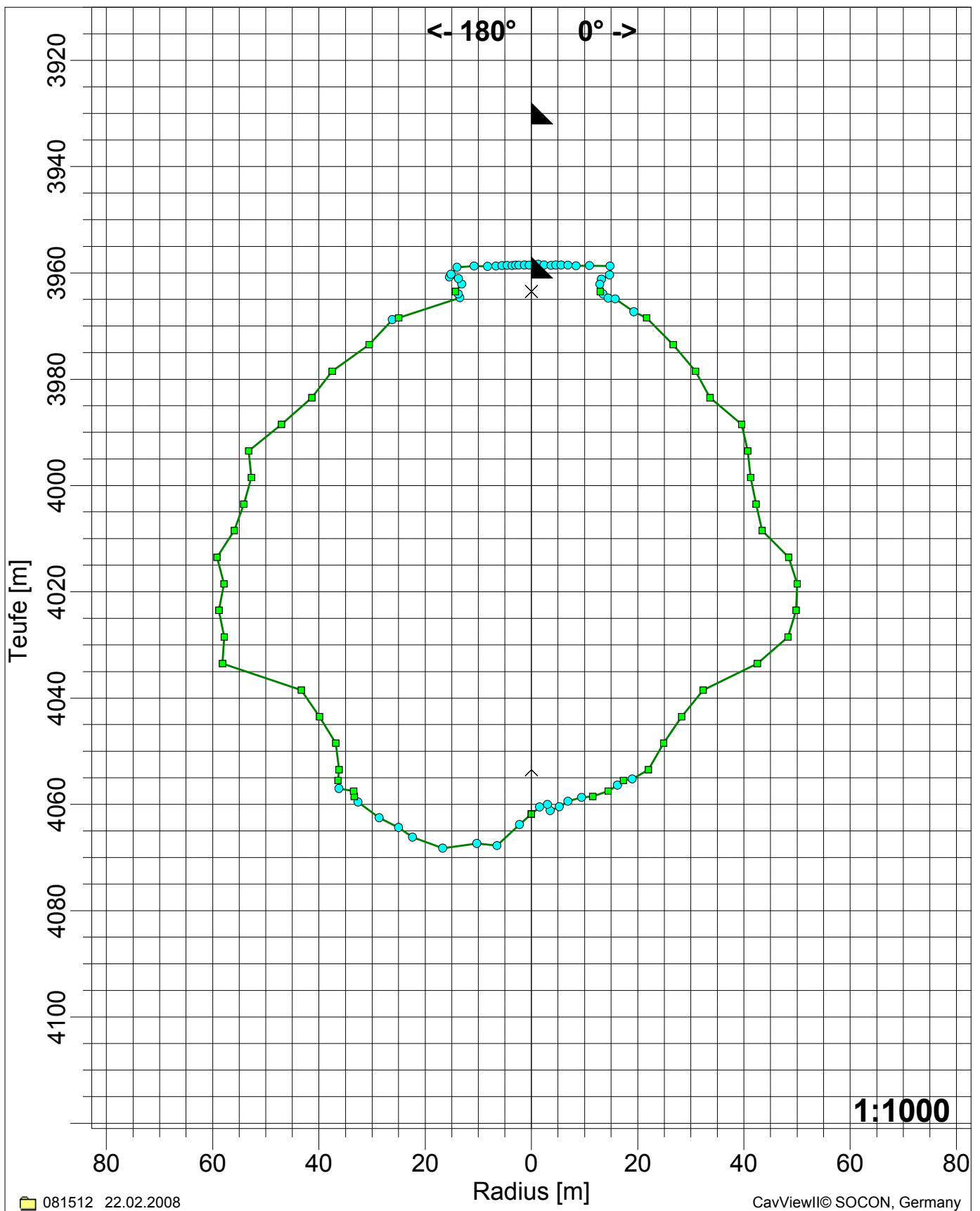
▲ 11 3/4" : 3961.0 m

▲ 7" : 3932.0 m



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22.02.2008



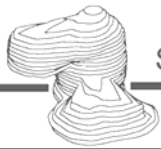
— (22.02.2008)

▲ Carnallit : 3906.0 m

▲ 11 3/4" : 3961.0 m

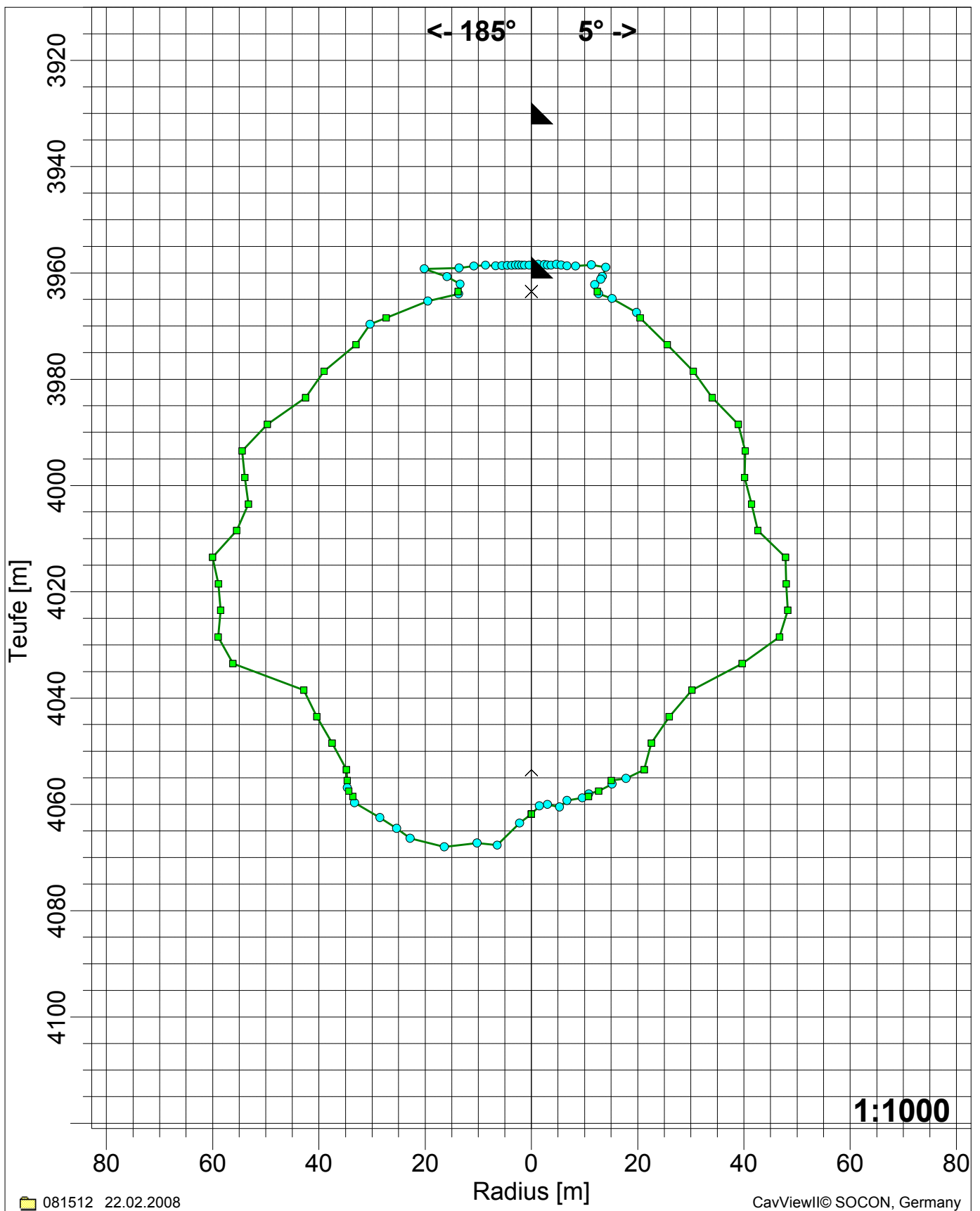
▲ 7" : 3932.0 m

∨ ^ Kipp-Position



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22.02.2008



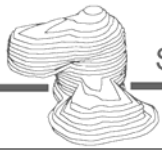
—■— (22.02.2008)

▲ Carnallit" : 3906.0 m

▲ 11 3/4" : 3961.0 m

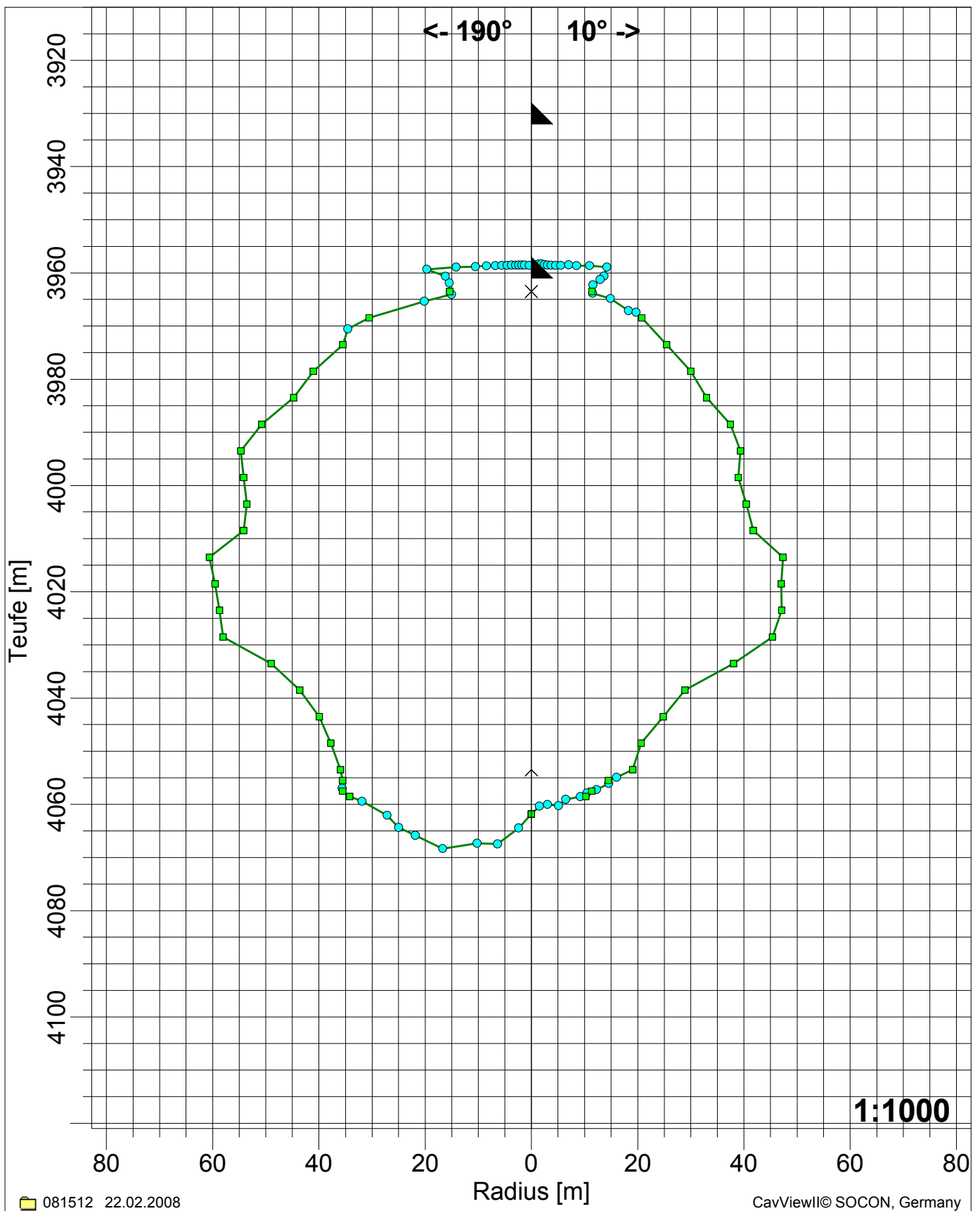
▲ 7" : 3932.0 m

∨ ^ Kipp-Position



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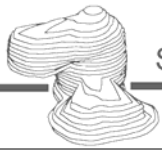
—■— (22.02.2008)

▲ Carnallit" : 3906.0 m

▲ 11 3/4" : 3961.0 m

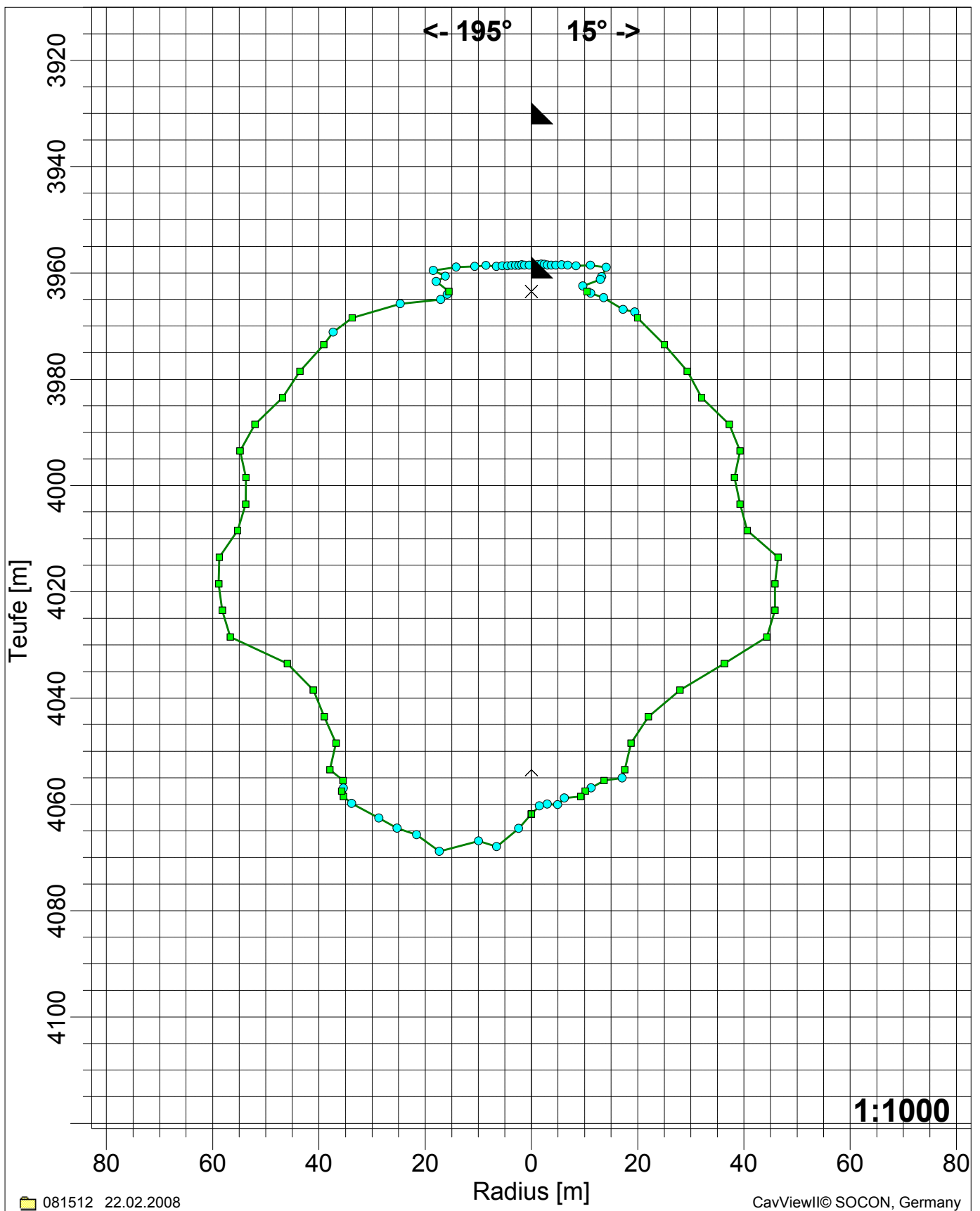
▲ 7" : 3932.0 m

∨ ^ Kipp-Position



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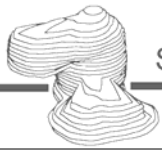
—■— (22.02.2008)

▲ Carnallit" : 3906.0 m

▲ 11 3/4" : 3961.0 m

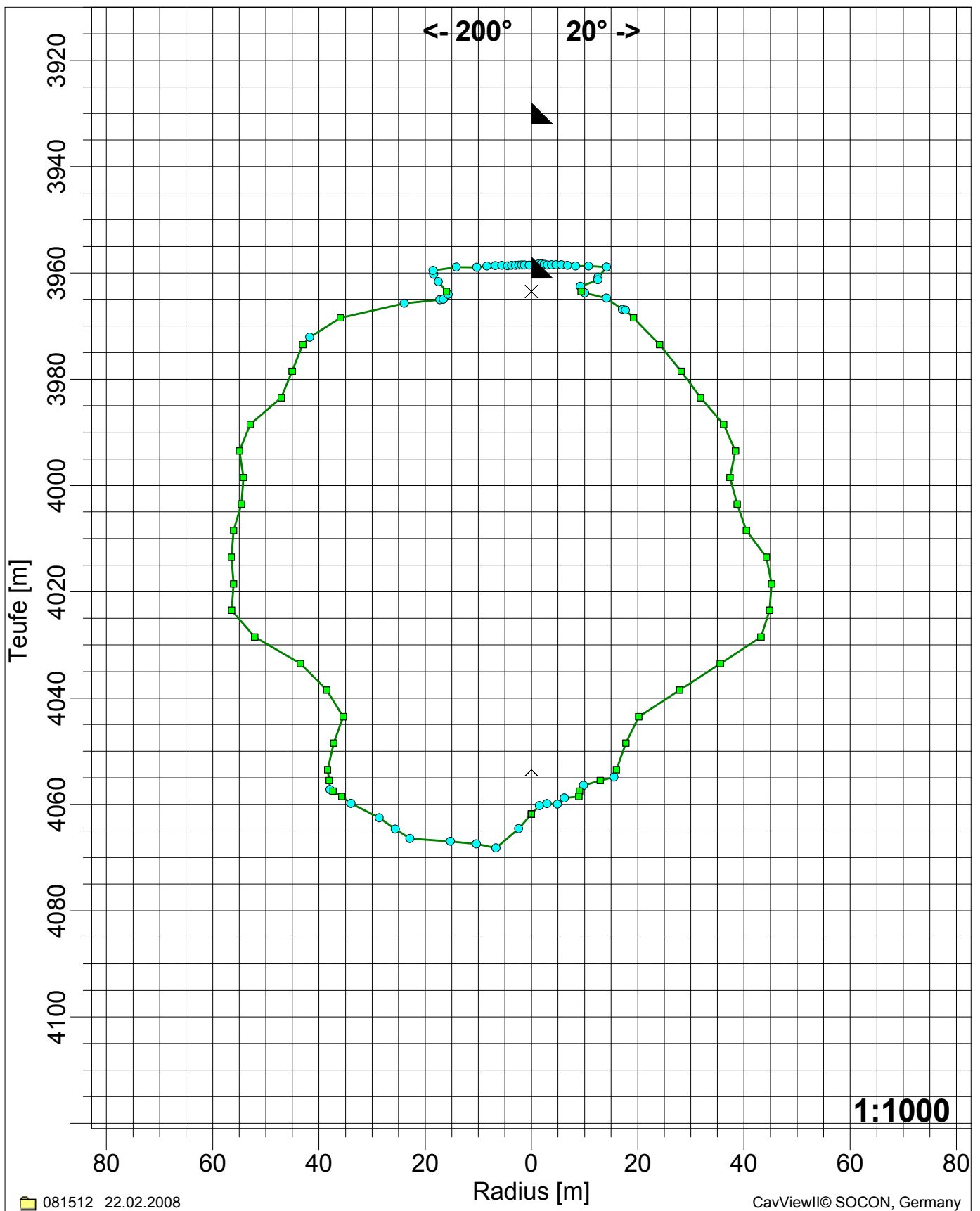
▲ 7" : 3932.0 m

∨ ^ Kipp-Position



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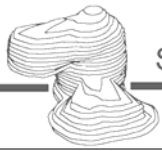
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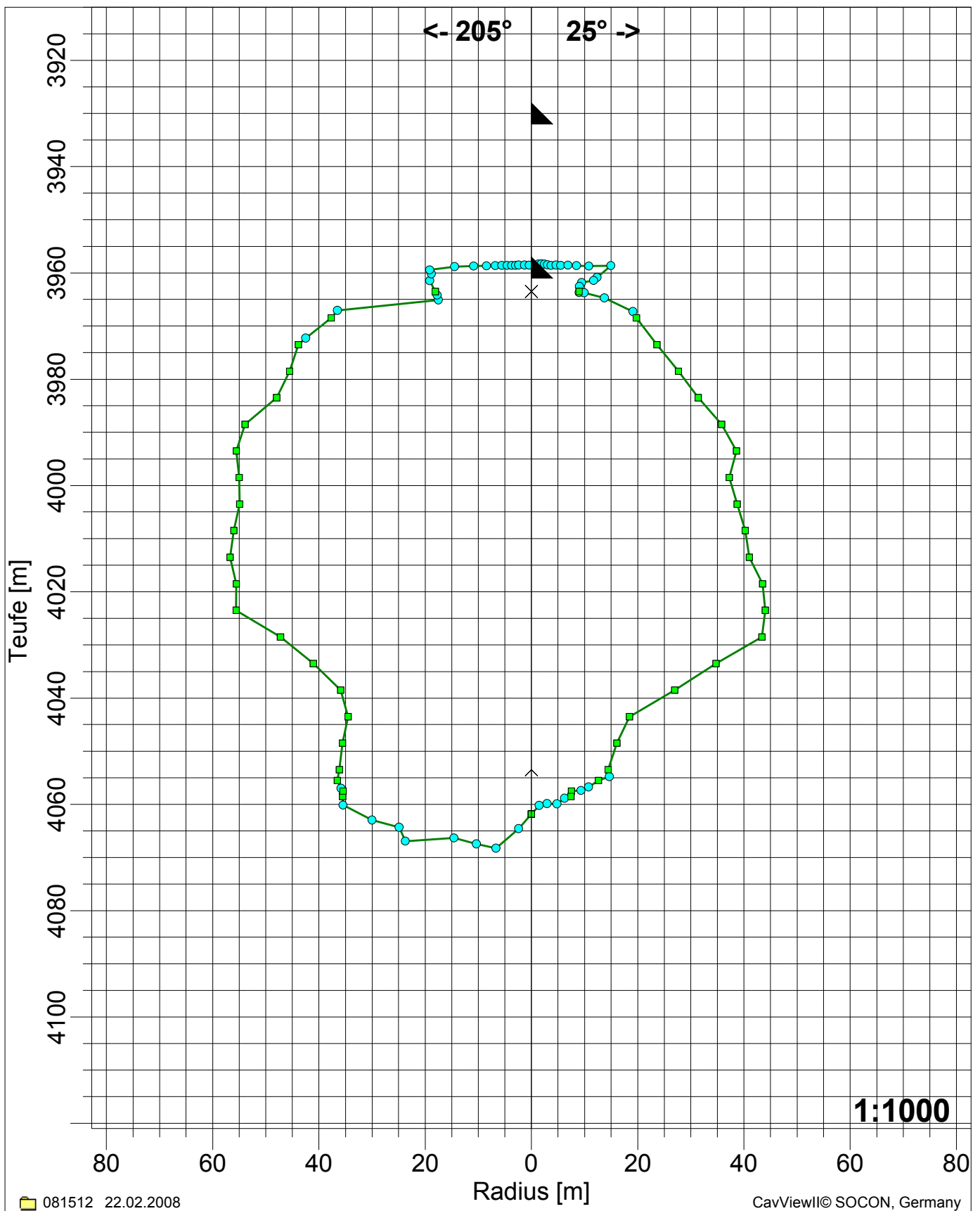
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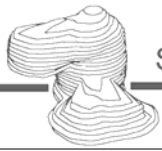
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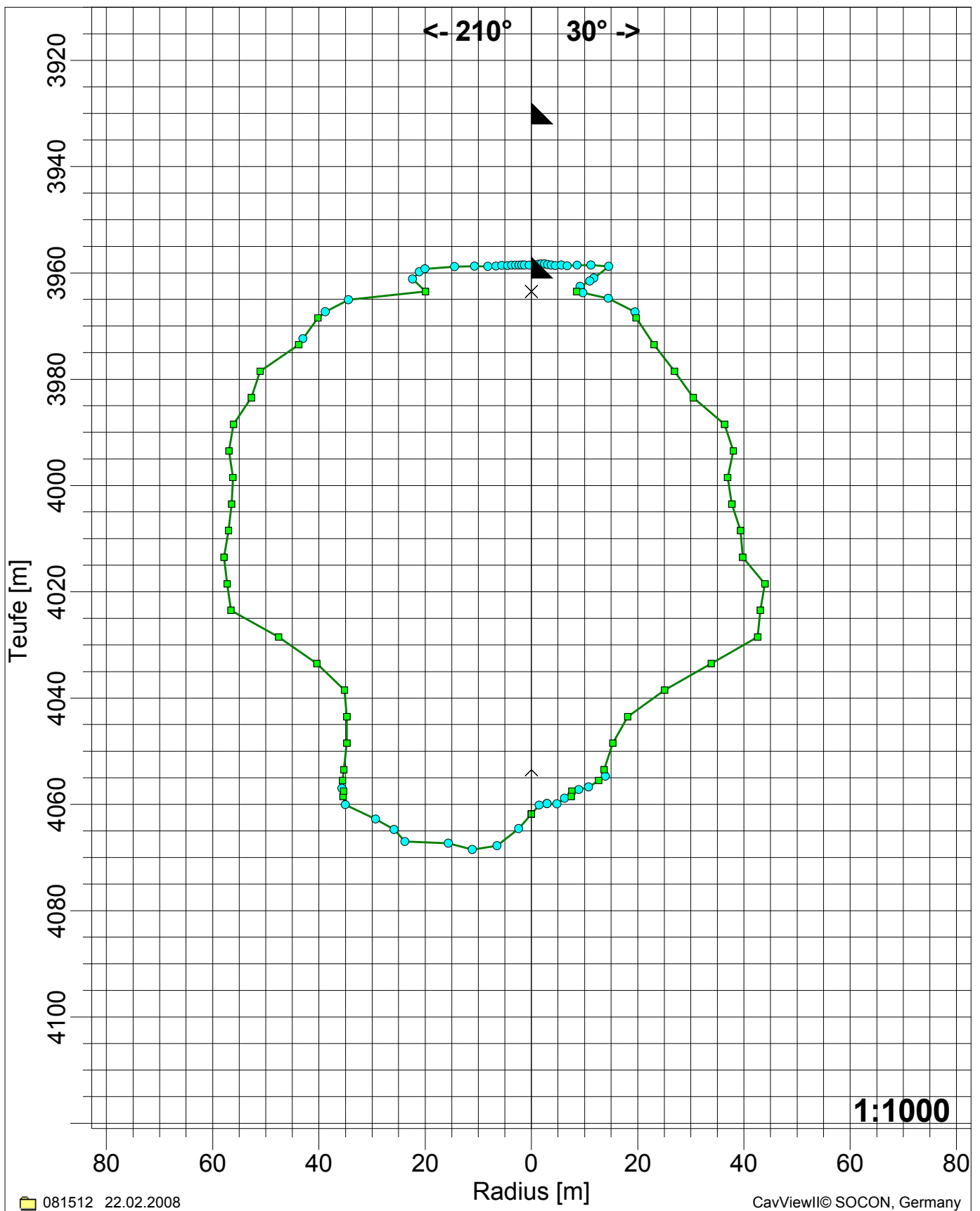
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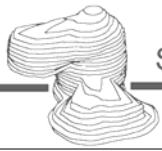
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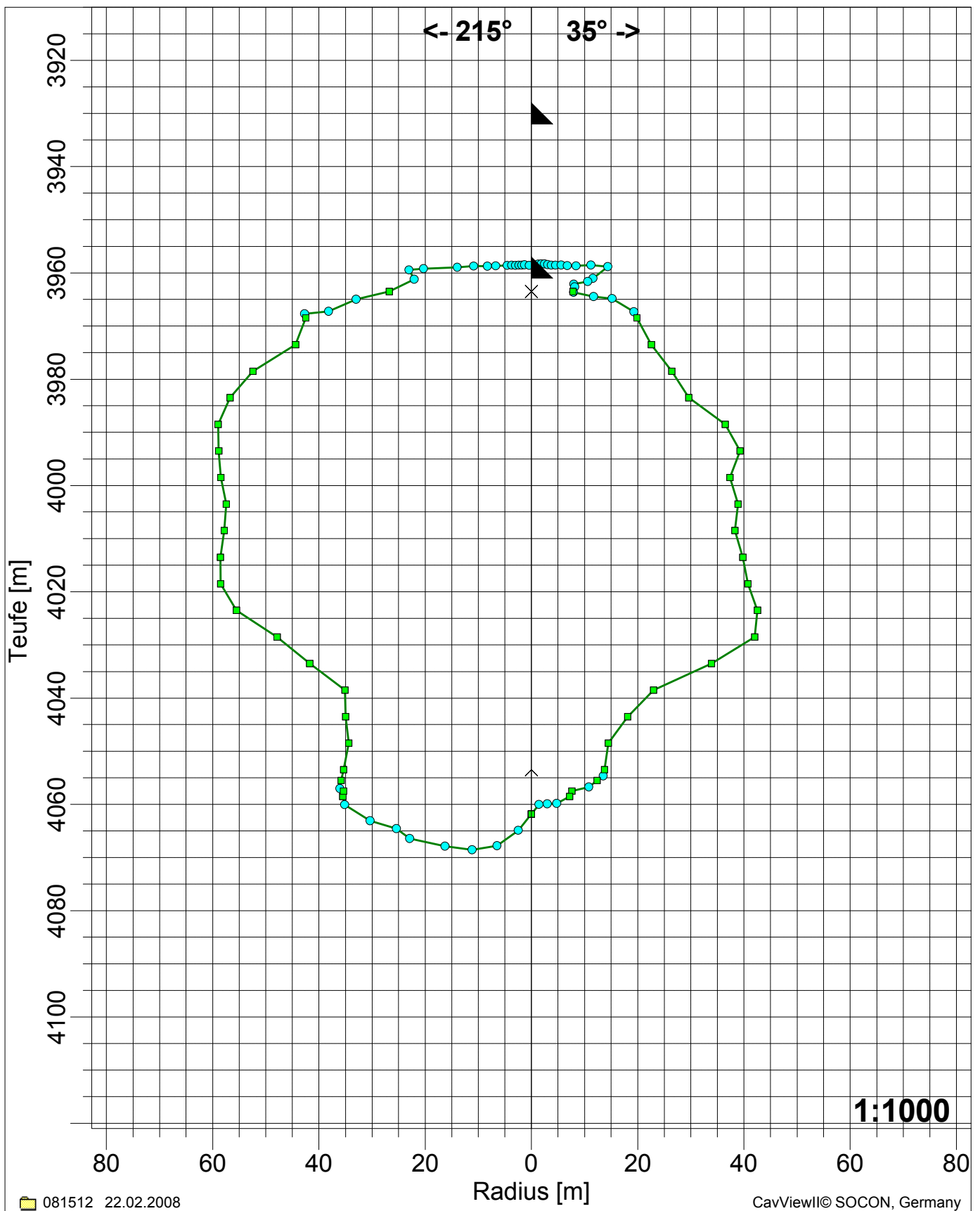
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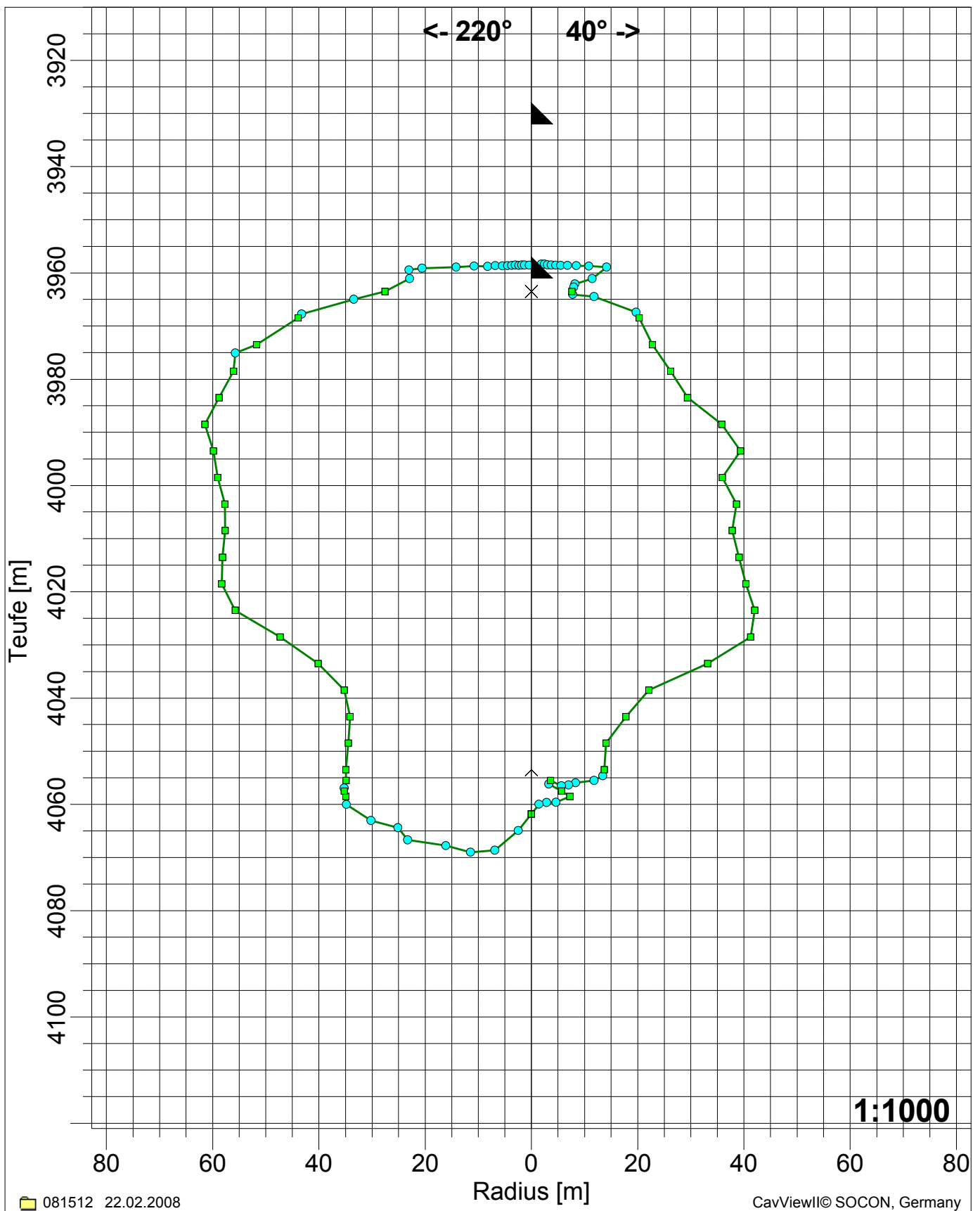
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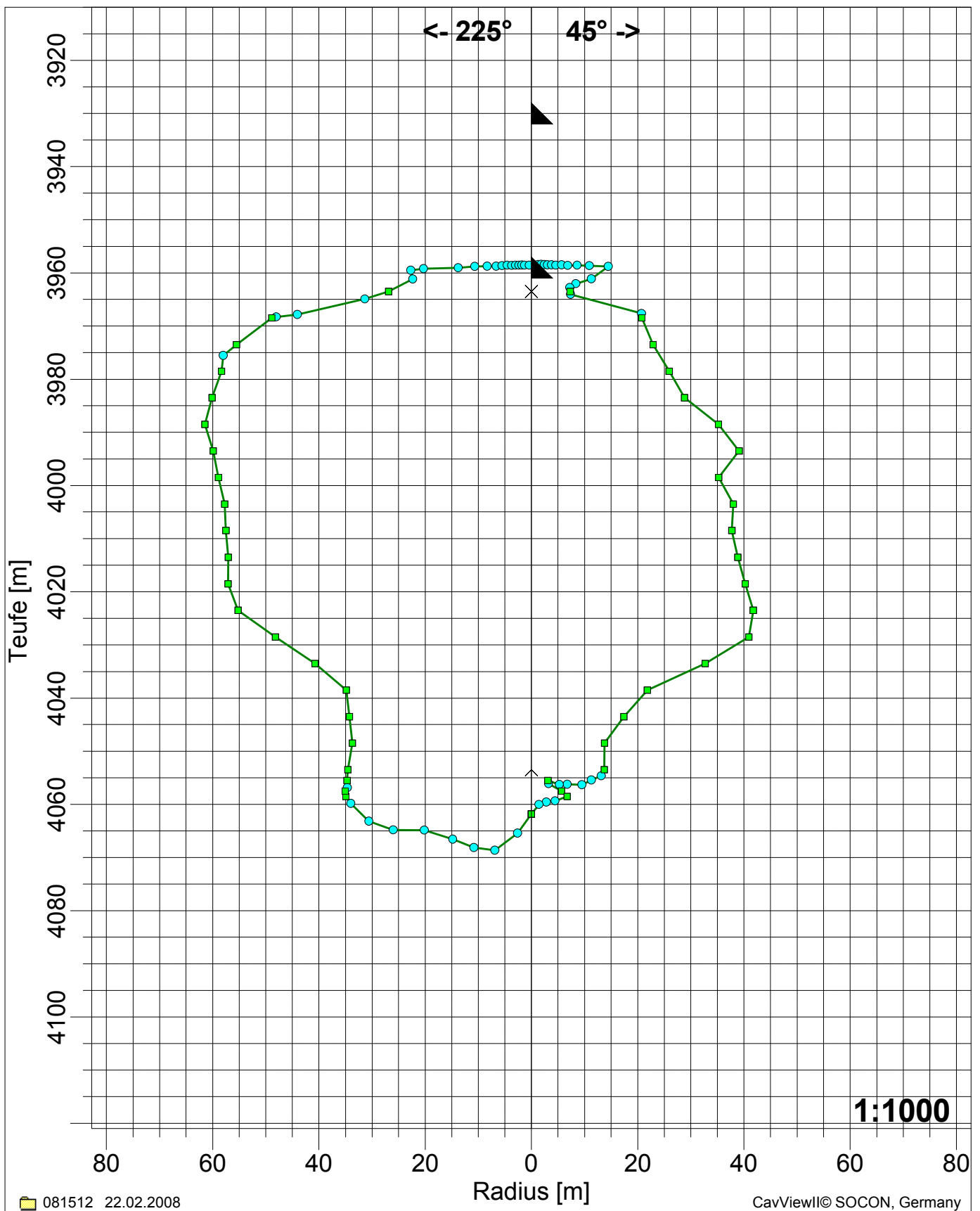


 (22.02.2008)	 Carnallit : 3906.0 m	 11 3/4" : 3961.0 m
 7" : 3932.0 m	 Kipp-Position	

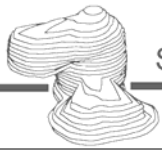


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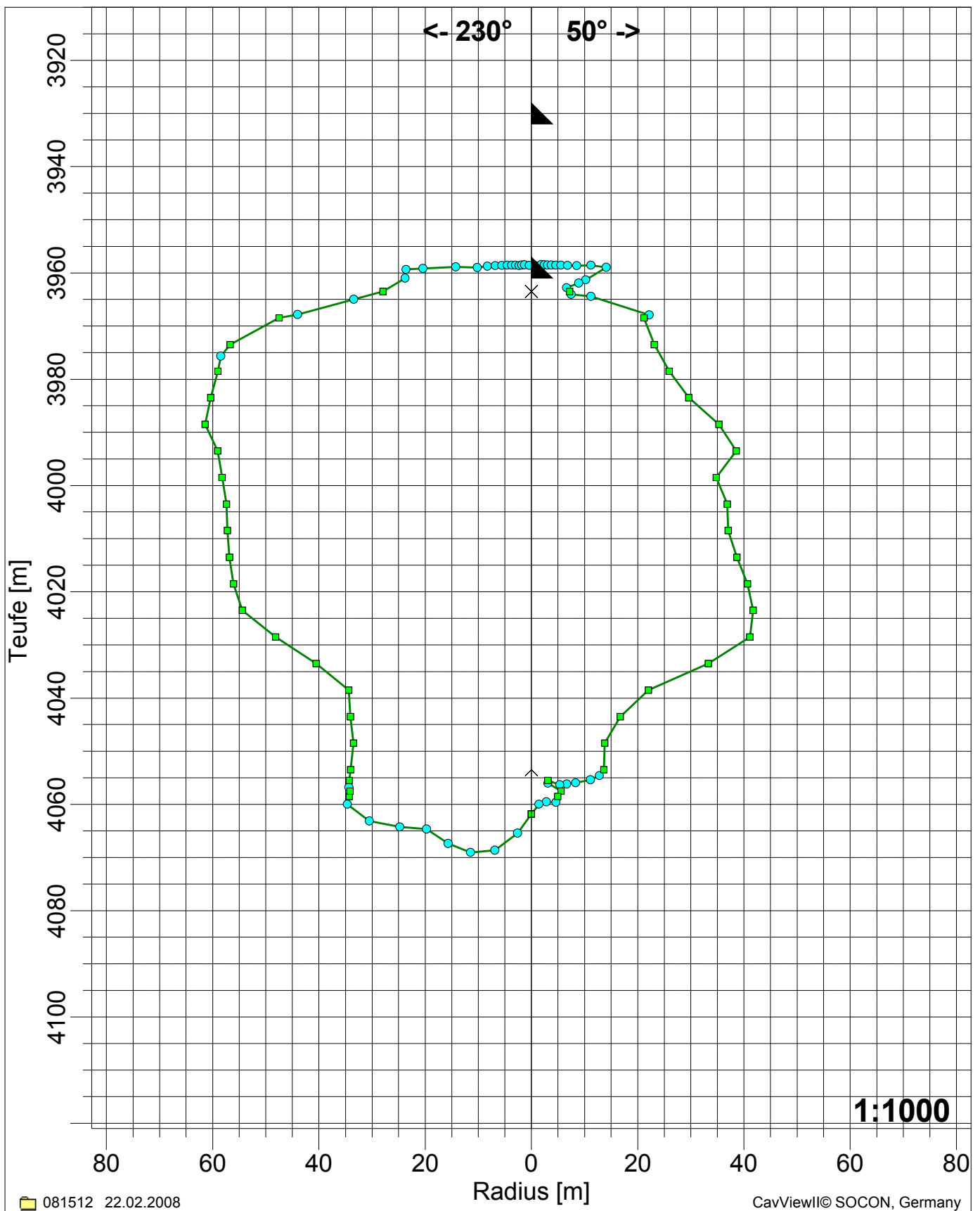


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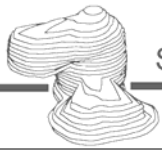
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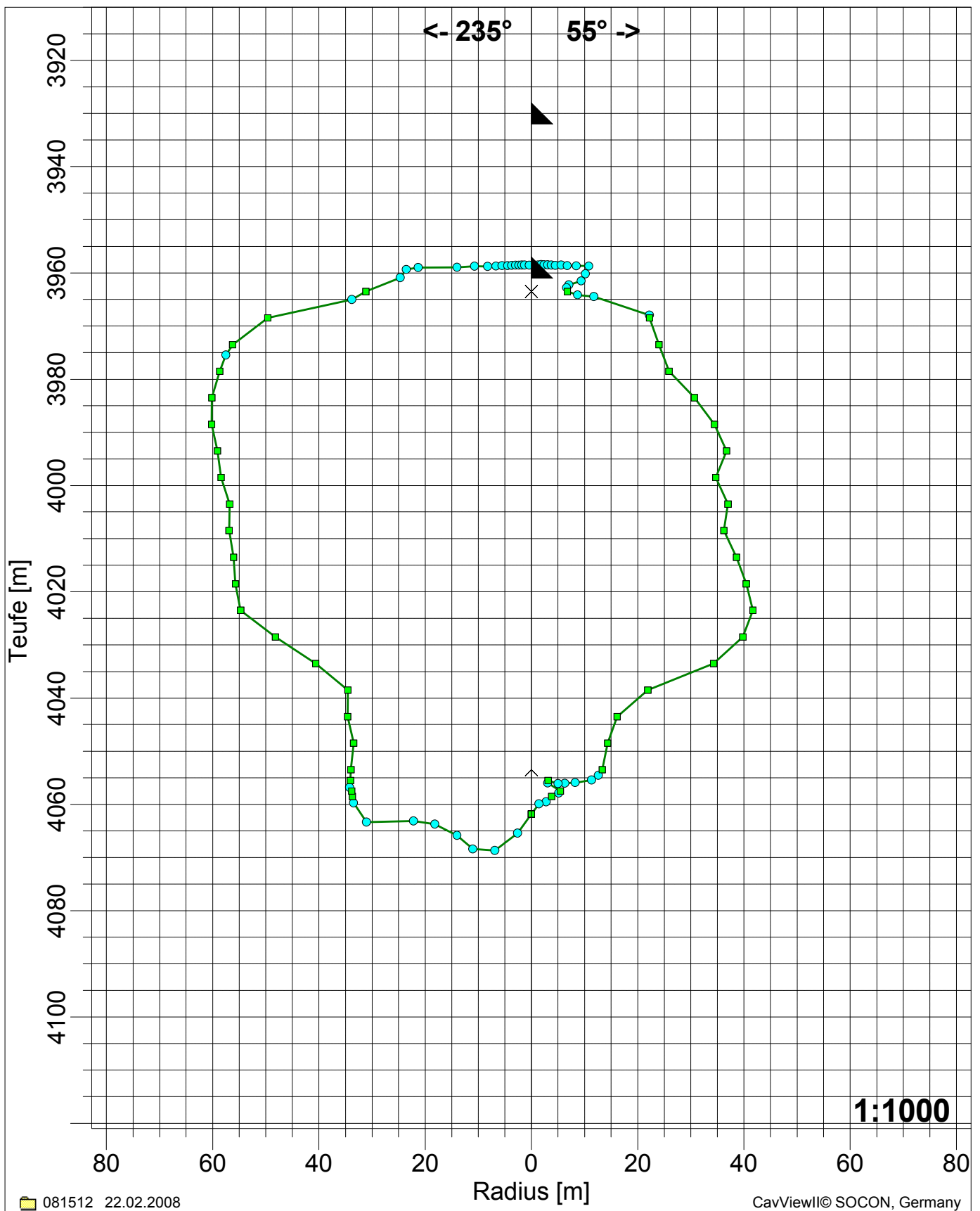
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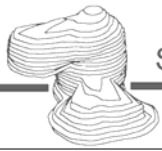
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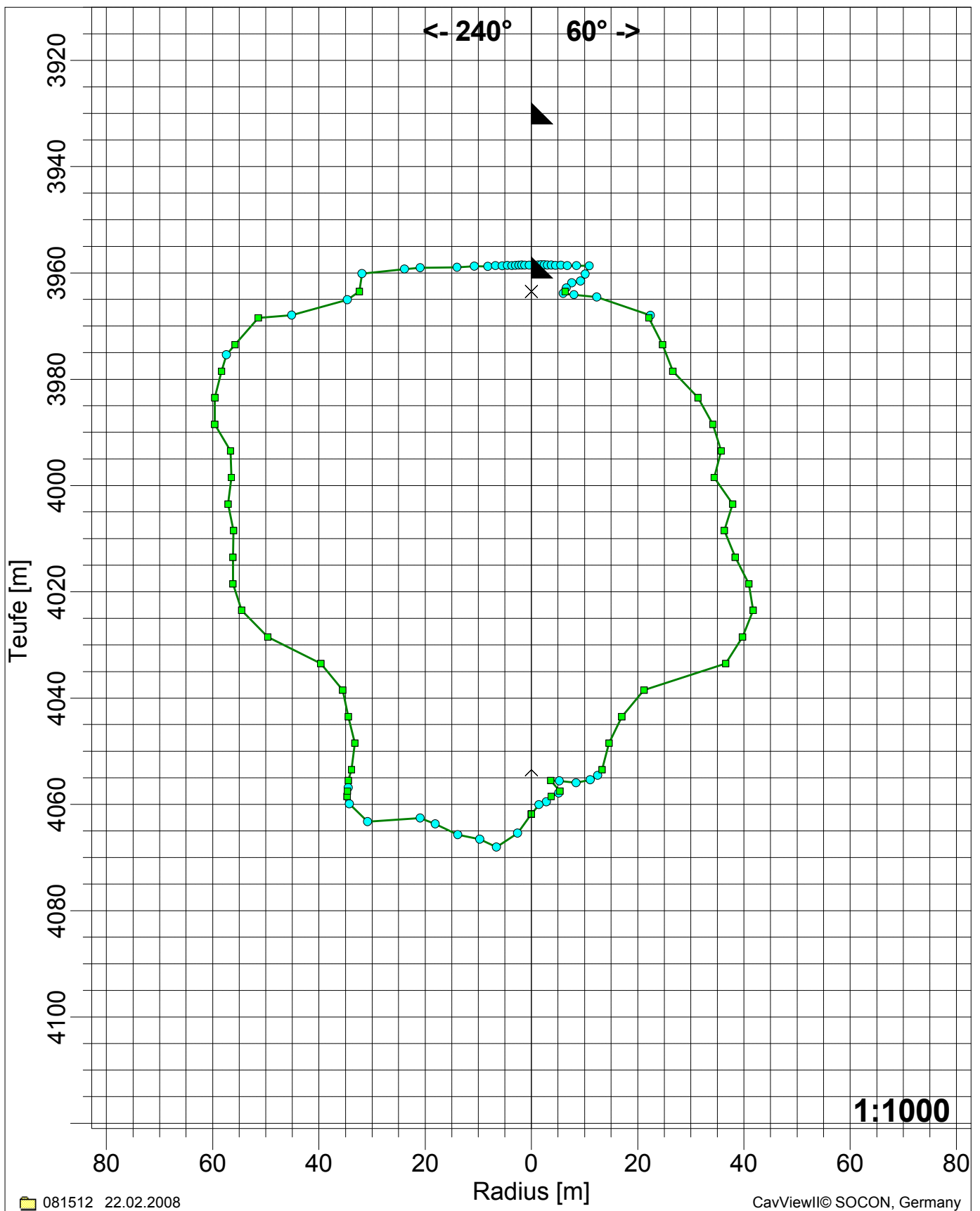
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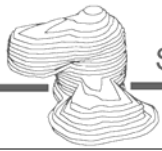
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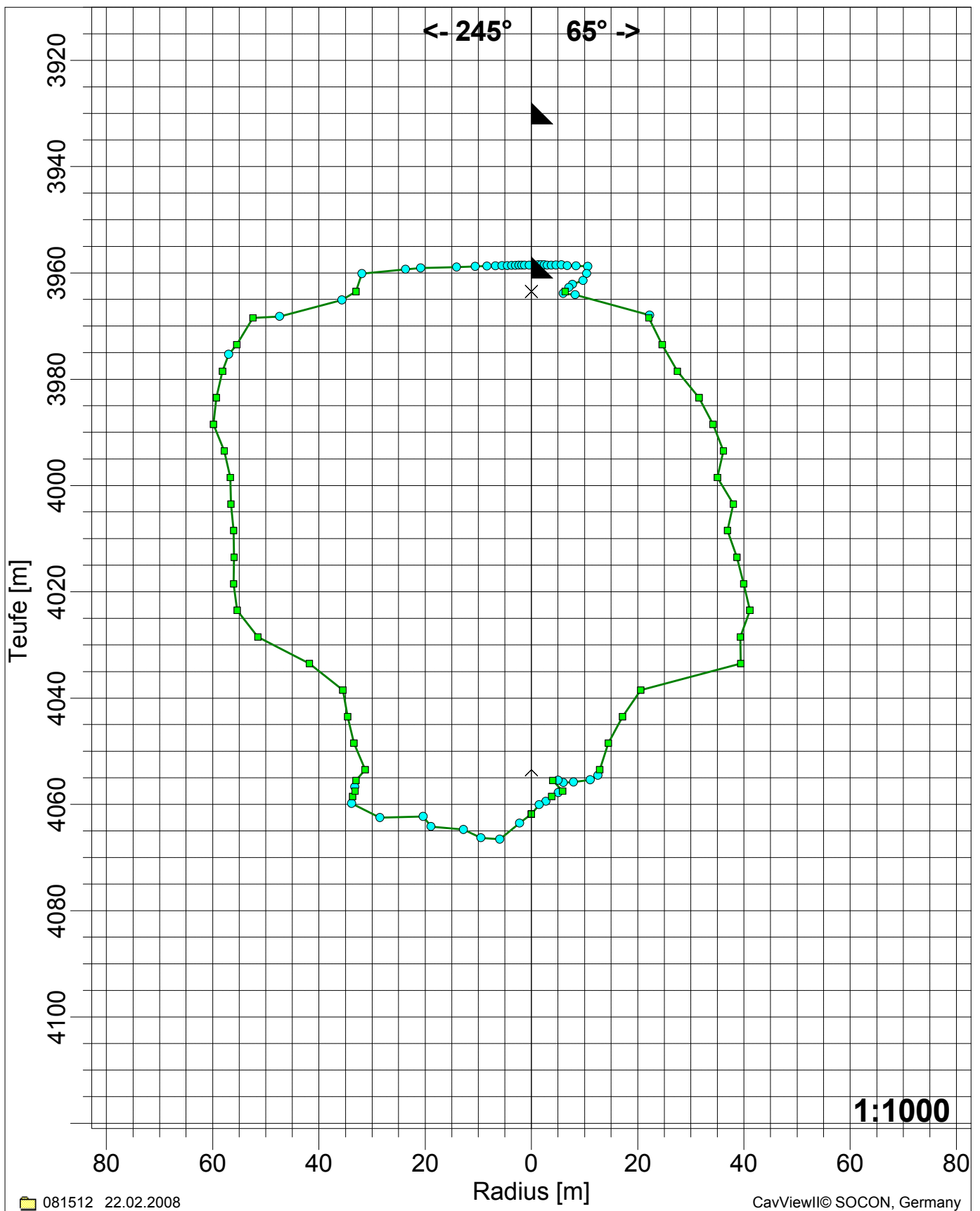
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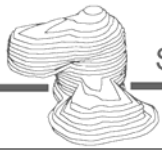
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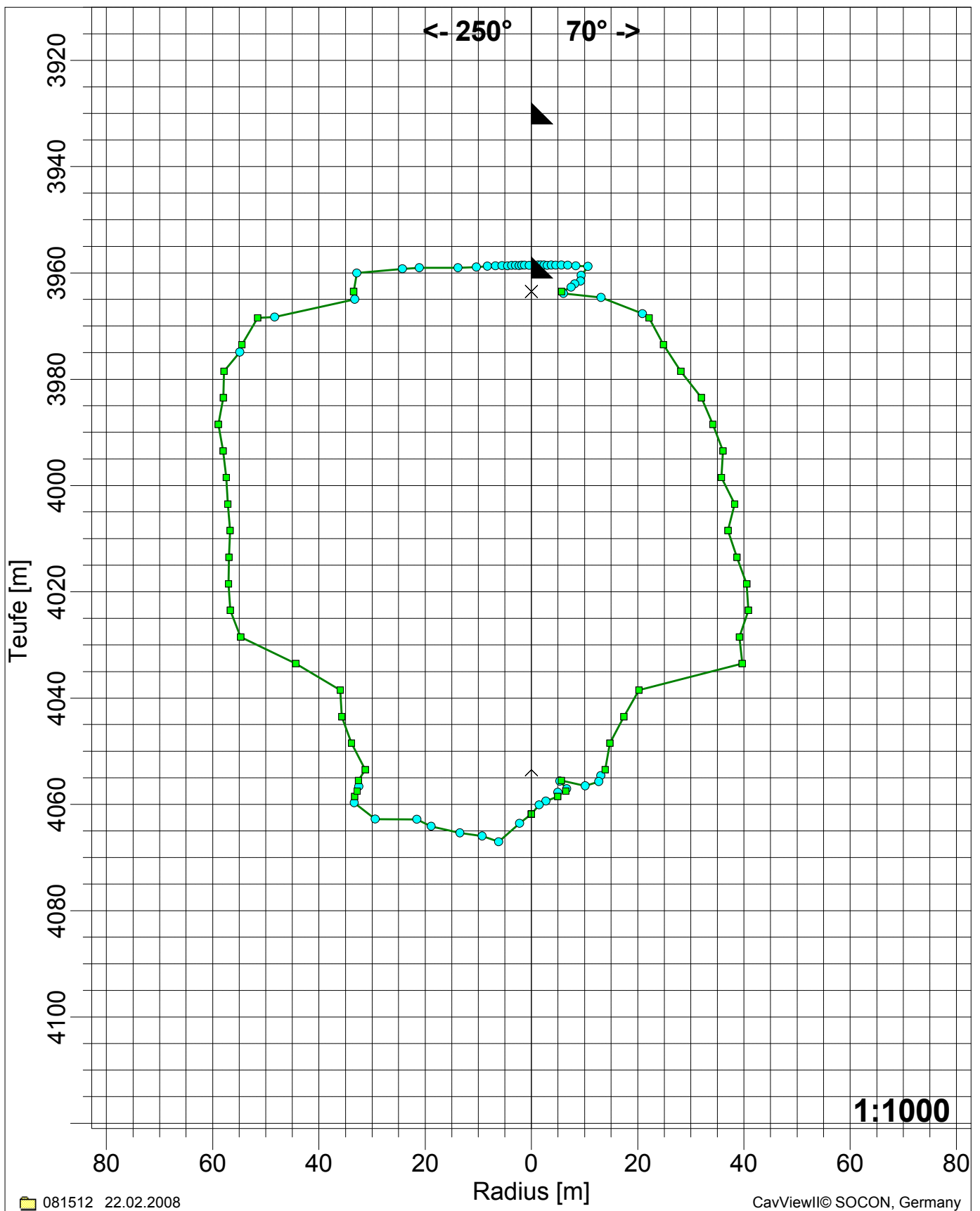
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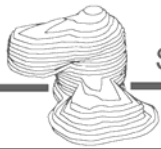
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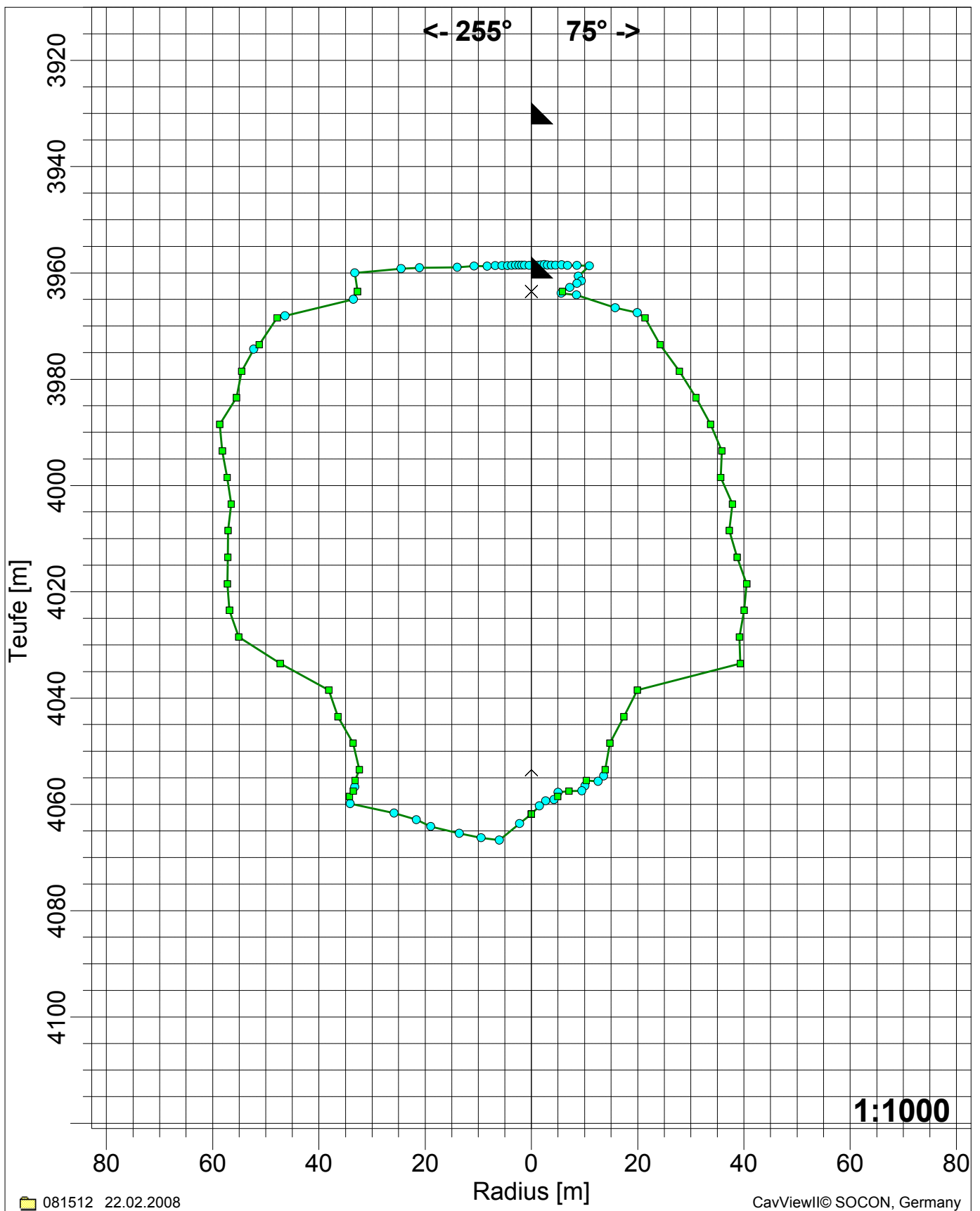
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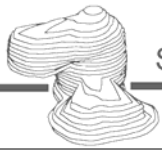
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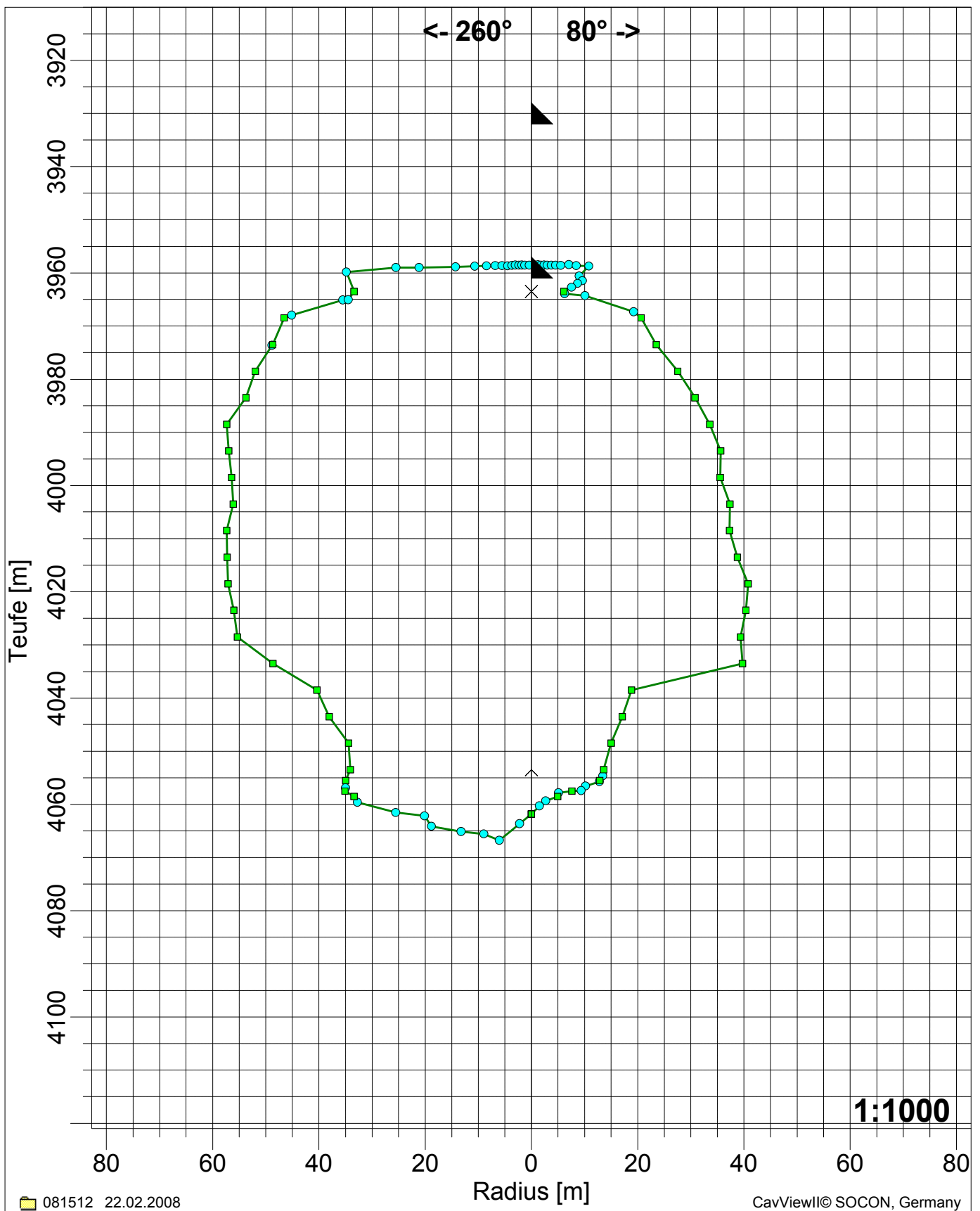
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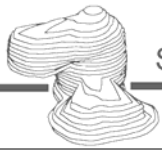
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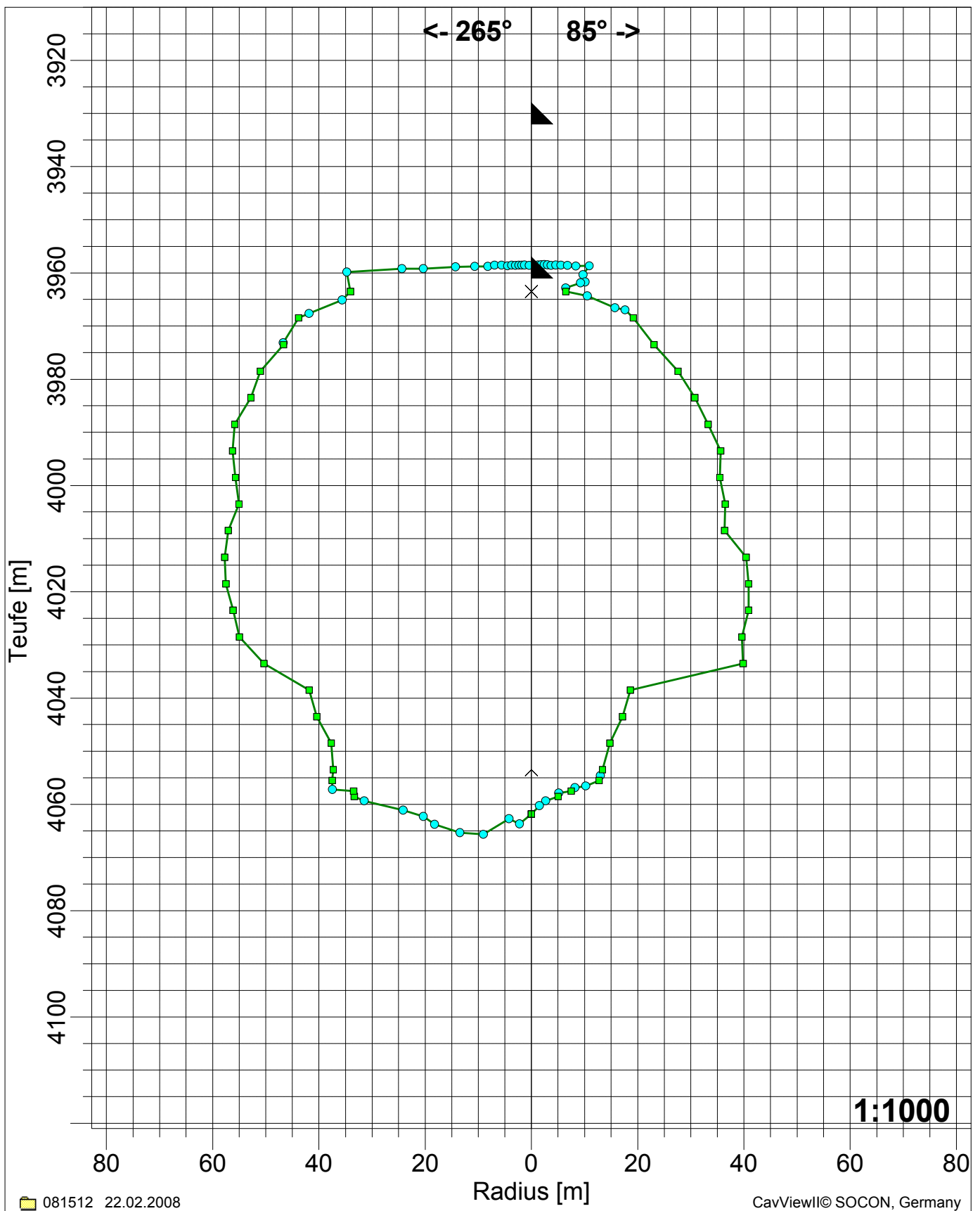
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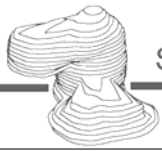
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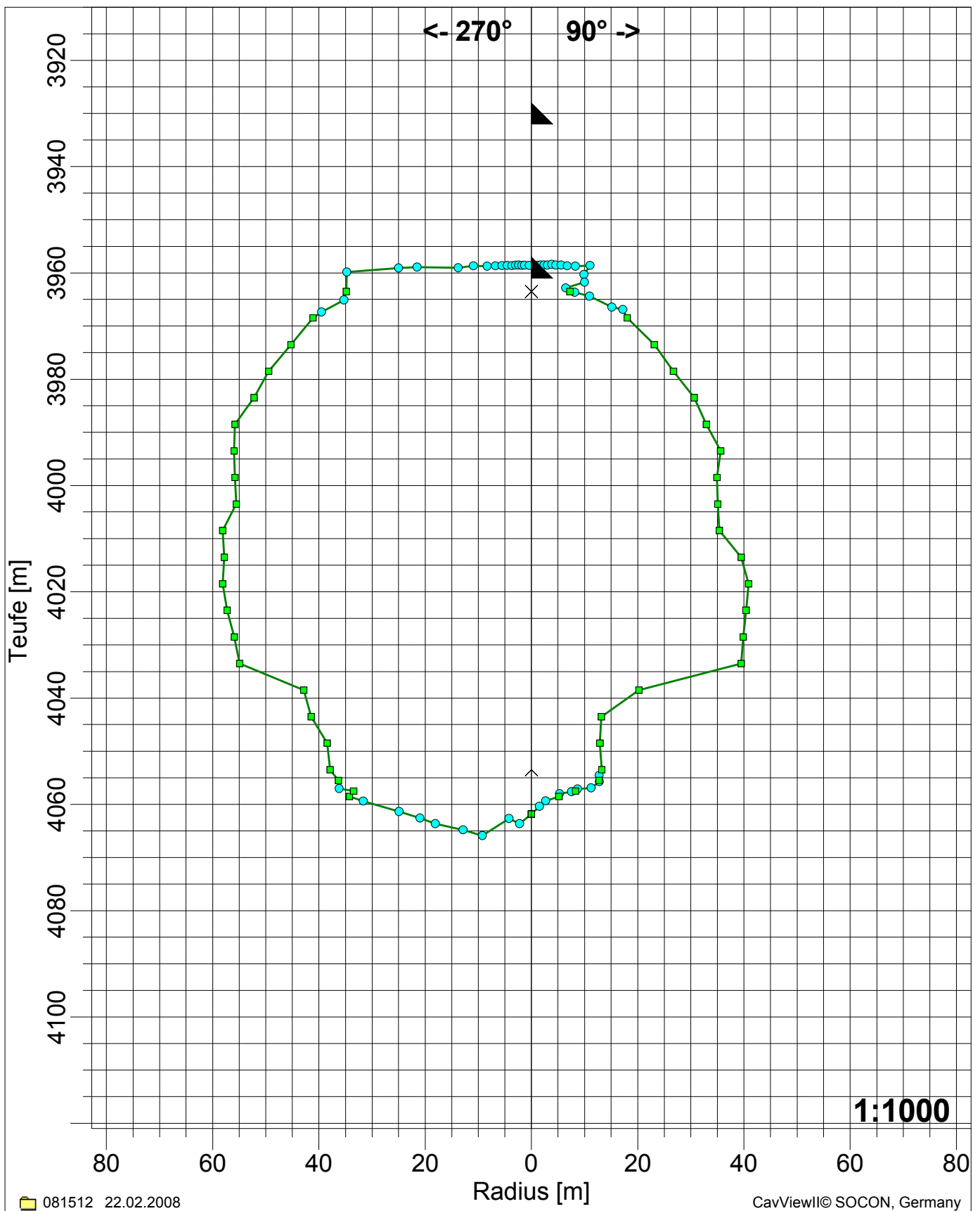
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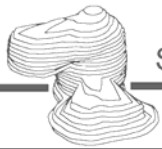
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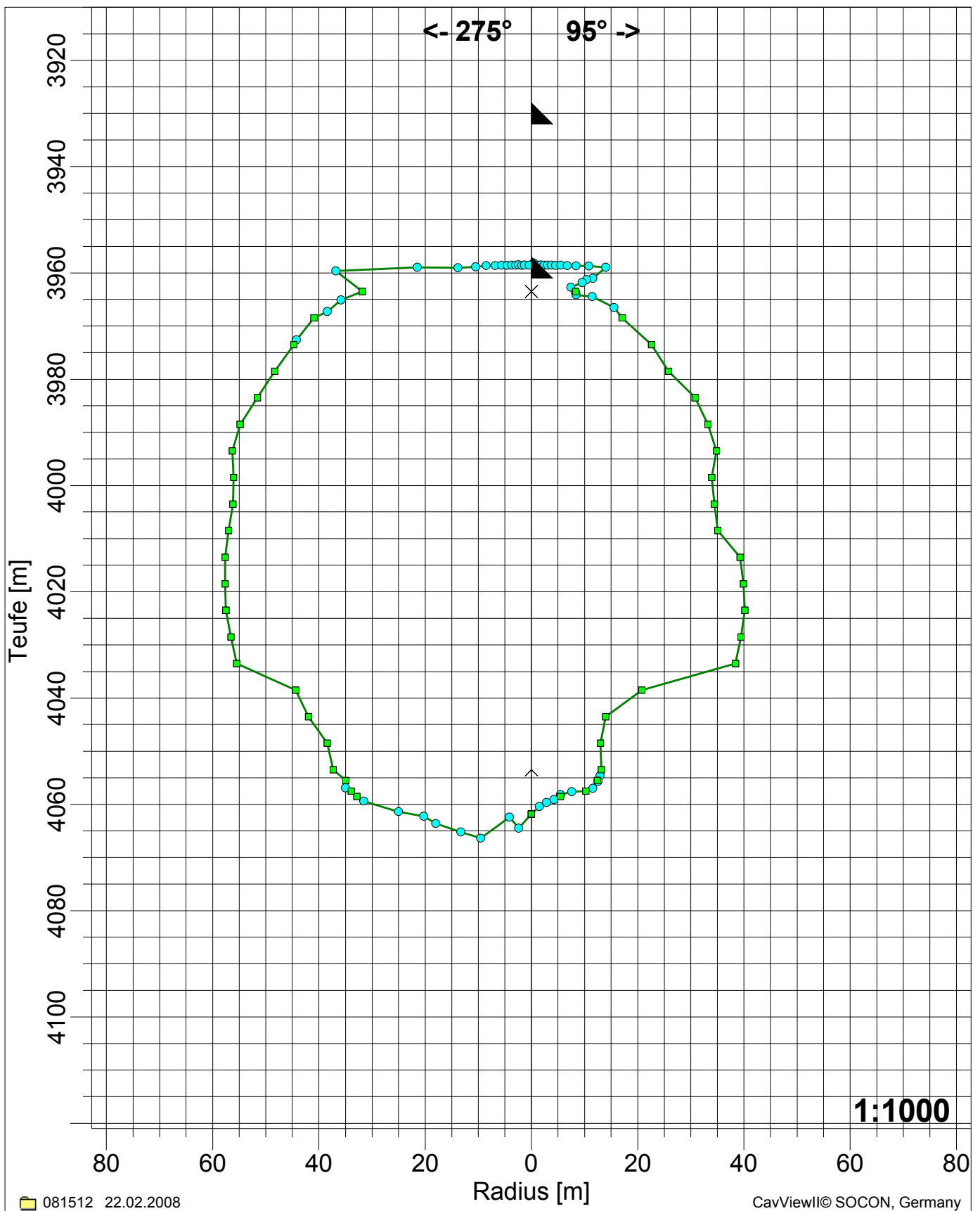
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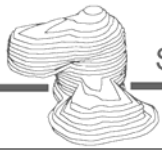
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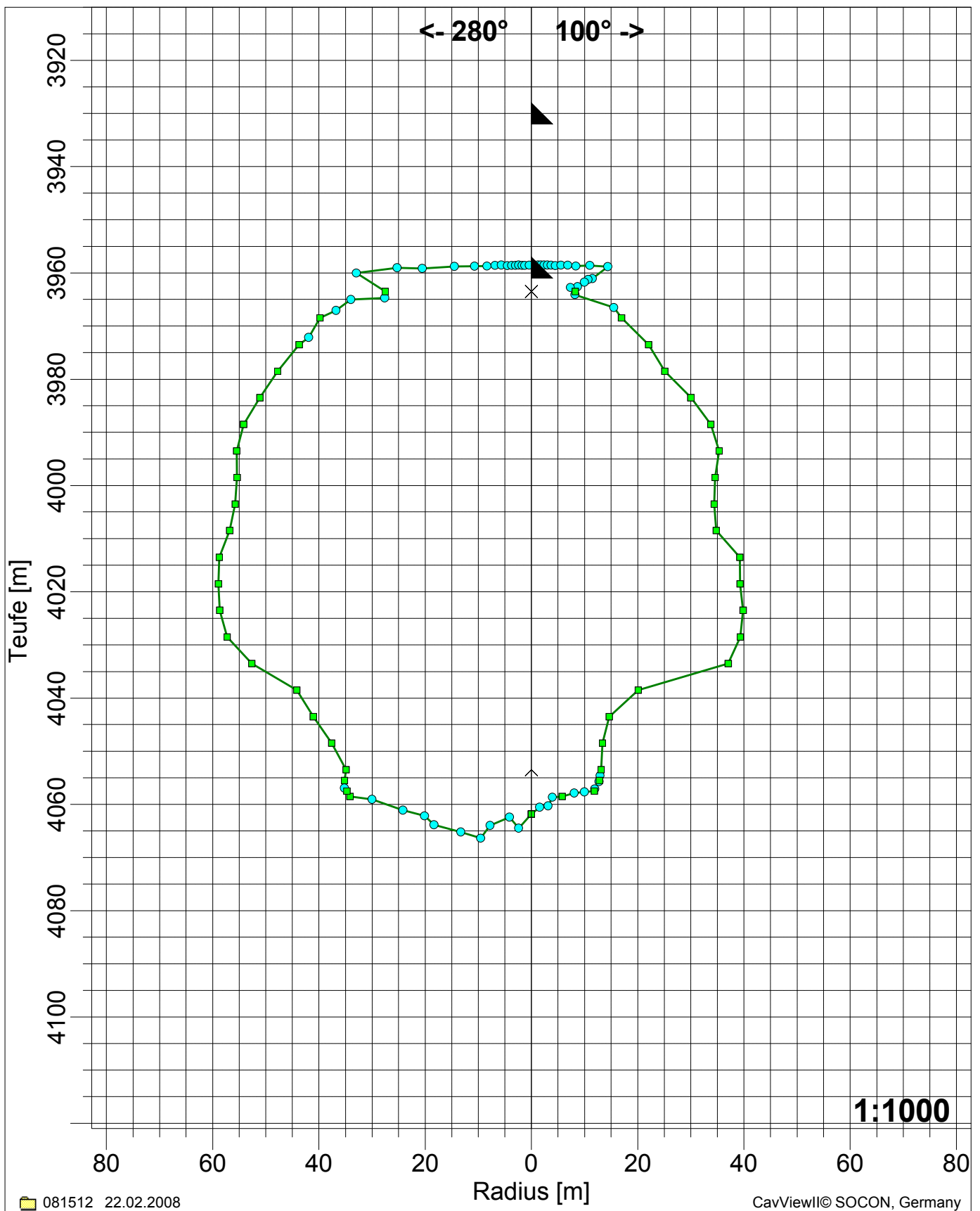
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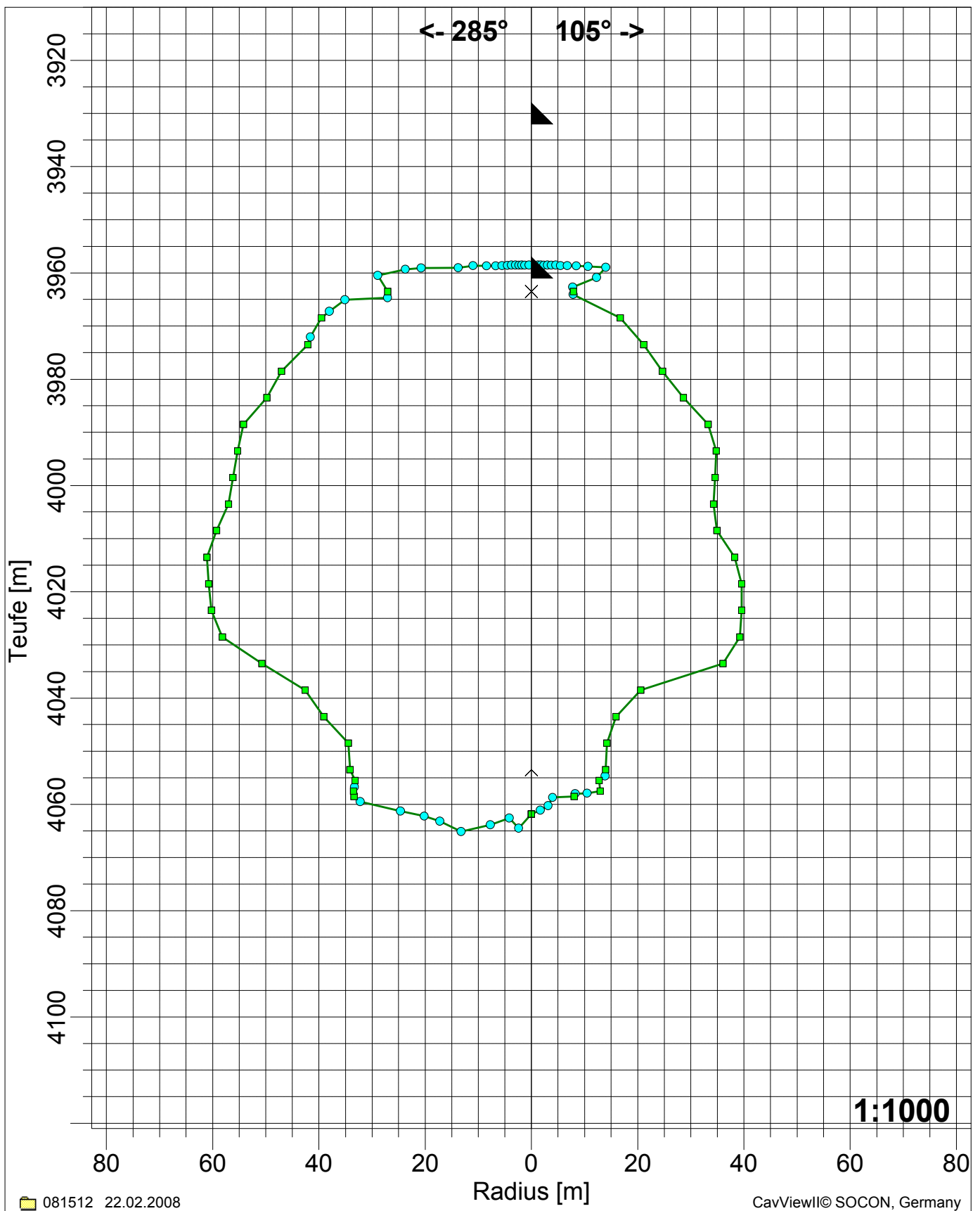
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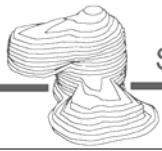


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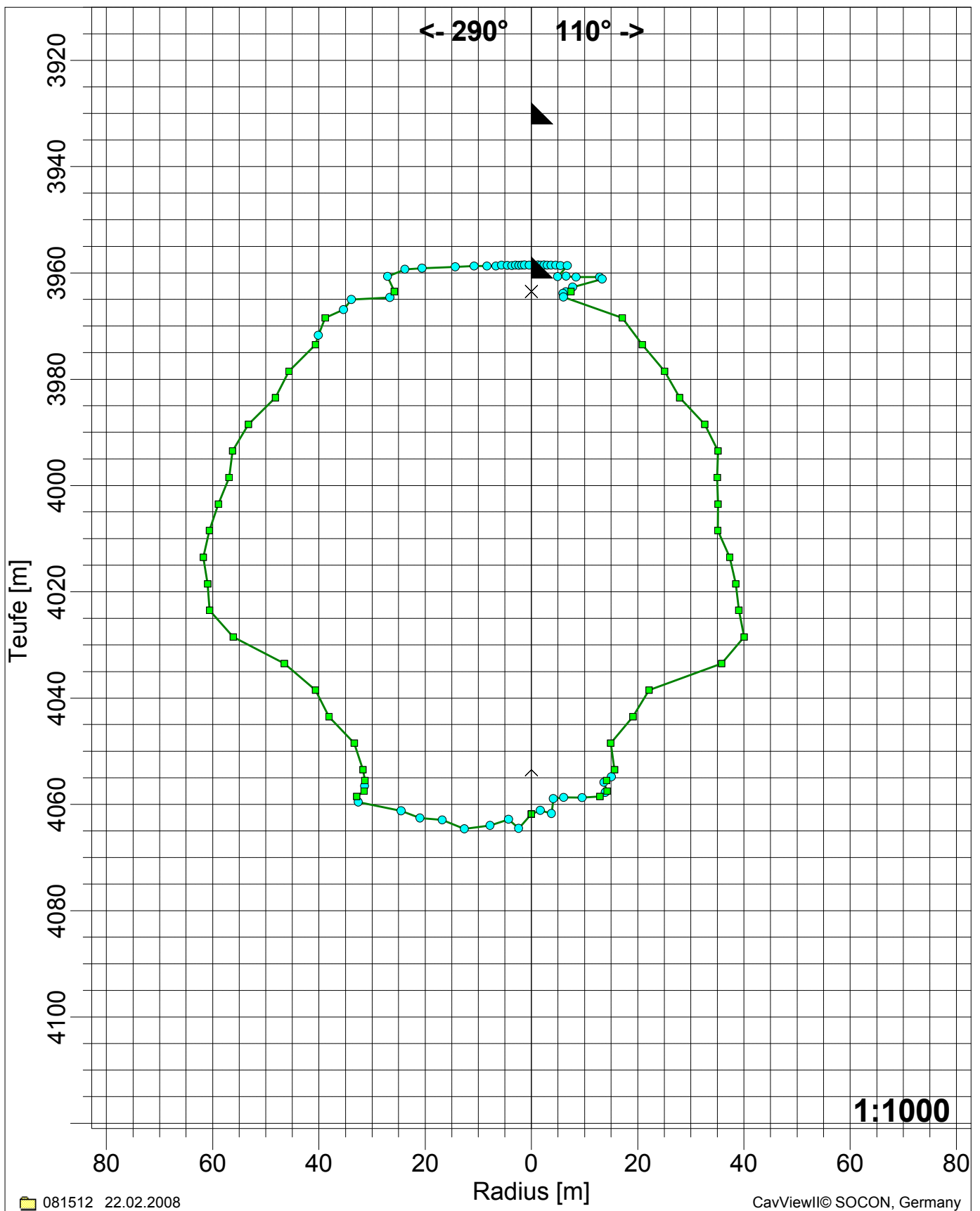


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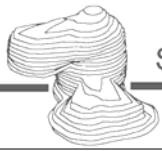
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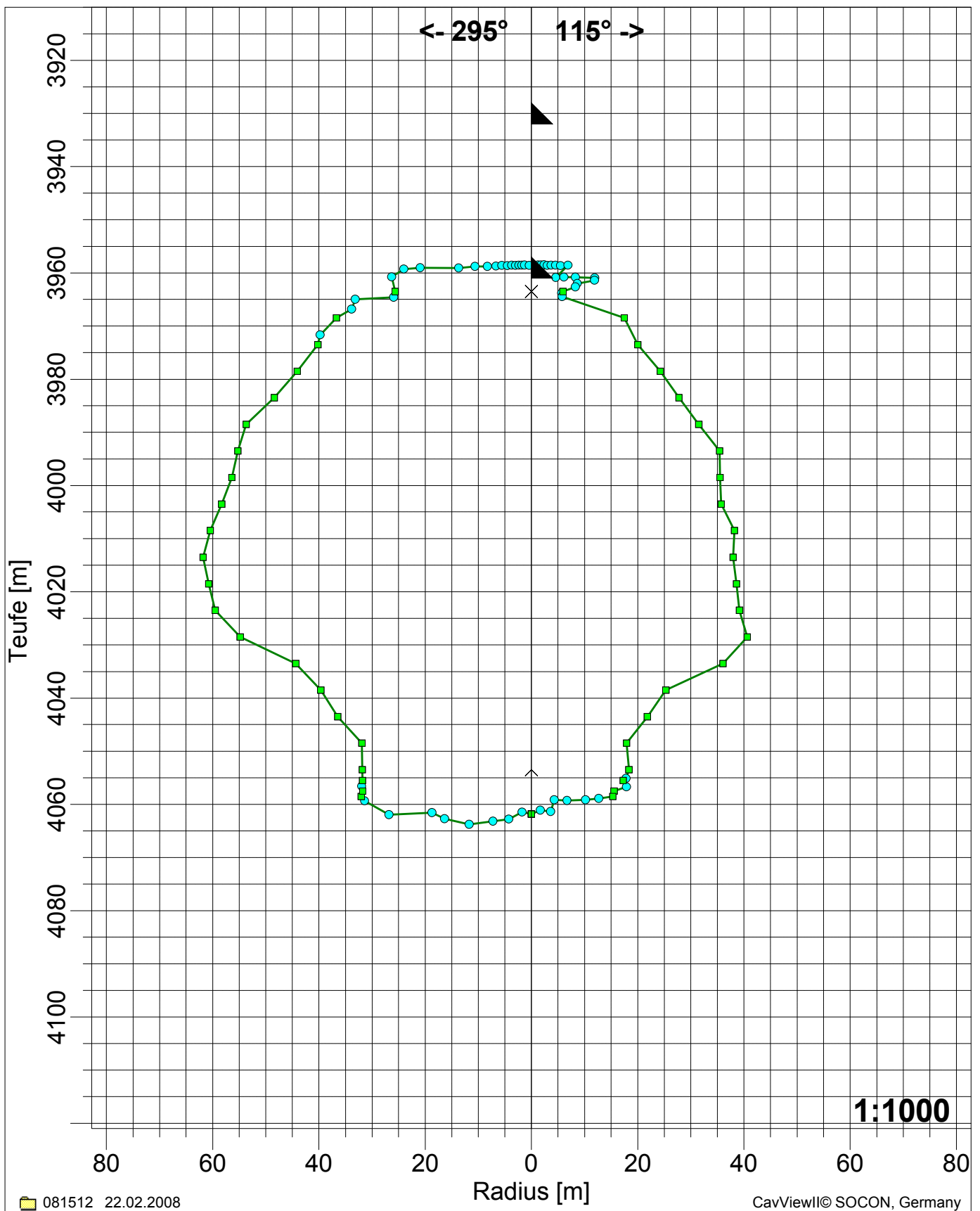
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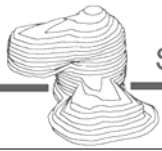
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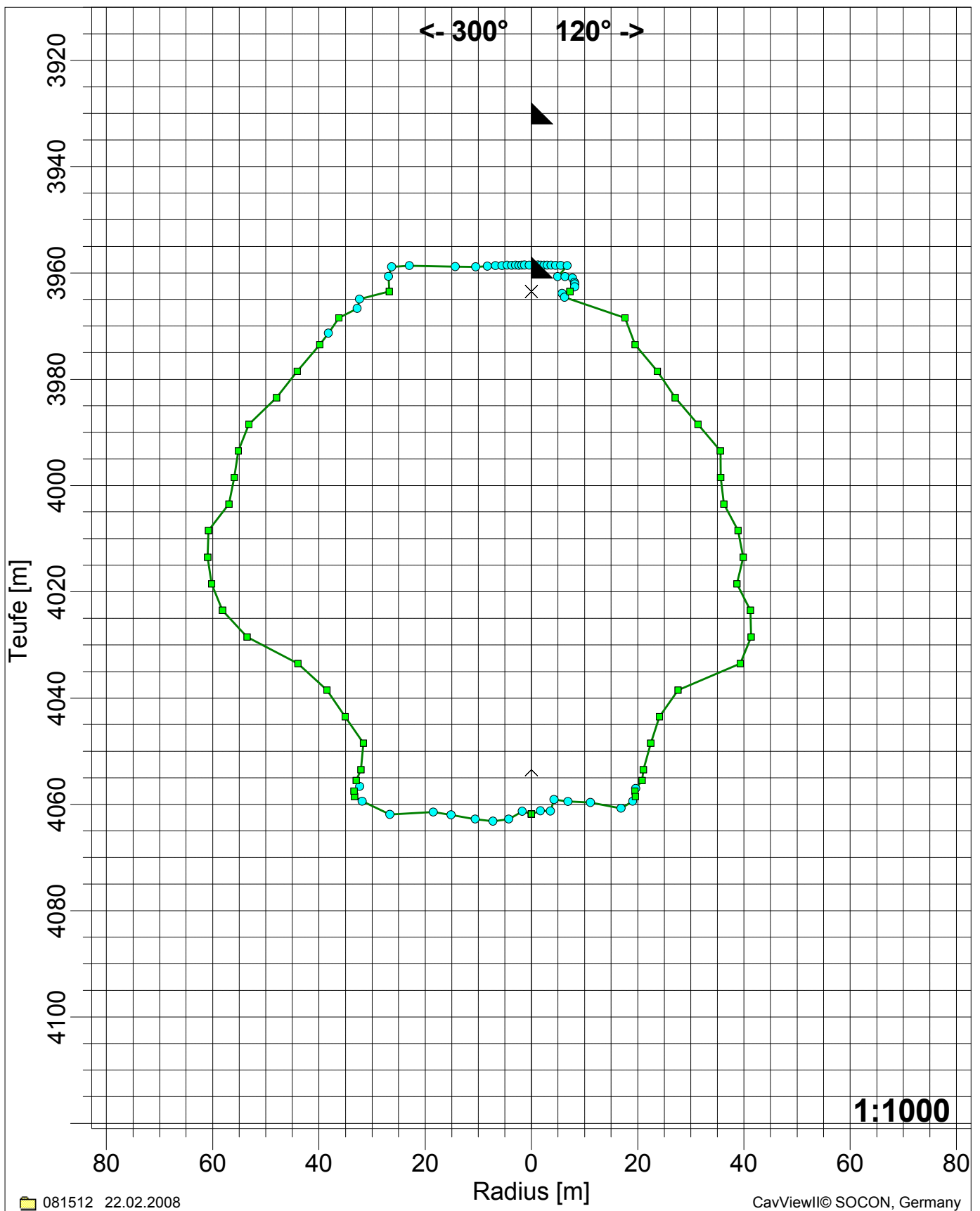
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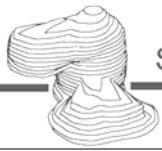
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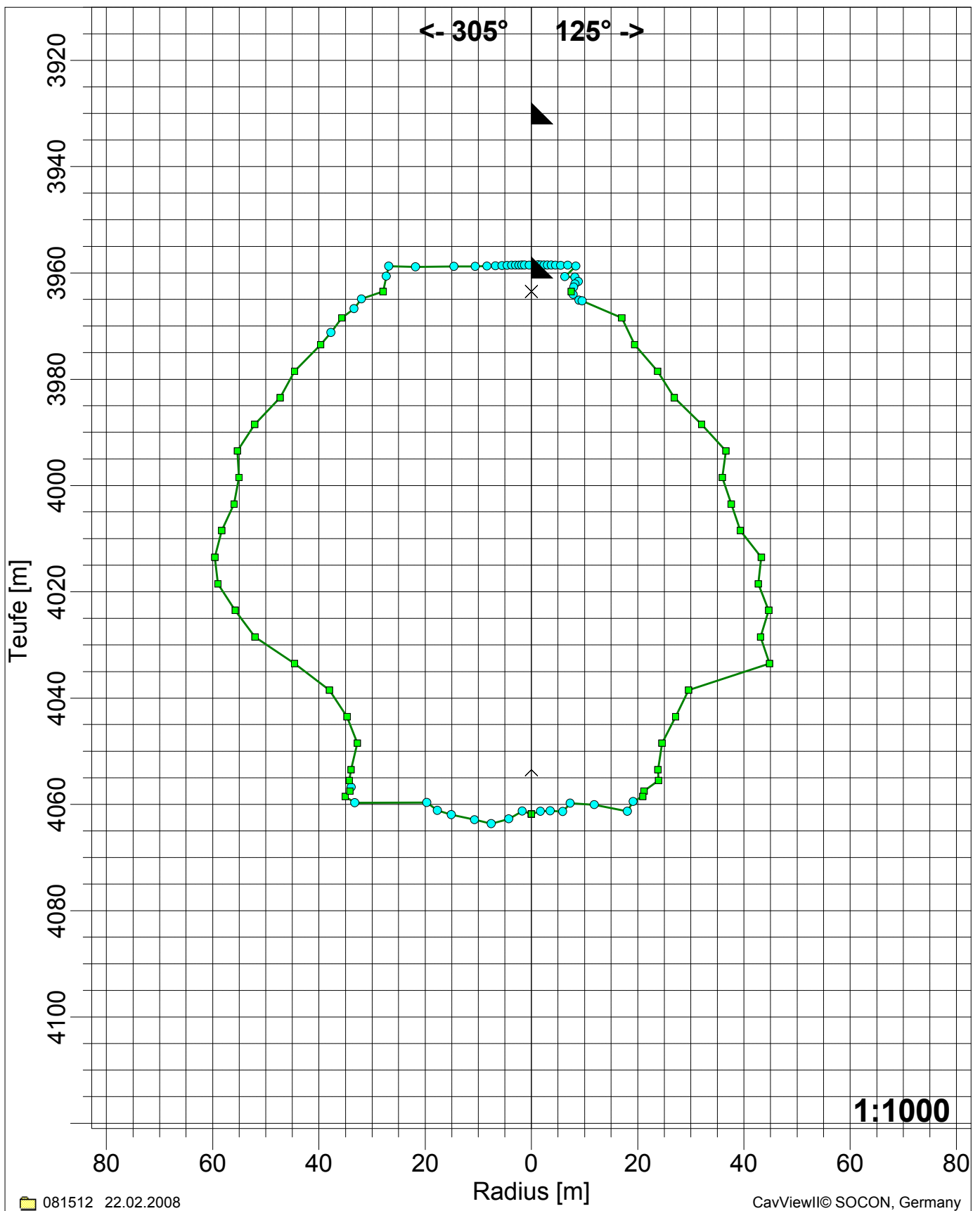
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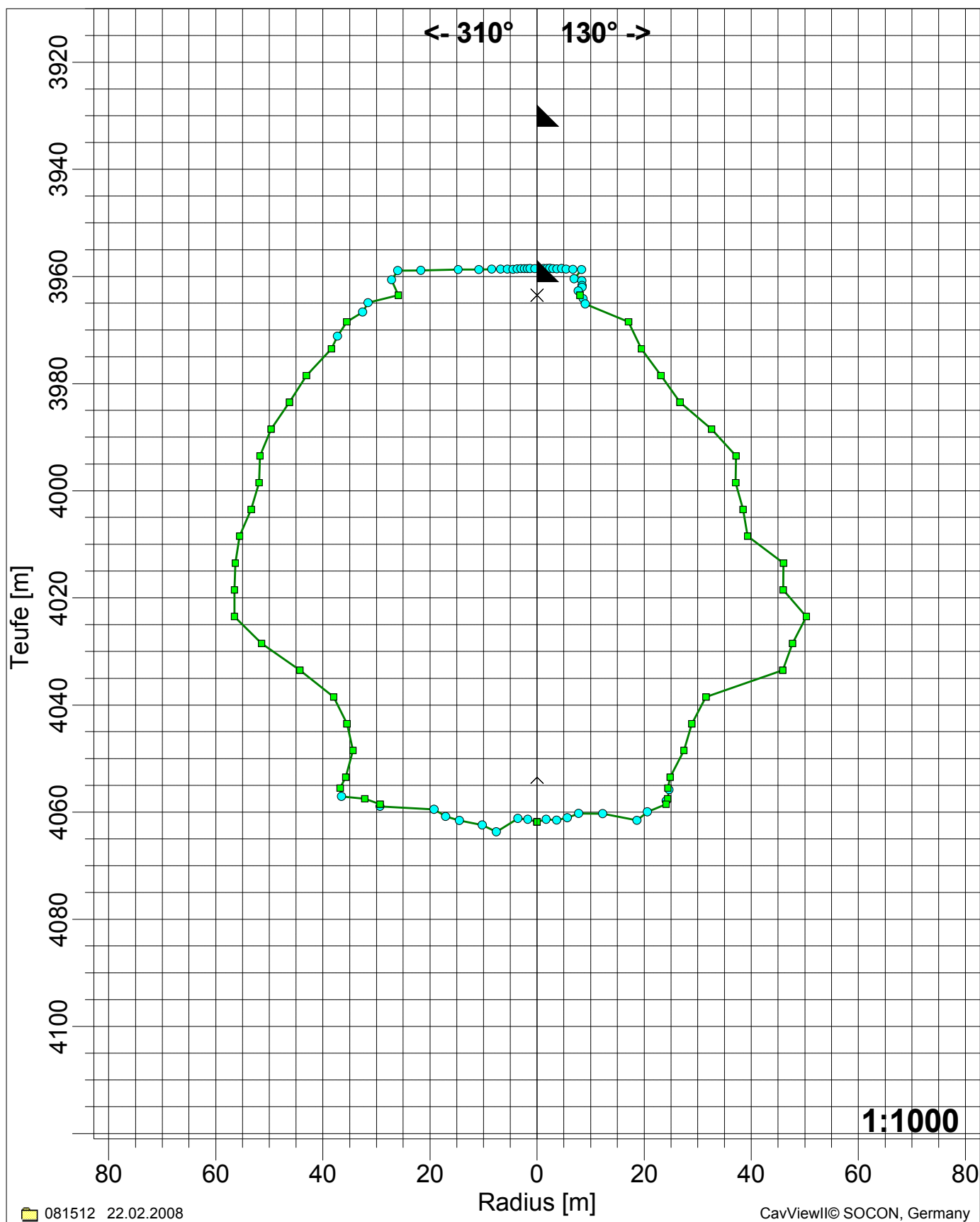
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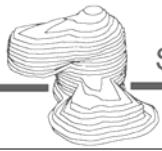
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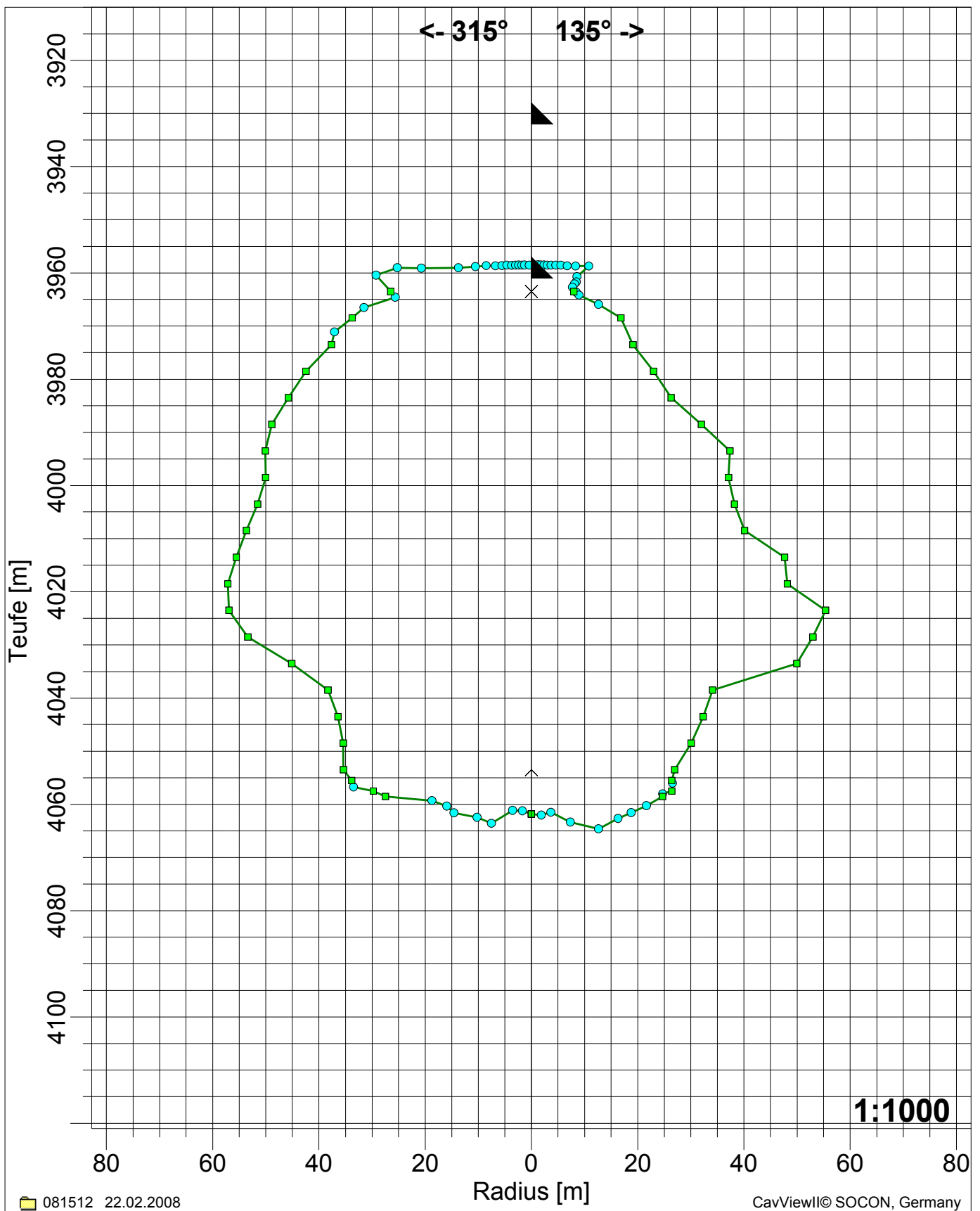


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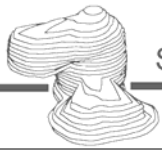
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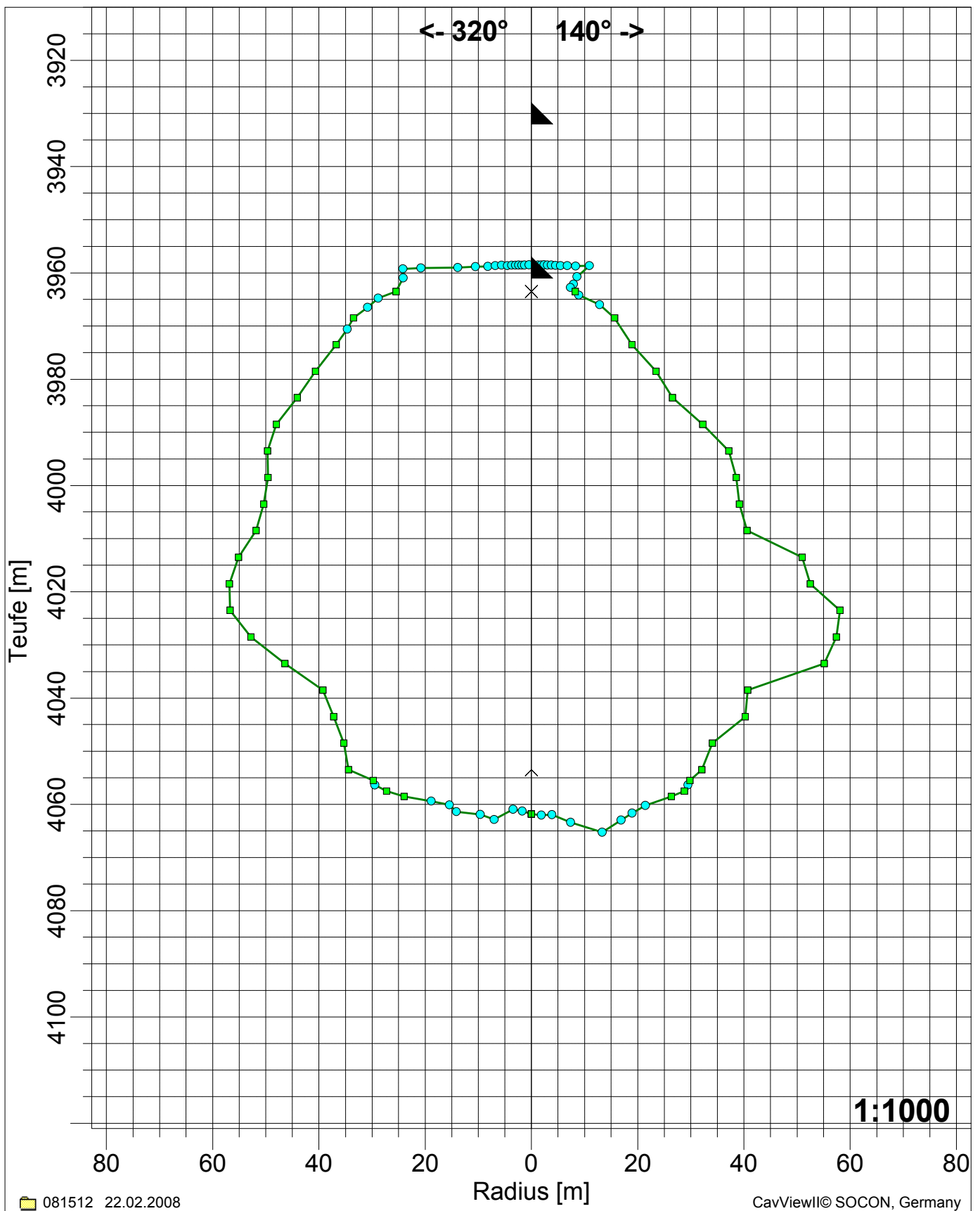
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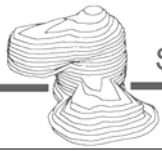
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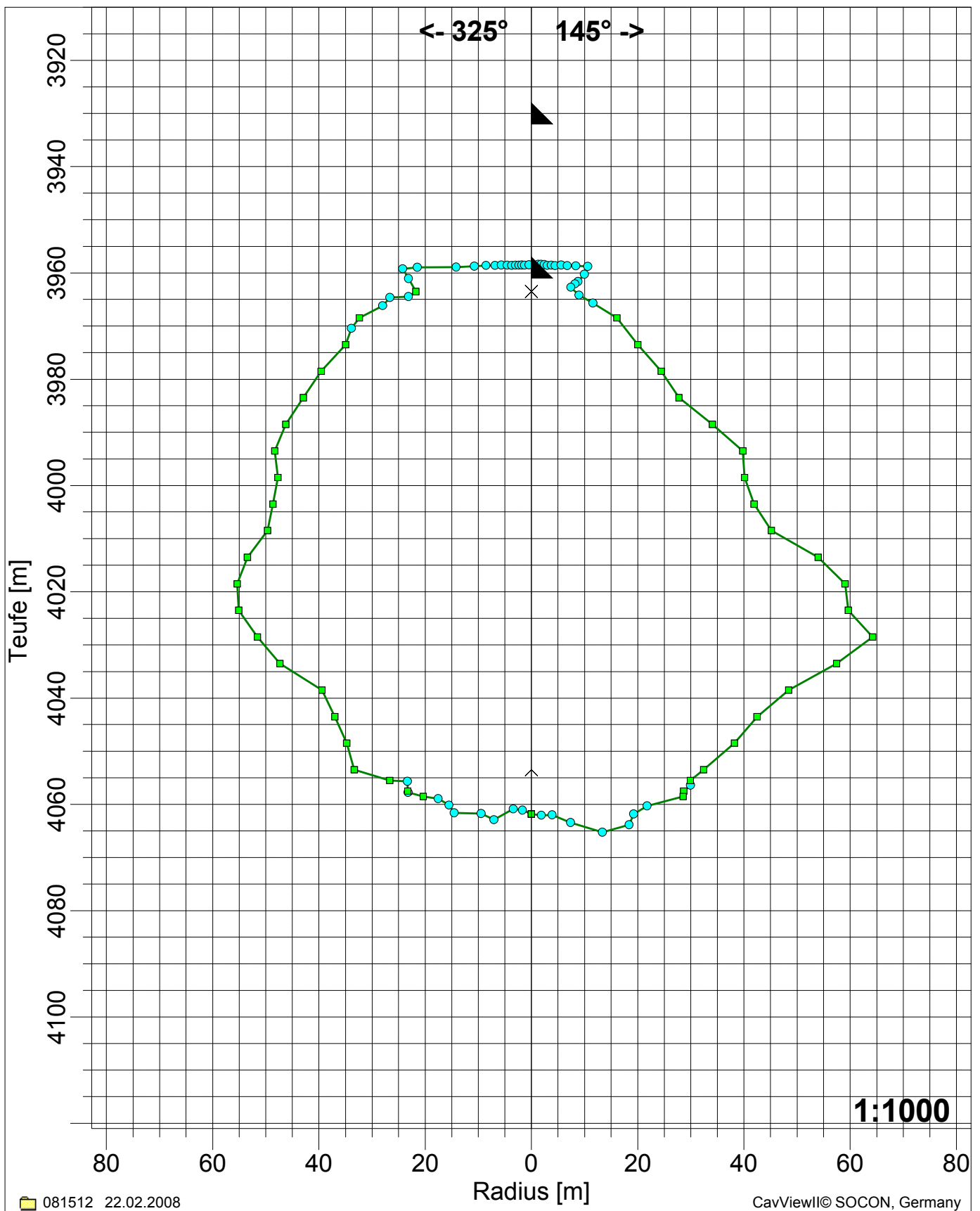
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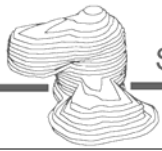
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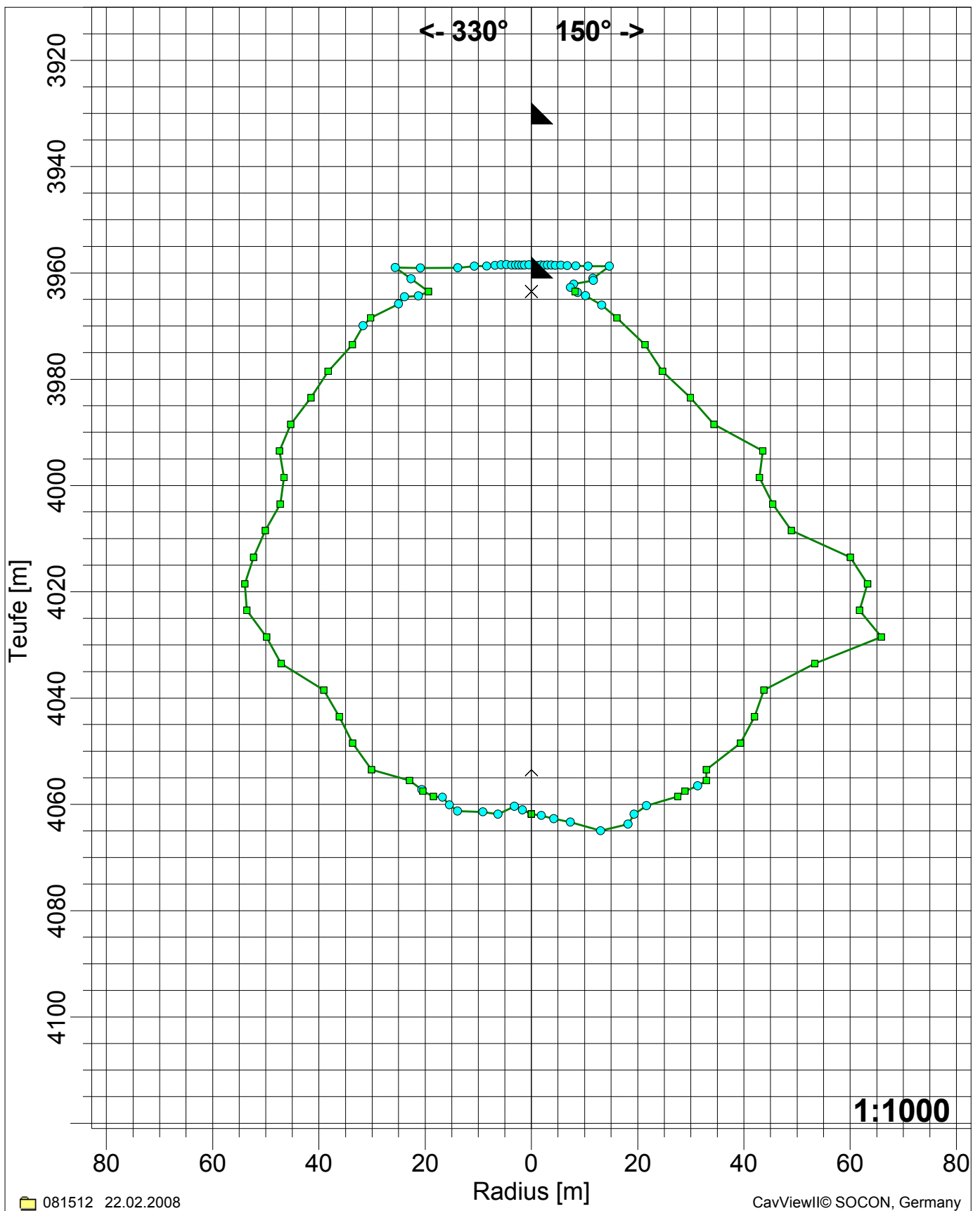
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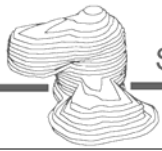
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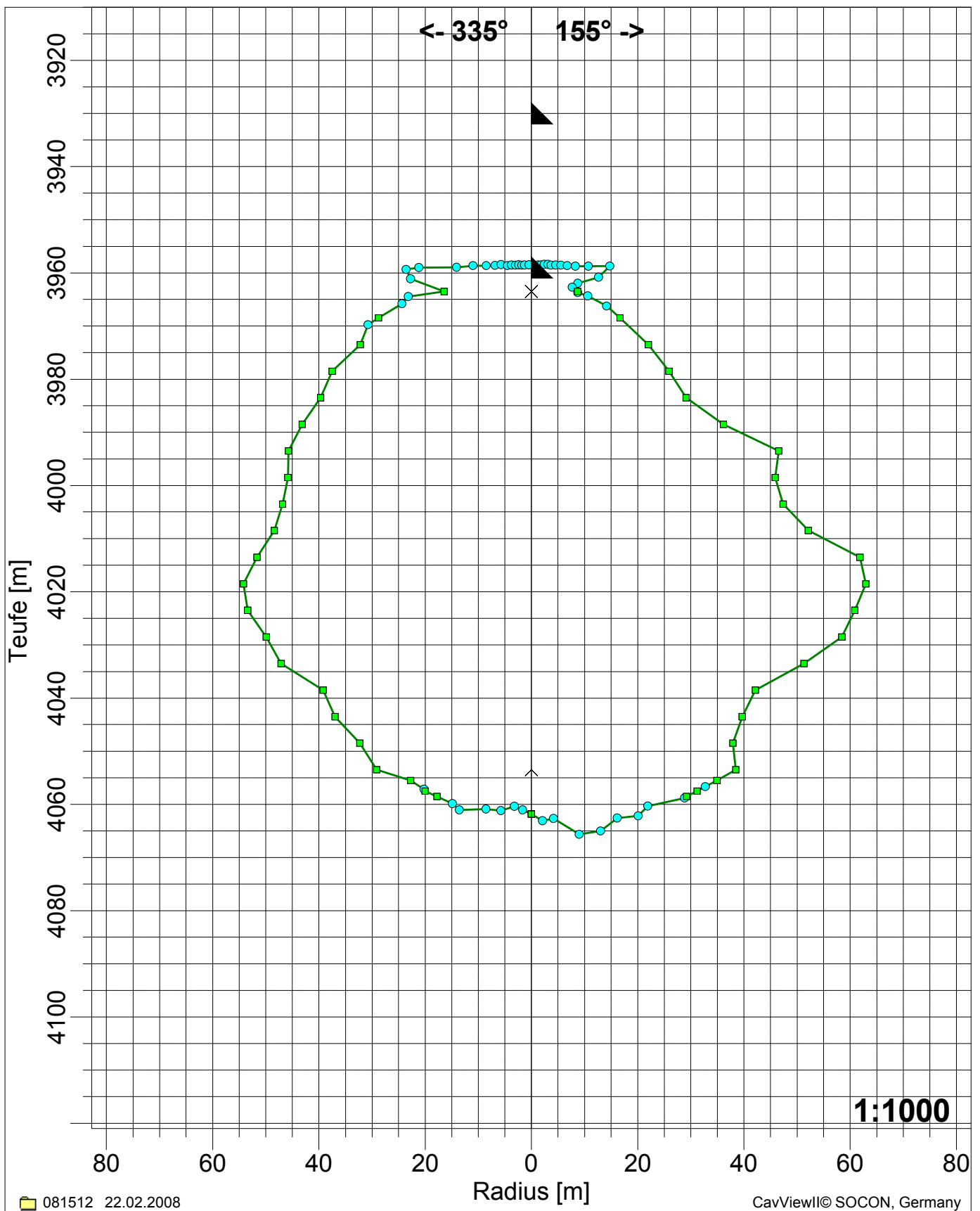
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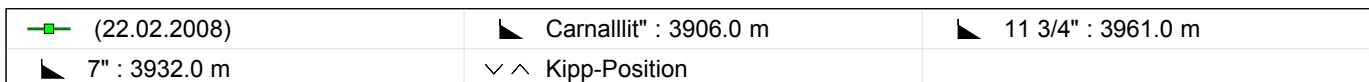
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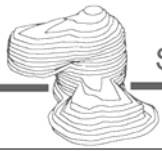
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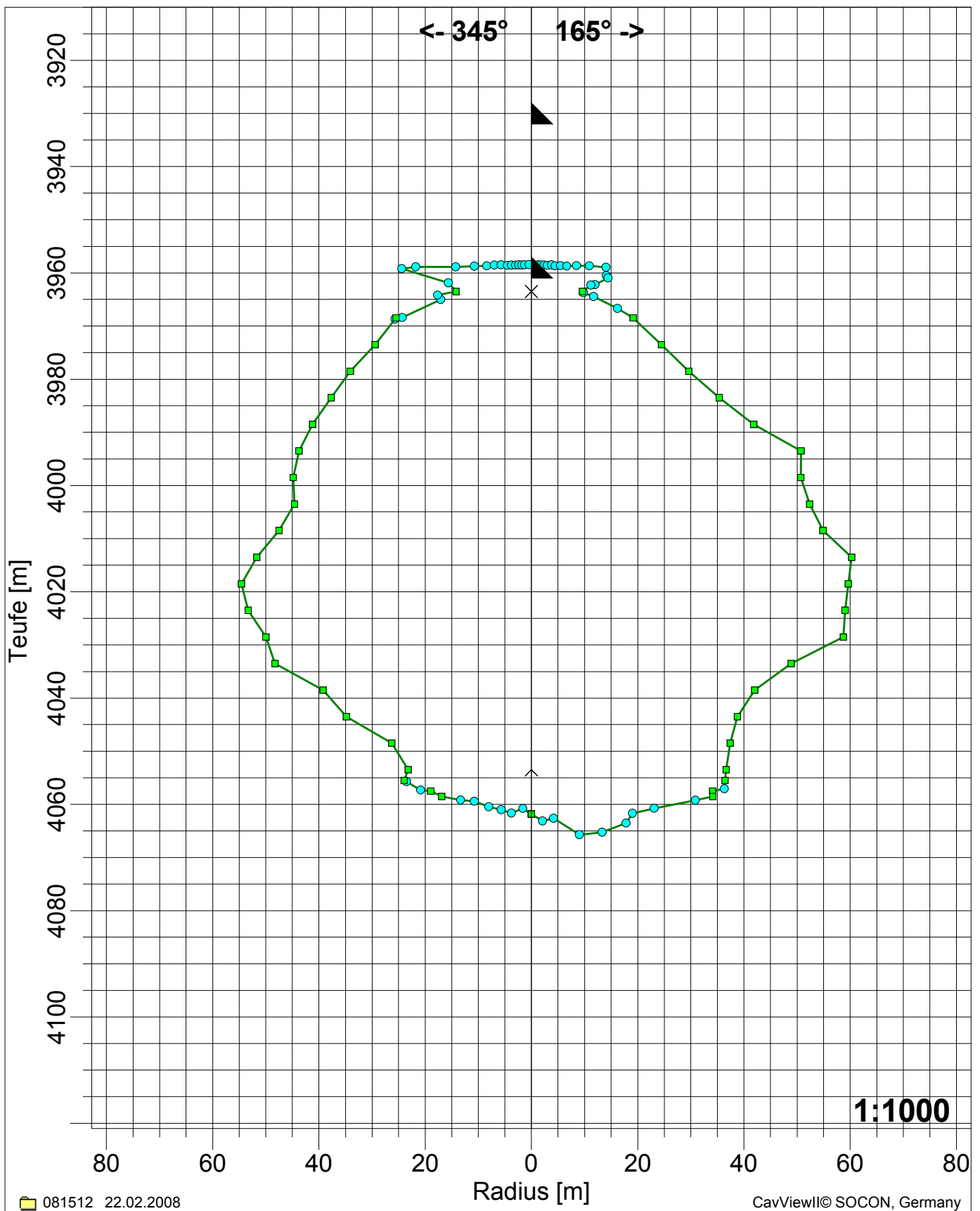
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22.02.2008



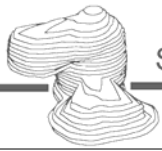
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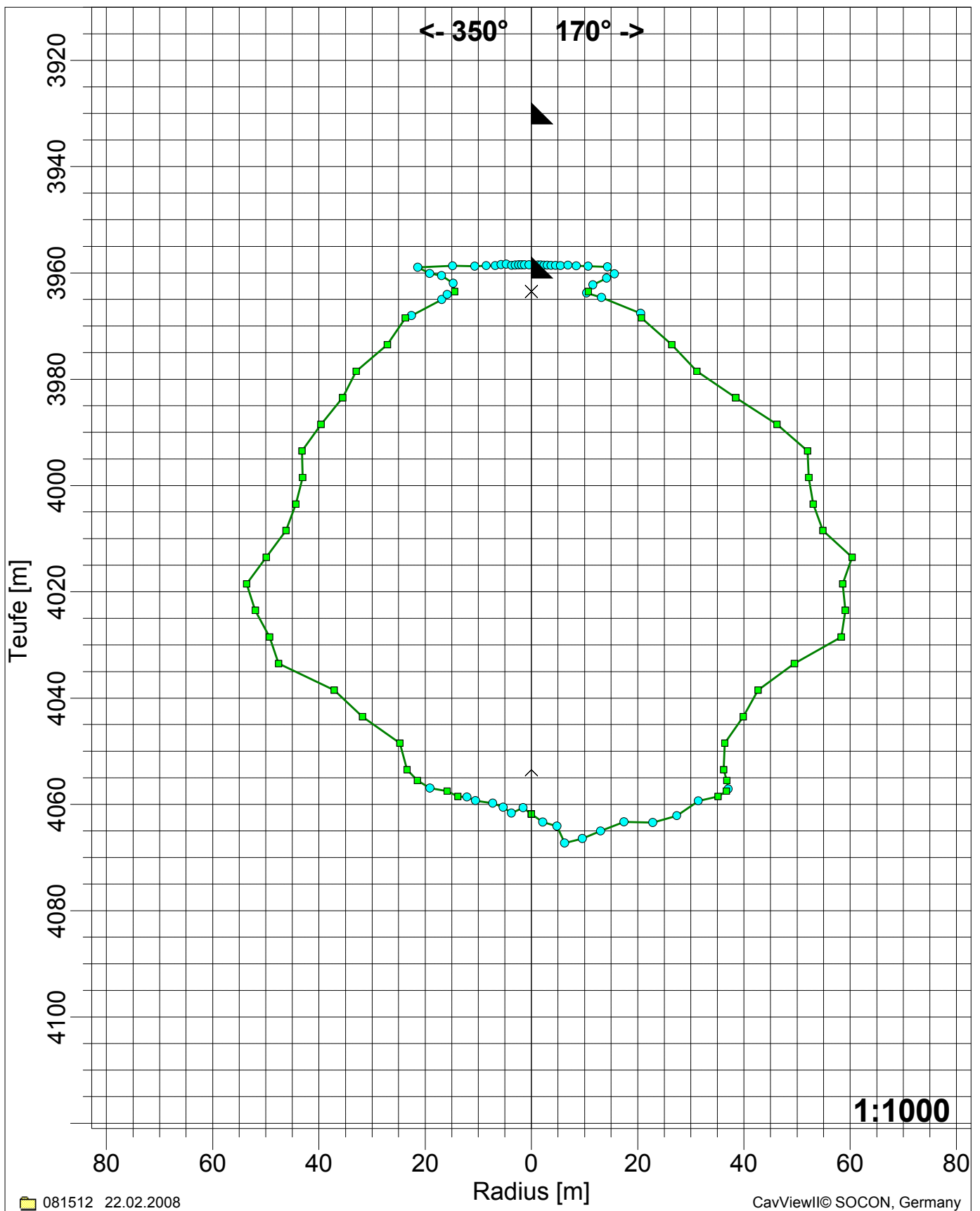
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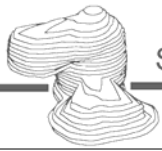
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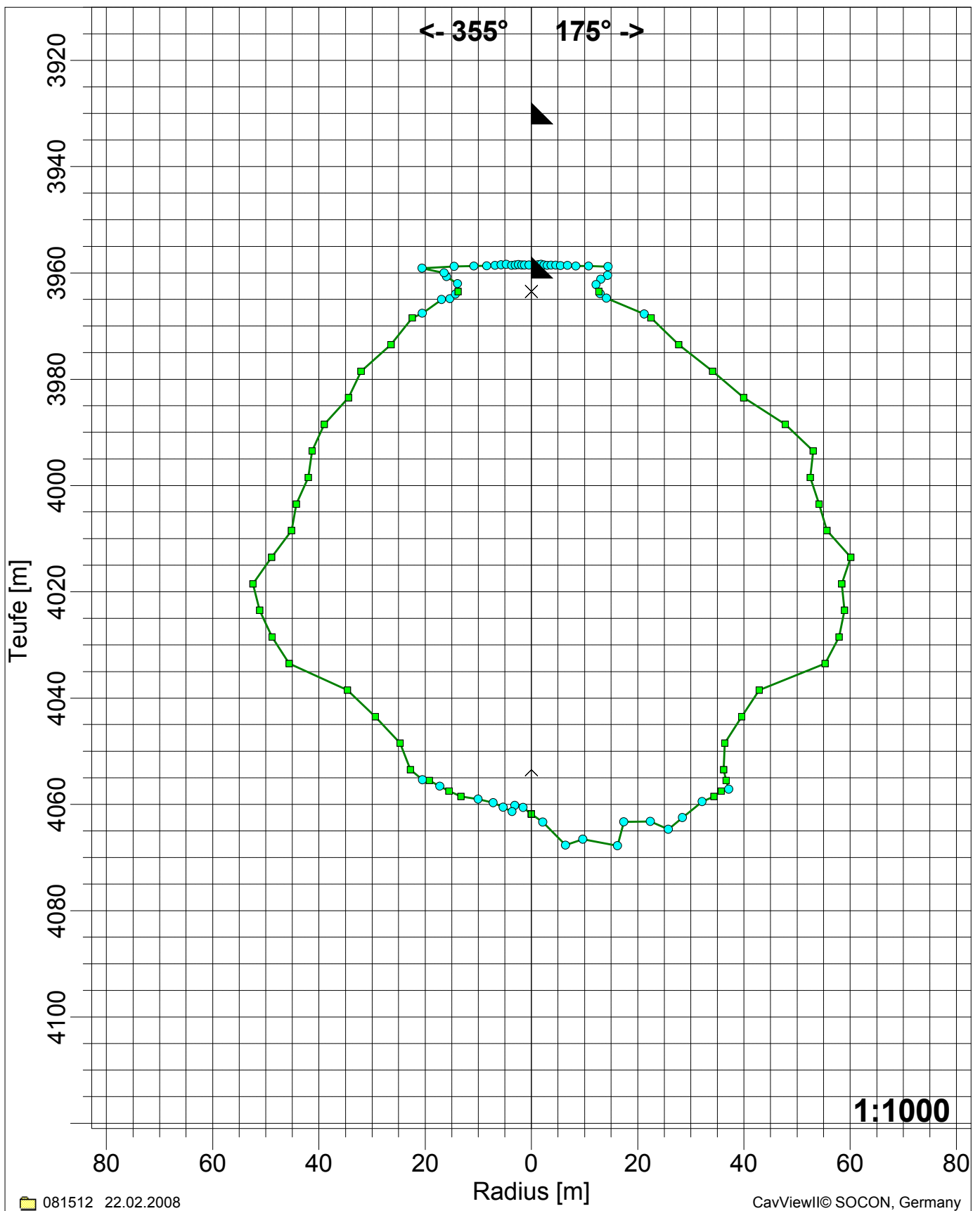
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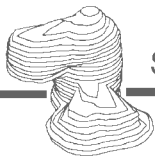
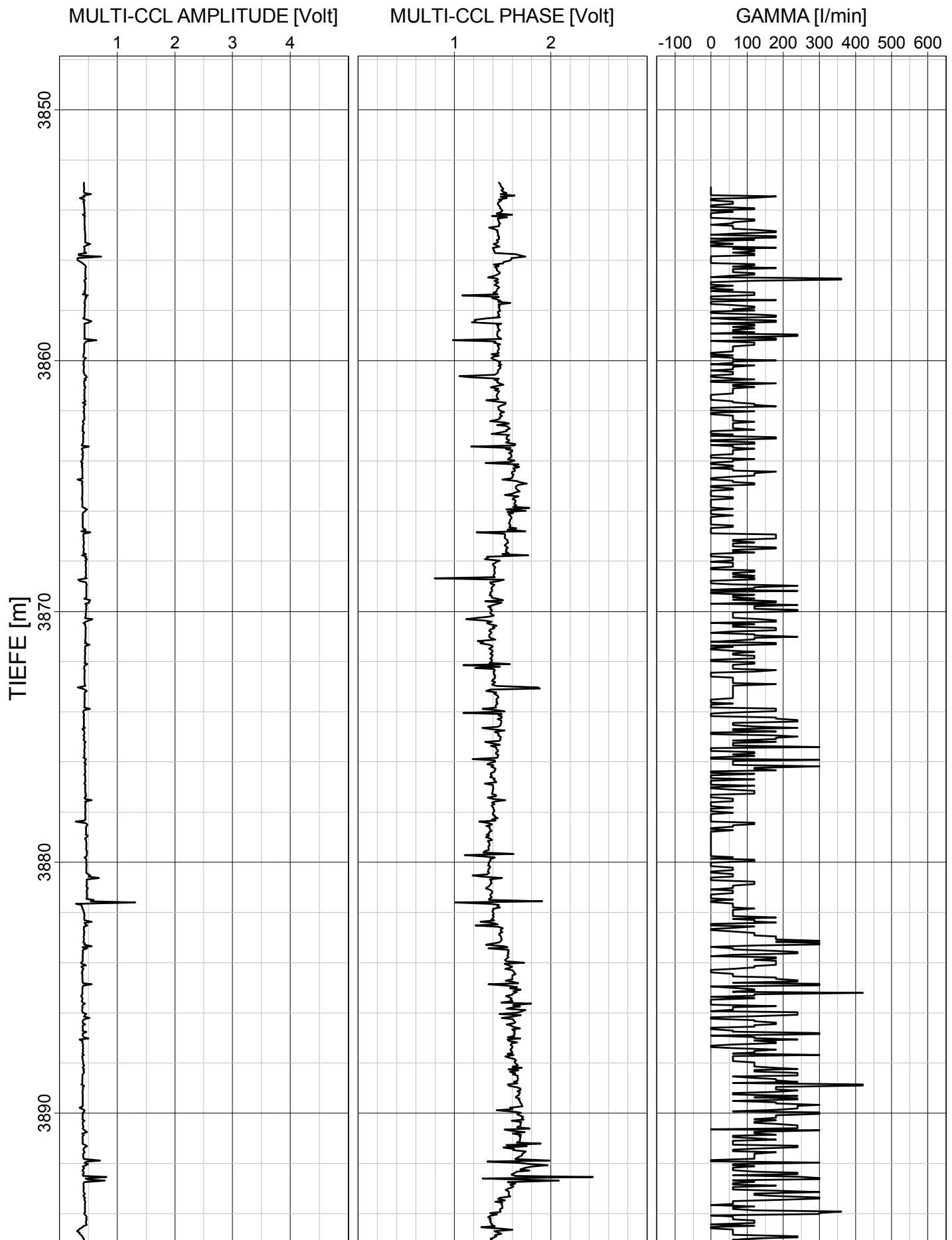
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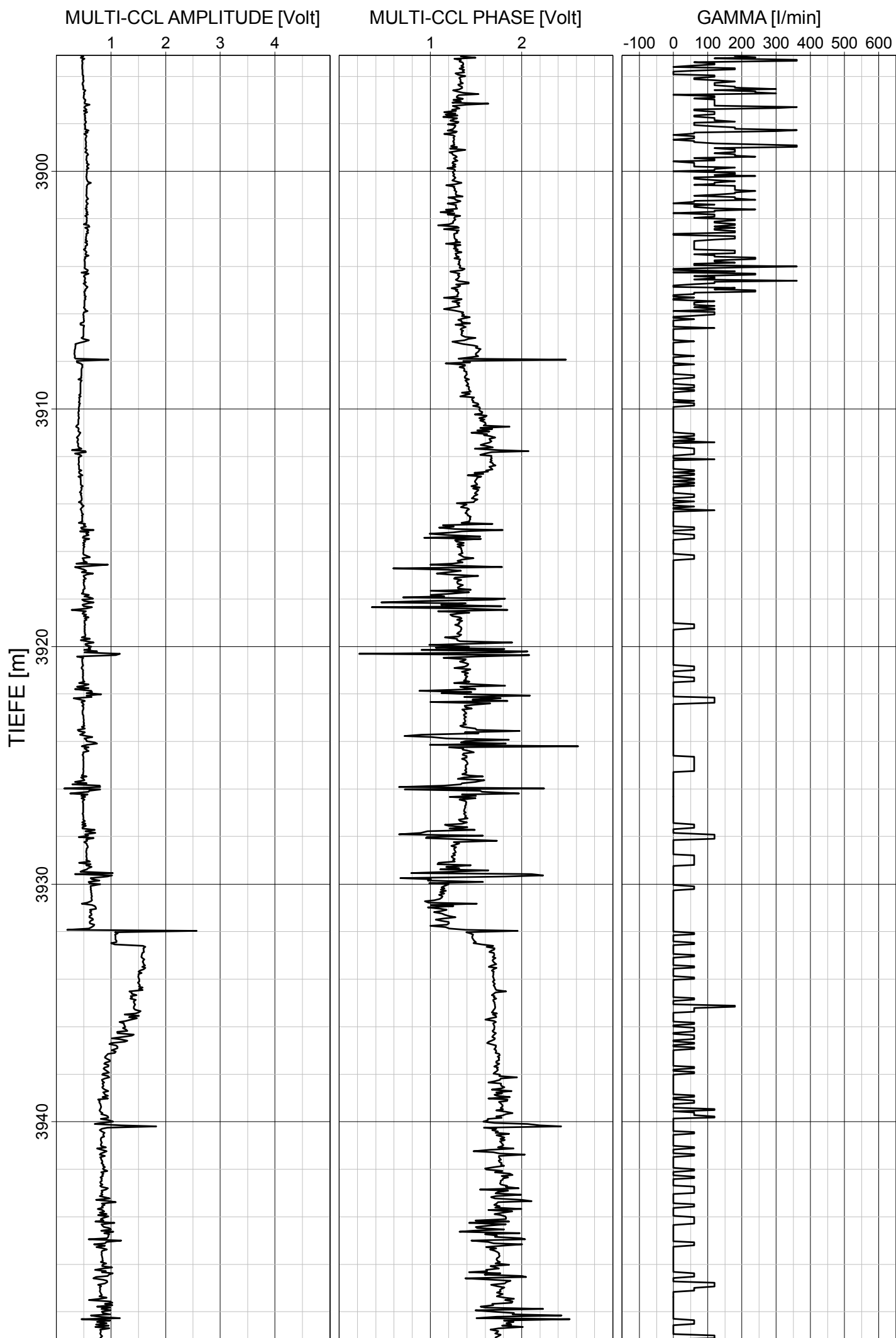
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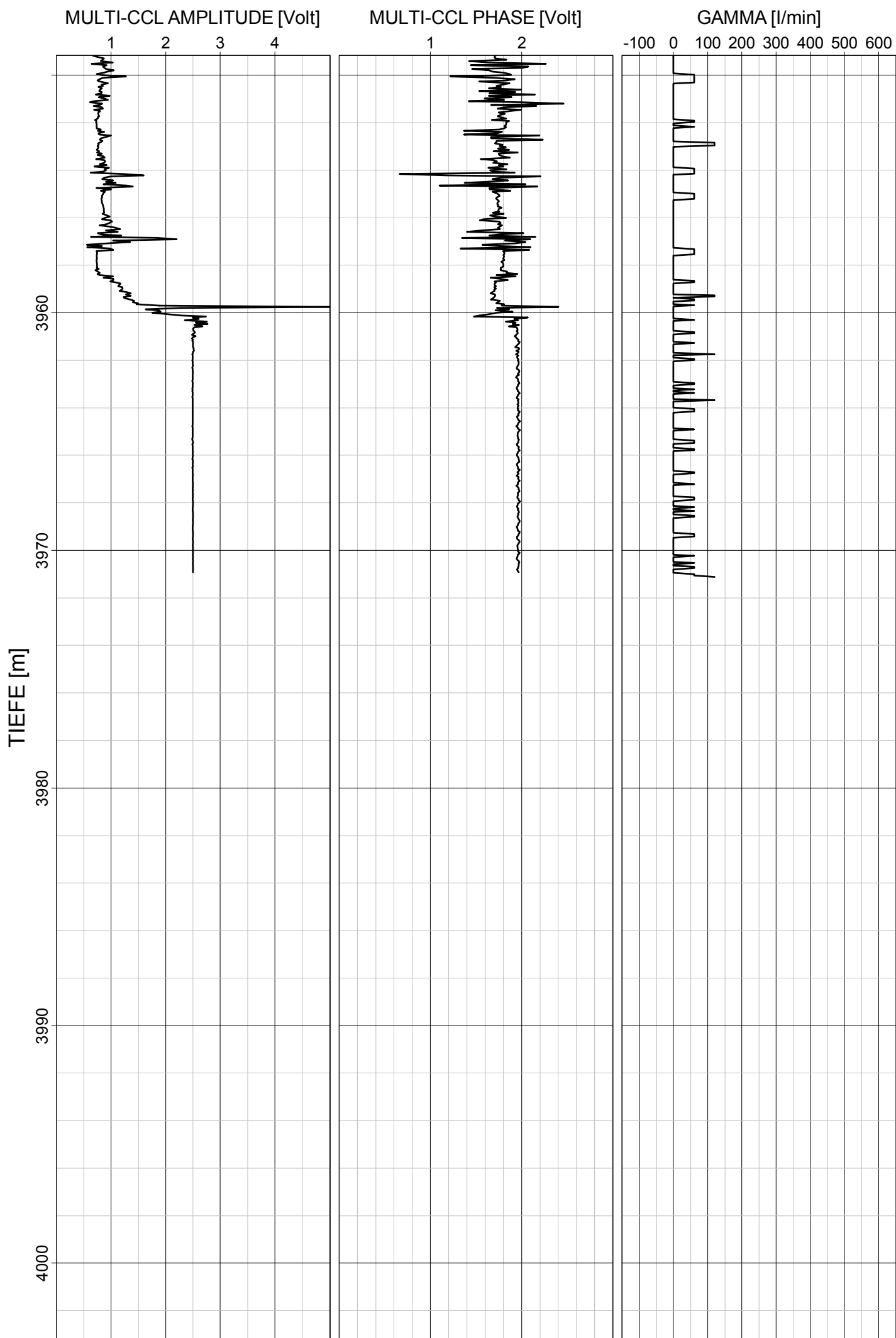
▲ 11 3/4" : 3961.0 m

▲ 7" : 3932.0 m

∨ ^ Kipp-Position

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Harlingen BAS 3

1:200

22.02.2008

