Bergvesenet

Postboks 3021, N-7441 Trondheim

Rapportarkivet

Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
BV 4861	06/00131-21			**Fortrolig**
Kommer fra ..arkiv	Ekstern rapport nr	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
		Sulfidmalm a.s.	Muting	

Tittel

2006 Winter geophysical survey on the Ertelien Project in the Buskerud Fylke, Norway
Appendix D: Logistic Report 2006 UTEM Survey Ertelien Project (winter)
Med CD

Forfatter	Dato År	Bedrift (Oppdragsgiver og/eller oppdragstaker)
Elson, Stuart Heminsley, Geoff	2006	Sulfidmalm A/S Lamontagne Geophysics LTD

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Ringerike Sigdal	Buskerud		18153 18154 17153	Hamar

Fagområde	Dokument type	Forekomster (forekomst, gruvefelt, undersøkelsesfelt)
Geofysikk		Ertelien Langedalen Storebråten Soknadalen Ulleren Sigdal Grågalten
Råstoffgruppe	**Råstofftype**	
Malm/metall	Ni Cu	

Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse

Med CD

-Logistics Report-
2006 UTEM Survey
Ertelien Project
Norway
for
A/S Sulfidmalm

LAMONTAGNE GEOPHYSICS LTD
GEOPHYSIQUE LTEE

Stuart Elson
Geoff Heminsley

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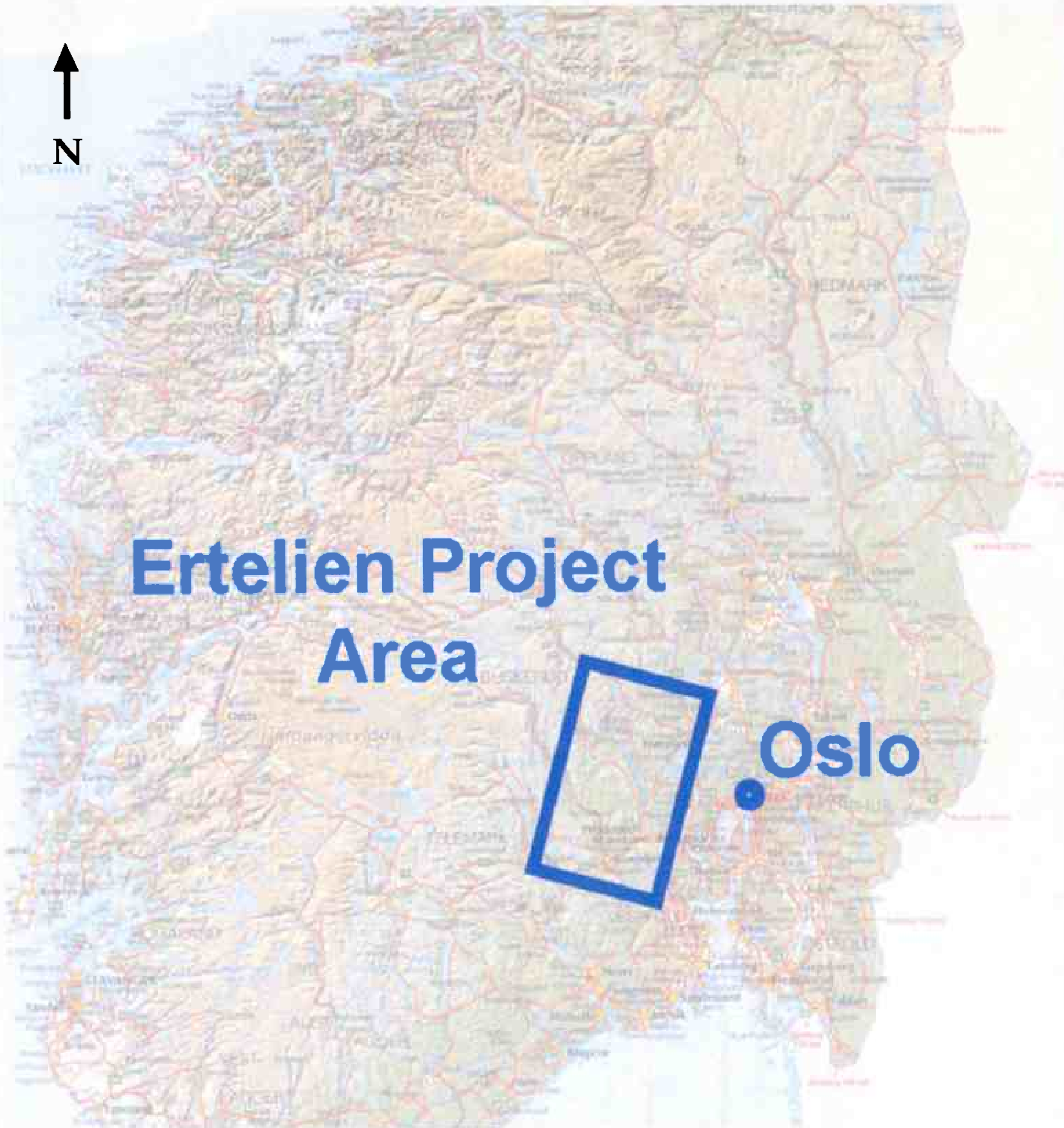
INTRODUCTION

During the period of March 13th 2006 through April 10th 2006 a UTEM survey was carried out by Lamontagne Geophysics Limited personnel for A/S Sulfidmalm in the Ertelien Project area, Norway (Figure 1). The location of the various grids on the property are shown in Figures 2 through 7. Areas of interest were identified from the results of an airborne survey. The survey was carried out to locate conductors in the immediate grid areas with the intention of outlining targets for future work.

A total of 55.400km of surface UTEM data was collected using 8 transmitter loops (Loops 1, 1B, 2,, 3, 5, 6, 7, and 8). All lines were surveyed measuring the vertical component, Hz. A station spacing of 25m or 50m and a line spacing of 50m, 100m or 200m was employed. For all loops the receiver operated in 10-channel mode at a transmitter frequency of 3.251Hz.

This report documents the UTEM survey in terms of logistics, survey parameters and field personnel. Appendix A contains the data presented in profile form. Other appendices contain:

- List of Personnel/Production Log (Appendix B)
- an outline of the UTEM System (Appendix C)
- Note on sources of anomalous Ch1 (Appendix D)
- Note on 4Hz UTEM Data (Appendix E)
- Discussion of noise issue (Appendix F)



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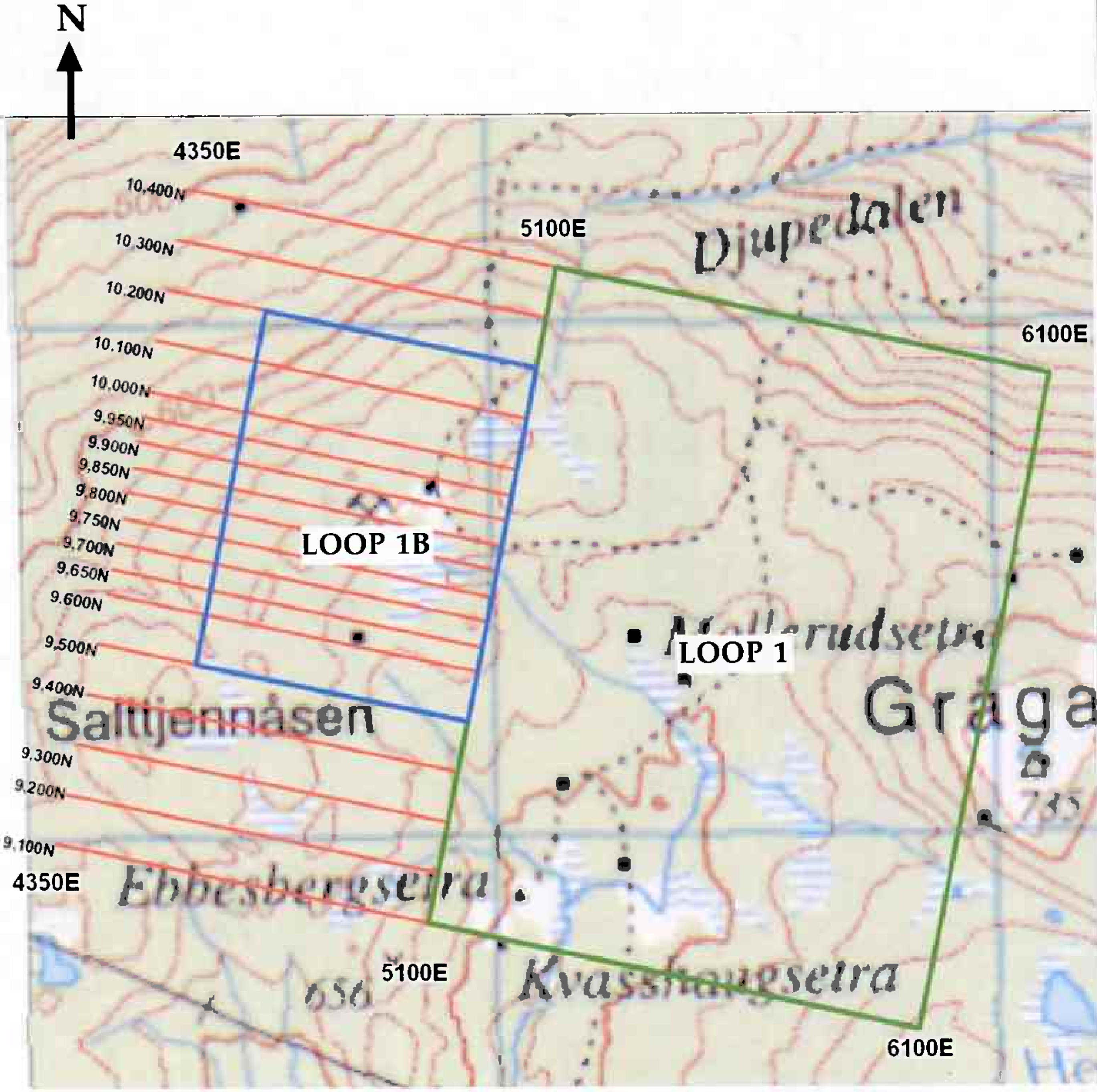
Ertelien Project, Norway

UTEM Survey Location Map

Figure 1



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A/S Sulfidmalm

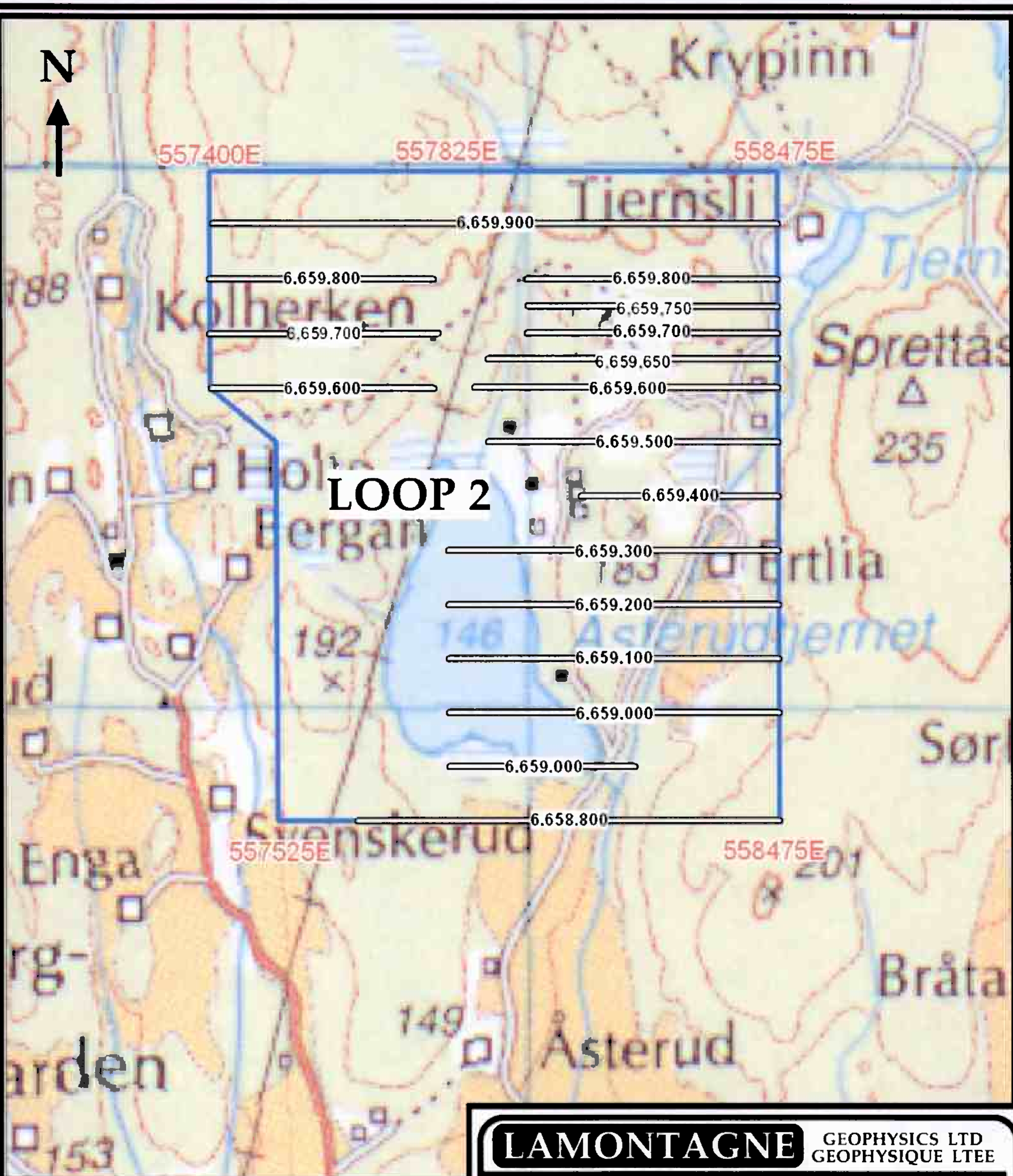
Loop Location Map

Sigdal Grid

0 125 250 375 500 625 meters

1 : 12,500

Figure 2



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A/S Sulfidmalm

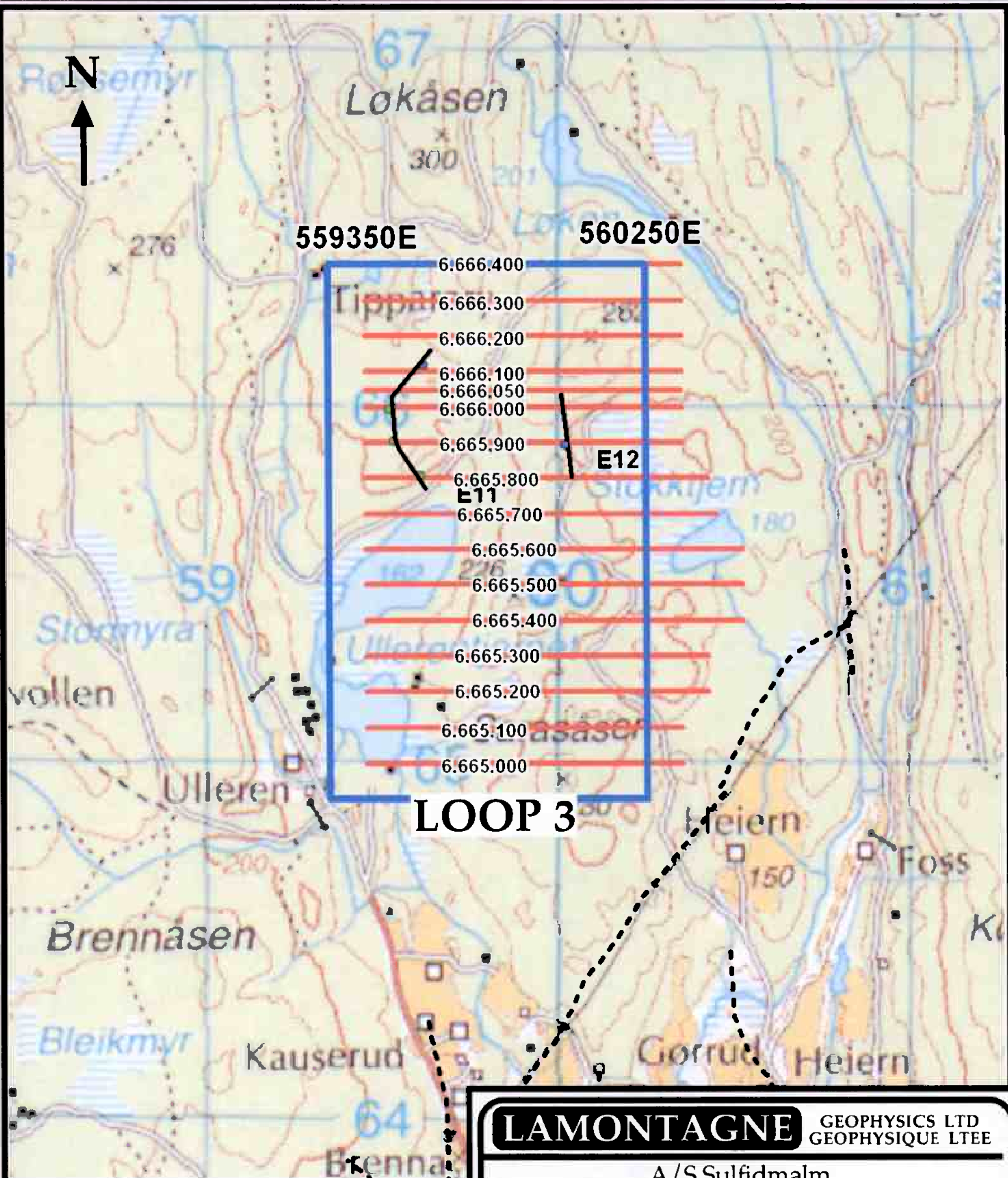
Loop Location Map

Ertelien Mine Grid

0 100 200 300 400 500 meters

1 : 10,000

Figure 3



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A/S Sulfidmalm

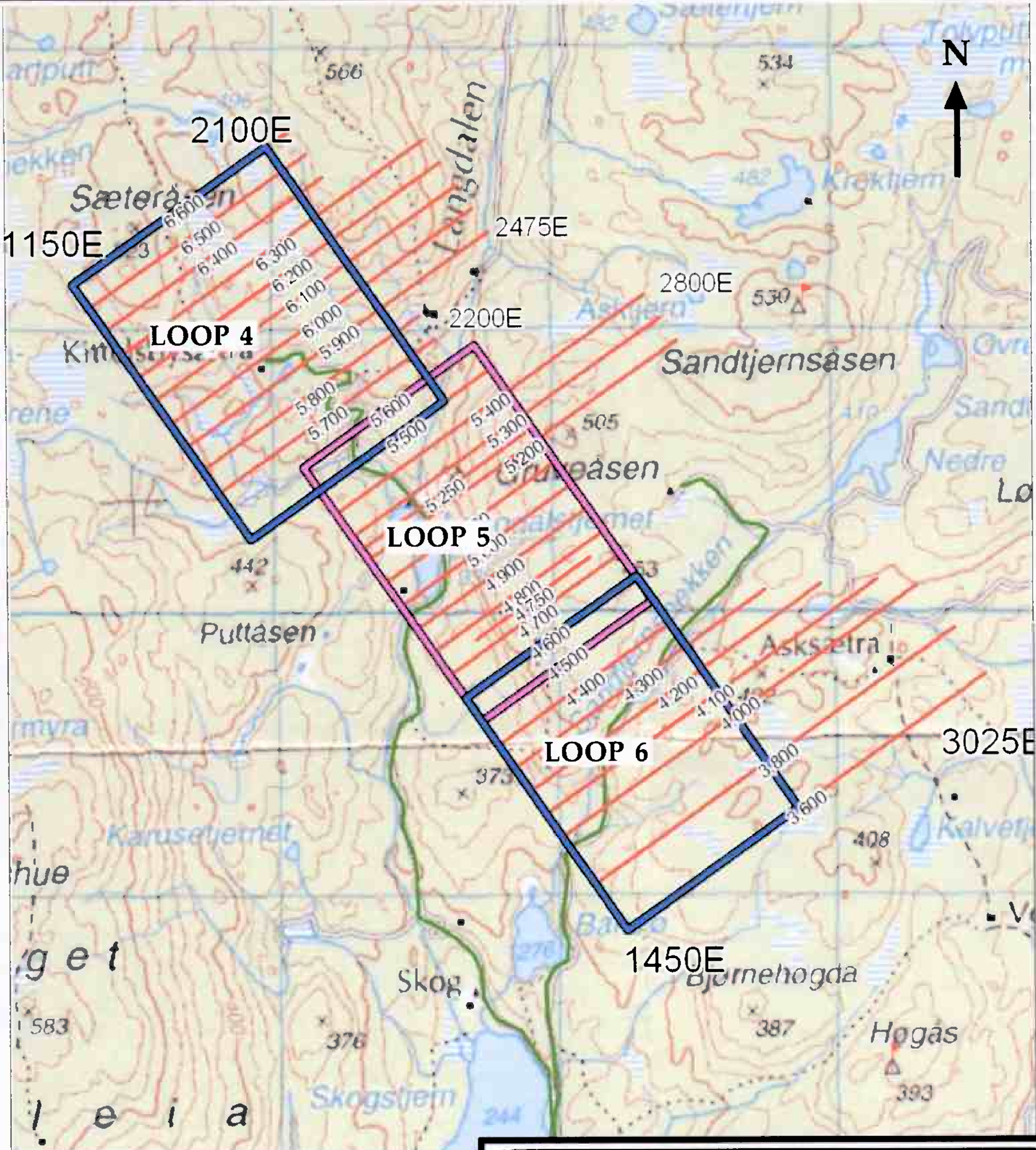
Loop Location Map

Ulleren Grid

0 150 300 450 600 750 meters

1 : 15,000

Figure 4



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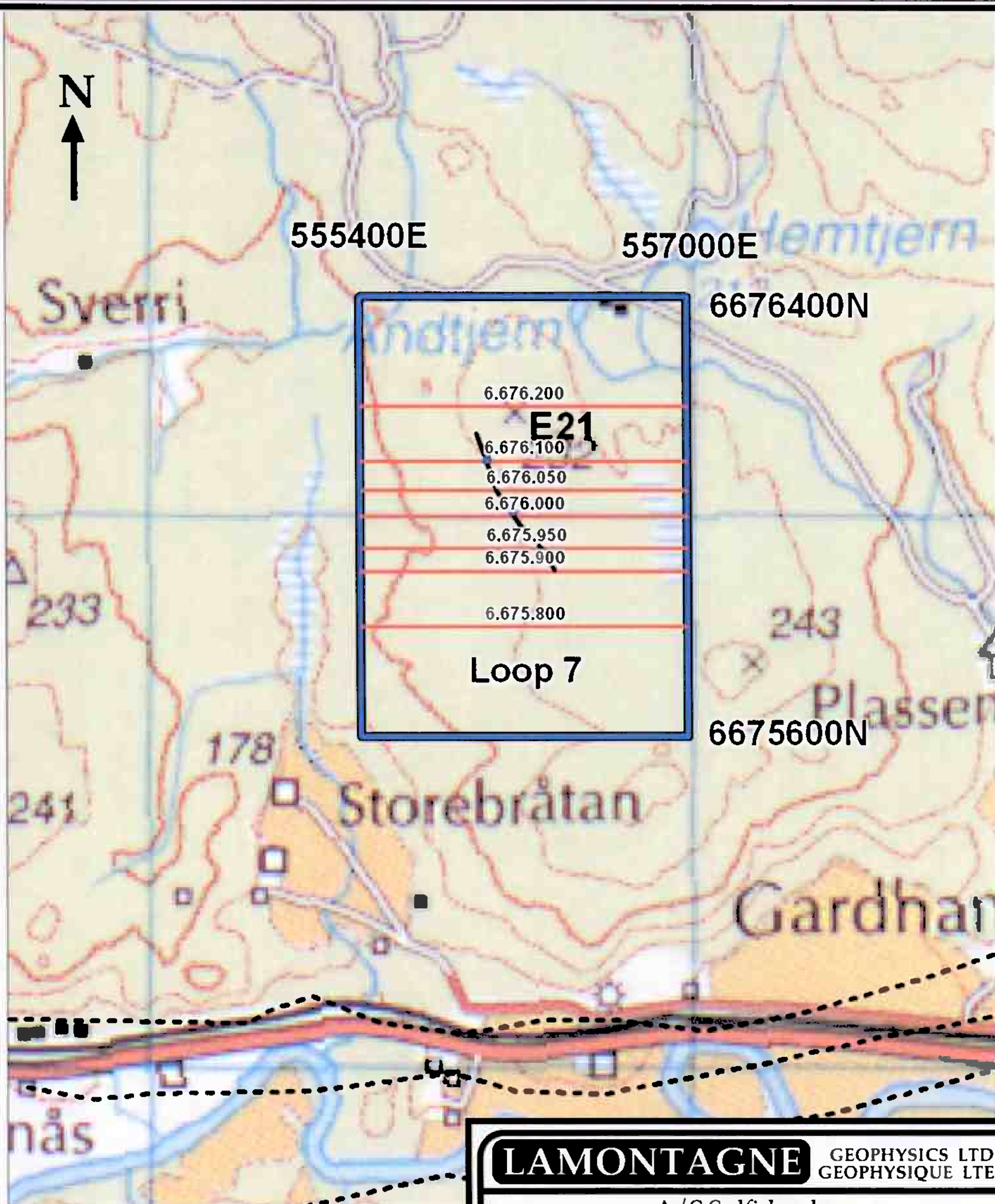
Loop Location Map

Langedalen Grid

0 200 400 600 800 1000 meters

1 : 20,000

Figure 5



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A/S Sulfidmalm

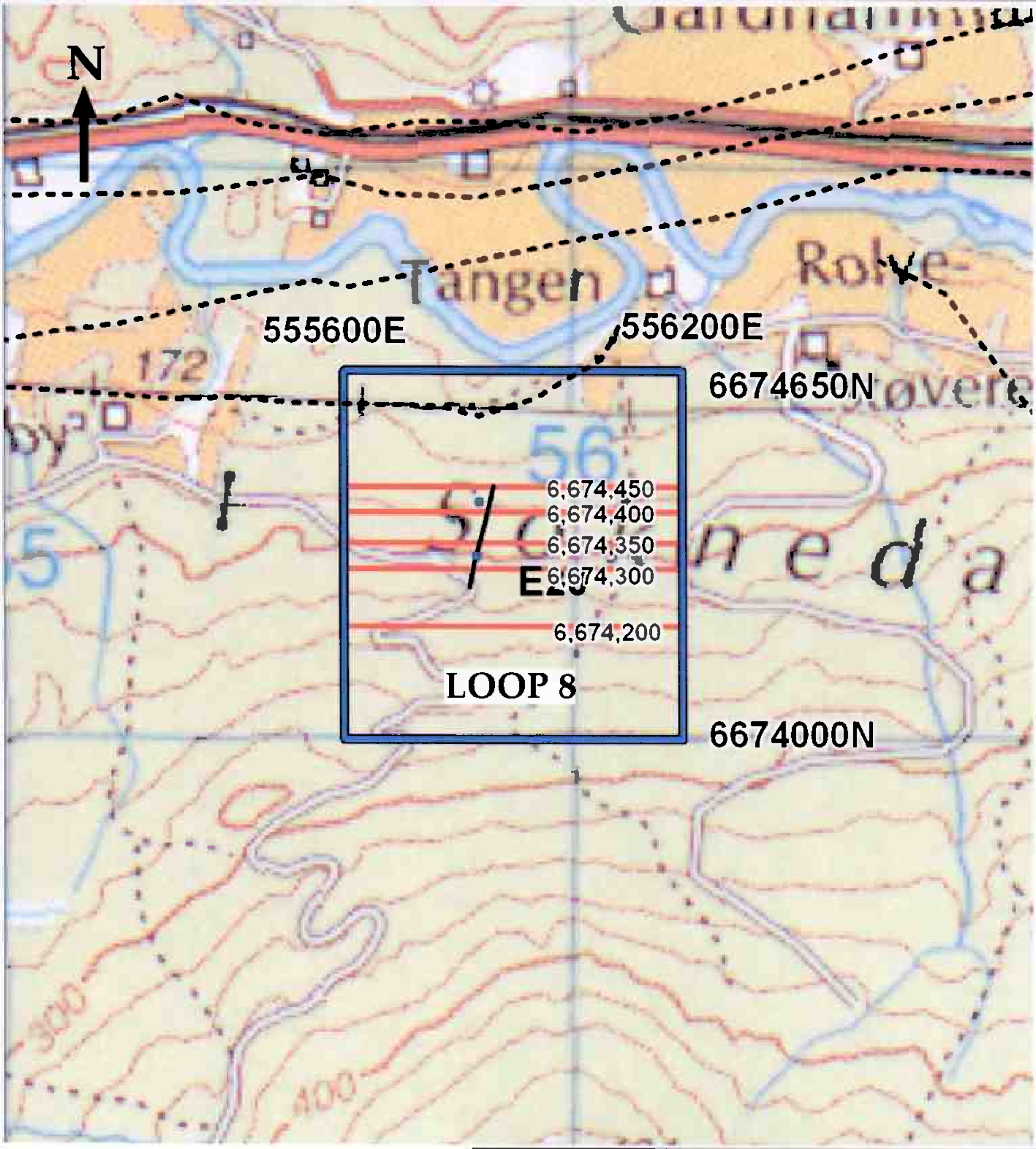
Loop Location Map

Storebraten Grid

0 100 200 300 400 500 meters

1 : 10,000

Figure 6



LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

A/S Sulfidmalm

Loop Location Map

Soknadalen Grid

0 100 200 300 400 500 meters

1 : 10,000

Figure 7

SURVEY DESIGN

This UTEM survey is part of a nickel exploration program in the Ertelien Project area. Historically, mining of Ni-bearing massive sulfide deposits has been carried out in the area. The UTEM survey was planned and carried out to outline and allow better definition of known conductors, to detect/outline new conductors and to detect/outline deeper features and depth continuations of known features.

The grid and loop layout was designed by A/S Sulfidmalm/Falconbridge Ltd. personnel to allow efficient coverage of the project area. Loop size and locations were selected to provide good coupling with the expected targets, to enhance the signal to noise, and to allow efficient coverage of the grid area. The base frequency was lowered from the international standard ~26Hz to 3.251Hz to eliminate the response of many "moderate" conductors - these responses will have decayed away by Ch1 time. Any remaining Ch1 responses are then considered to be representative of conductors of an appreciably higher conductivity.

The survey parameters employed:

- both in-loop and outside-the-loop coverage with 2 receivers
- 1.70mm diameter (~14 gauge) copper wire was used
- variable tansmitter loop size - to fit the area to be covered and the relief
- line spacing of 200m, 100m or 50m intervals as required
- station interval of 25m or 50m with detailing at 12m as required.
- Hz (vertical component measurements)
- 10-channel data at a frequency of 3.251Hz
- minimum 256 stacking (512 half-cycles) increased where noise levels dictate

In nickel exploration non-decaying Channel 1 (Ch1) conductors are indicative of highly conductive mineralization. Any non-decaying anomalous Ch1 features are therefore of interest. Non-decaying channel UTEM anomalies can reflect:

i) the presence of conductive mineralization
ii) the presence of a magnetic anomaly
iii) poor geometric control - either station location or loop location

These are outlined in more detail in Appendix D. From an interpretation standpoint magnetic anomalies and geometric control should be considered and evaluated as a mandatory part of any interpretation. From a field standpoint precise geometric control should be part of any UTEM survey where the target is non-decaying. Poor geometric control has the potential to both mask and invent Ch1 conductors.

For this survey GPS data was collected by the client and made available for use in reducing the UTEM data. GPS data was collected for all survey points and at intervals around all transmitter loops. GPS data collection for UTEM reduction should be most detailed along loop fronts - the most important portion of the loop from a UTEM reduction perspective. The goal along the loop front - and loop sides/back - is to recover the topographic shape of the loop as well as the loop/line intersection points. The GPS data is even more critical when surveying from inside the loop, since all four loop edges contribute to the measured field.

SURVEY LOGISTICS

A Lamontagne Geophysics crew mobilized from Kingston/Ottawa to Oslo on March 13th. The crew consisted of Stuart Elson (crew chief), John Frost (operator), Tim Pinkerton (looper) and Kevin Arsenault (looper). The crew arrived in Oslo on March 14th, and were met at the airport by Doris Fox and Robert Jones from Falconbridge Ltd. The crew drove to the base of operations at a field house near Tyristrand, where the UTEM equipment had been delivered the previous day. The following morning, the crew finished unpacking the gear and spooled wire from the factory spools onto the Lamontagne spools. In the afternoon, Stuart Elson and John Frost went to the first grid to meet the skidoo supplier and to familiarize themselves with the area. Loop 1 at the Sigdal Grid was laid the following day, March 16th, and surveying began on the 17th.

Eight transmitter loops were used during the surface UTEM survey for a total survey coverage of 55.400km. Figures 2 through 7 show the loop locations and grid layouts. Access to the Ertelien Project area was by pick-up truck, and access to the individual grids was by snowmobile. The grid/loop positions had been established by GPS and were demarcated by bamboo wands or flagging.

Electrical connection to the generator was made through an LGL isolation-transformer and a Variac which was rewired to conform with the sockets (standard 2-pin/side-clip ground european) on the generator. The generator was left in the field during the nights, but the transmitter was brought back to the field house every evening. The first generator that was purchased for the LGL crew was unable to run for more than 5 consecutive hours before it would begin to oscillate and shut off. A second generator was purchased, which ran for the remainder of the survey without incident.

In general, surface surveying for all loops went well, although more slowly than expected. Noise levels proved to be high and in places, along certain geologic structures, extremely high. Higher noise levels in the vertical component are typical of very resistive areas. Locally, noisy areas indicate some channeling of telluric currents along features in the very-resistive country rock. The noise levels encountered in the project area are discussed further in Appendix F.

Also, due to the location of the project area in the south of Norway, the grids were located close to regional power lines. For most of thegrids the power lines were less than ~1km away and in some cases the power lines crossed the grids (see Figures 3 and 8) The original loop configurations were designed for an out-of-loop survey. Loop 1 at the Sigdal Grid was laid with this configuration (see Figure 2). However, the noise levels encountered were extremely high and production was limited by high stacking and repeat readings. After a few days of surveying the configuration was changed to an in-loop configuration (Loop 1B), which improved the signal-to-noise ratio and increased survey production. The in-loop configuration was then adopted for the remaining grids where possible. After surveying from Loop 1 at the Sigdal Grid, the highest possible pre-whitening level was used for all the remaining transmitter loops to further enhance the signal-to-noise.

On March 18th, the internal clock in the transmitter was interrupted after ~45 minutes of surveying. It was unclear what the cause of the interruption was, and the problem was not identified until the data was reduced in the evening. Channels 6 to 10 on portions of Lines 10100N, 9500N and 9400N from Loop 1 at the Sigdal Grid were affected by this synchronization problem. The profiles for these lines are presented in Appendix A, since these lines were not re-read before the loop configuration was changed.

The Ertelien project area had powerlines close to/or crossing the survey grids, except on the Langedalen grid. In general, surveying in the area of powerlines required additional stacking and the profiles in Appendix A are noisy in the vicinity of the cultural features. The noise is particularly evident on the earlier channels - Ch10-5 - as the channel width is too narrow to allow the 50Hz powerline transmission to be adequately stacked out (see Appendix E). Note that the powerline is not the source of all the noise present on the profiles in Appendix A. The very resistive geological setting is also a contributor as discussed above and in Appendix F.

The Sigdal Grid and the survey stations located on lakes were established with bamboo pickets. For all other survey stations, flagging tape was used to demarcate the stations. The LGL crew retrieved the flagging tape from all the survey stations along the portions of the lines that were read. The LGL crew also retrieved the flagging tape used to demaracate the loop locations were possible, and assisted Falconbridge personnel in retrieving the bamboo pickets when available.

Surveying was completed on April 7th and Loop 7 at Storebraten and Loop 8 at Soknadalen were picked-up. The following day the LGL crew picked-up Loop 6 at Langedalen, and began packing the UTEM gear and transferring the wire back onto the factory spools in preparation for demobilization. The equipment was transported to Gardemoen Airport on April 10th by Falconbridge and LGL personnel, and the crew demobilized from Oslo the same day. The crew flew from Oslo to London, England where T. Pinkerton flew directly back to Ottawa, Canada and the remaining crew went on vacation. Details of the daily production and personnel are included in the Production Log (Appendix B) along with a summary of production.

The survey equipment consisted of two UTEM 3 receivers and one UTEM 3 transmitter as well as all necessary accessories, support equipment and backup equipment. Data was reduced on a field computer (Macintosh) and UTEM profiles and digital data were made available/emailed to the client's personnel on a daily basis. The weather during the survey was good, with the abundance of snow making access on the grids by snowmobile, and snowshoes very easy.

SURVEY RESULTS

The results of the survey are summarized and presented as UTEM profiles in Appendix A. The survey Grids and Loop Locations are presented in Figures 2 through 8. Overall the data quality is good - though in places it is noisy. Evidence of conductors and/or conductive features are evident in the profiles, particularly the profiles near the old mine workings. Magnetic anomalies are also present in many profiles from the various grids. The affect of magnetic anomalies on the UTEM system are discussed in Appendix D. Although every effort was taken to shelter the receiver coil, minor wind noise may be evident in some profiles.

Surface profiles are listed by Grid and Loop number and presented as 3-axis profiles in the following order:

Hz	**continuous norm**	*Ch1 reduced*	**(blue separator)**
Hz	**point normalized**	*Ch1 reduced*	**(pink separator)**

A description of the standard plotting formats used and of the UTEM System is presented in Appendix C.

<u>Outline of surface profile types</u>

Hz continuous norm *Ch1 reduced* **(blue separator)**

Continuous normalization is useful for detection of the presence of anomalies at any position on a profile. The anomaly shape is distorted by the normalization to the local field. As the field gets very big near the wire the continuously normalized Ch1 tends towards zero.

top axis - Ch5-10
middle axis - Ch2-5
bottom axis - Ch1
bottom axis - topography - no vertical exaggeration

Hz point normalized *Ch1 reduced* **(pink separator)**

normalization point:	Loop 01	all lines	~300m out from the loop-front centre
	Loop 01B	all lines	~centre of the loop
	Loop 02	all lines	~centre of the loop
	Loop 03	all lines	~centre of the loop
	Loop 05	all lines	~centre of the loop
		in-loop lines	~centre of the loop
		off-loop lines	~300m out from the loop-front centre
	Loop 06	all lines	~centre of the loop
		in-loop lines	~centre of the loop
		off-loop lines	~300m out from the loop-front centre
	Loop 07	all lines	~centre of the loop
	Loop 08	all lines	~centre of the loop

Point normalized data is useful for interpretation purposes. Anomaly shape is preserved as is the amplitude if the normalization point is local to the anomaly.

The data collected entirely outside of the loop (Loop 01), and the outside of the loop lines from Loops 05 and 06, have been point normalized to the field at a point ~300m out from the centre of the loop front. Note that this field value is intermediate and it was chosen because the survey was performed inside-the-loop and outside-the-loop. Normalizing to an intermediate point allows the interpretation of responses along the entire line. The amplitude of responses close to (**further from**) the loop front will be blown up (**muted**).

All the data collected inside of the loop (Loops 01B, 02, 03, 05, 06, 07, 08), and the data collected inside and outside of the loop (Loops 05 and 06), have been normalized to a point at the centre of the loop. This field value is the smallest field value inside the loop and is a standard field value used for plotting, when surveying from inside the loop.

Loops 05 and 06 have been separated into off-loop and in-loop profiles, in addition to full profiles, using point normalization field values explained above.

The disadvantage of point normalization is that small errors in location near the wire and in current tend to appear as large errors in Ch1. If the loop/station locations and the current are accurately known then point normalized Ch1 (in the absence of a local conductor) will tend to be continuous approaching the wire - unlike the continuously normalized Ch1 which, as described above, will dip to zero.

top axis - Ch5-10
middle axis - Ch2-5
bottom axis - Ch1
bottom axis - topography - no vertical exaggeration

Discussion of the Results

The profiles presented in Appendix A have been corrected for errors in loop position and station/coil position. These corrections were performed to account for the near wire geometric effects seen in some of the profiles. The corrections were performed only on the easting and northing coordinates and did not include any elevation corrections. Therefore, some elevation errors may still be present in the profiles. The loop position corrections involved adjustments of less than 5m to account for errors between the GPS stations and the final wire position. The station/coil position corrections involved adjustments of less than 2m to account for errors between the GPS stations and the coil positions. The station/coil position corrections were restricted to stations within 100m of the loop wire so any magnetic features present in the data set would not be enhanced or diminished by these corrections. Geometric errors may still be present in the profiles, particularly the profiles from lines running parallel and within 200m of the loop edges.

The Ertelien Project area is very resistive, and the noise levels proved to be high and in places, along certain geologic structures, extremely high. Higher noise levels in the vertical component are typical of very resistive areas. Locally noisy areas can indicate some channeling of telluric currents along features in the very-resistive country rock. Further discussion of the noise levels encountered in the project area is presented in Appendix F.

The off-loop data from Loop 01 at the Sigdal Grid is noisy-to-very-noisy once the distance to the loop front exceeds 200-300m. The in-loop configuration (Loop 01B) and higher pre-whitening level enhanced the received signal, thereby reducing stacking times. The in-loop configurations used for the remaining grids improved the data quality and surveying time, however, in places near powerlines the data is still noisy.

On March 18th the transmitter clock was interrupted which resulted in the days data being collected with the clocks not synchronized. Channels 6 to 10 were affected on Line 10100N from stations 4350E to 4775E, Line 9400N from stations 4350E to 4700E and Line 9500N from stations 4350E to 4500E and 4700E to 5050E. These profiles are presented in Appendix A with different plotting scales.

The operators noticed that the noise levels from the powerlines varied from day to day, as well as, varying during the day. This was quite evident on Line 4350N from Loop 08 at the Soknadalen Grid. The first 100m of this line was read on Thursday, April 6th and the remaining 475m was read on Friday, April 7th. Station 5725E along Line 4350N was read on both days with the April 7th data being unable to repeat the April 6th data after a doubling in stacking time and repeat readings being taken. The difference in noise levels from April 6th to the 7th is evident in the profiles.

CONCLUSIONS AND RECOMMENDATIONS

The results of the survey are summarized and presented as UTEM profiles in Appendix A. The final Grid and Loop Locations are presented in Figures 2 through 7. Overall the data quality is good - though in places it is noisy. The area surveyed is very resistive, and cultural noise was present on many of the grids. This contributed to the elevated noise levels seen in the profiles, and is discussed further in Appendix F.

The profiles presented in Appendix A have been reduced with the grids corrected as well as possible using available information. The location of all survey points and loop locations were collected using a GPS system. The accuracy of the GPS system was quite high, however small errors still remain in loop locations and station/coil locations. In addition, the grid corrections did not include elevation corrections and some elevation errors may remain in the data.

In terms of logistics the survey ran quite smoothly. The Falconbridge Ltd. employees were extremely helpful and their hard work was greatly appreciated.

Appendix A

0612 UTEM Profiles

UTEM 3 Survey

Ertelien Project
Norway

for

A/S Sulfidmalm

Presentation

The results of the survey are summarized and presented as UTEM profiles in Appendix A. The final Grids and Loop Locations are presented in Figures 2. Overall the data quality is good - though in places it is noisy. Evidence of conductors and/or conductive features are evident in the profiles, particularly the profiles near the old mine workings. A description of the standard plotting formats used and of the UTEM System is presented in Appendix C.

The profiles are listed by Grid and Loop number and presented as 3-axis profiles in the order:

Hz continuous norm *Ch1 reduced* **(blue separator)**
Hz point normalized *Ch1 reduced* **(pink separator)**

Outline of surface profile types

Hz continuous norm *Ch1 reduced* **(blue separator)**

Continuous normalization is useful for detection of the presence anomalies at any position on a profile. The anomaly shape is distorted by the normalization to the local field. As the field gets very big near the wire the continuously normalized Ch1 tends towards zero.

top axis - Ch5-10
middle axis - Ch2-5
bottom axis - Ch1
bottom axis - topography - no vertical exaggeration

Hz point normalized *Ch1 reduced* **(pink separator)**

normalization point:	Loop 01	all lines	~300m out from the loop-front centre
	Loop 1B	all lines	~centre of the loop
	Loop 02	all lines	~centre of the loop
	Loop 03	all lines	~centre of the loop
	Loop 05	all lines	~centre of the loop
		in-loop lines	~centre of the loop
		off-loop lines	~300m out from the loop-front centre
	Loop 06	all lines	~centre of the loop
		in-loop lines	~centre of the loop
		off-loop lines	~300m out from the loop-front centre
	Loop 07	all lines	~centre of the loop
	Loop 08	all lines	~centre of the loop

Point normalized data is useful for interpretation purposes. Anomaly shape is preserved as is the amplitude if the normalization point is local to the anomaly.

The data collected entirely outside of the loop (Loop 01), and the outside of the loop lines from Loops 05 and 06, have been point normalized to the field at a point ~300m out from the centre of the loop front. Note that this field value is intermediate and it was chosen because the survey was performed inside-the-loop and outside-the-loop. Normalizing to an intermediate point allows the interpretation of responses along the entire line. The amplitude of responses close to (**further from**) the loop front will be blown up (**muted**).

All the data collected inside of the loop (Loops 01B, 02, 03, 05, 06, 07, 08), and the data collected inside and outside of the loop (Loops 05 and 06) have been normalized to a point at the centre of the loop. This field value is the smallest field value inside the loop and is a standard field value used for plotting, when surveying from inside the loop.

Loops 05 and 06 have been separated into off-loop and in-loop profiles, in addition to full profiles, using point normalization field values explained above.

The disadvantage of point normalization is that small errors in location near the wire and in current tend to appear as large errors in Ch1. If the loop/station locations and the current are accurately known then point normalized Ch1 (in the absence of a local conductor) will tend to be continuous approaching the wire - unlike the continuously normalized Ch1 which, as described above, will dip to zero.

top axis - Ch5-10
middle axis - Ch2-5
bottom axis - Ch1
bottom axis - topography - no vertical exaggeration

List of Data Collected and Plotted

Ertelien Project 2006 Grids

Surface coverage - @ 3.251 Hertz

	Line	coverage	
Loop 01	Line 9400N	4350E - 5050E	700m
Sigdal	Line 9500N	4350E - 4500E	150m
		4700E - 5050E	350m
	Line 9600N	4350E - 5050E	700m
	Line 9650N	4350E - 5050E	700m
	Line 9700N	4350E - 5050E	700m
	Line 9750N	4350E - 5050E	700m
	Line 9800N	4350E - 5050E	700m
	Line 9850N	4350E - 5050E	700m
	Line 9900N	4350E - 5050E	700m
	Line 10100N	4350E - 5050E	700m
	Sigdal Grid	Loop 01 Total	6800m
Loop 01B	Line 9650N	4575E - 5075E	500m
Sigdal	Line 9700N	4575E - 5075E	500m
	Line 9750N	4575E - 5075E	500m
	Line 9800N	4575E - 5075E	500m
	Line 9850N	4575E - 5075E	500m
	Line 9900N	4575E - 5075E	500m
	Line 9950N	4575E - 5050E	475m
	Sigdal Grid	Loop 01B Total	3475m
Loop 02	Line 8900N	7850E - 8200E	350m
Ertelien Mine	Line 9000N	7850E - 8425E	575m
	Line 9100N	7850E - 8425E	575m
	Line 9200N	7850E - 8425E	575m
	Line 9300N	7850E - 8450E	600m
	Line 9400N	8100E - 8450E	350m
	Line 9500N	7925E - 8450E	525m
	Line 9600N	7475E - 7800E	325m
		7900E - 8400E	500m
	Line 9650N	7950E - 8450E	500m
	Line 9700N	7425E - 7825E	400m
		8000E - 8450E	450m
	Line 9750N	8000E - 8450E	450m
	Line 9800N	7425E - 7825E	400m
		8000E - 8450E	450m
	Line 9900N	7450E - 8450E	1000m
	Ertelien Mine	Loop 02 Total	8025m

List of Data Collected and Plotted

Ertelien Project 2006 Grids

Surface coverage - @ 3.251 Hertz

	Line	coverage	
Loop 03	Line 5000N	9450E - 10200E	750m
Ulleren	Line 5100N	9450E - 10200E	750m
	Line 5200N	9450E - 10200E	750m
	Line 5300N	9450E - 10200E	750m
	Line 5400N	9450E - 10200E	750m
	Line 5500N	9450E - 10225E	775m
	Line 5600N	9450E - 10200E	750m
	Line 5700N	9450E - 10200E	750m
	Line 5800N	9450E - 10200E	750m
	Line 5900N	9450E - 10225E	775m
	Line 6000N	9450E - 10225E	775m
	Line 6050N	9450E - 10225E	775m
	Line 6100N	9450E - 10225E	775m
	Line 6200N	9450E - 10225E	775m
	Line 6300N	9450E - 10200E	750m
	Ulleren	Loop 03 Total	11400m
Loop 05	Line 4600N	1500E - 2150E	650m
Langedalen	Line 4700N	1475E - 2175E	700m
	Line 4750N	1650E - 2100E	450m
	Line 4800N	1475E - 2175E	700m
	Line 4900N	1475E - 2175E	700m
	Line 5000N	1500E - 2175E	675m
	Line 5100N	1475E - 2175E	700m
	Line 5200N	1475E - 2175E	700m
		2225E - 2800E	575m
	Line 5250N	1475E - 2175E	700m
	Line 5300N	1450E - 2175E	725m
		2250E - 2800E	550m
	Line 5400N	1475E - 2175E	700m
		2225E - 2800E	575m
	Line 5500N	1500E - 2175E	675m
	Langedalen	Loop 05 Total	9775m

<u>List of Data Collected and Plotted</u>

Ertelien Project 2006 Grids

Surface coverage - @ 3.251 Hertz

	Line	coverage	
Loop 06	Line 3600N	2225E - 3025E	800m
Langedalen	Line 3700N	1650E - 2150E	500m
	Line 3800N	1475E - 2175E	700m
		2225E - 3025E	800m
	Line 3900N	1650E - 2150E	500m
	Line 4000N	1475E - 2175E	700m
		2250E - 3025E	775m
	Line 4100N	1500E - 2150E	650m
		2250E - 2900E	650m
	Line 4200N	1500E - 2150E	650m
		2250E - 2750E	500m
	Line 4300N	1475E - 2150E	675m
		2250E - 2575E	325m
	Line 4400N	1475E - 2175E	700m
	Line 4500N	1500E - 2150E	650m
	Langedalen	Loop 06 Total	9575m
Loop 07	Line 5800N	5425E - 5925E	500m
Storebraten	Line 5900N	5425E - 5950E	525m
	Line 5950N	5425E - 5950E	525m
	Line 6000N	5450E - 5950E	500m
	Line 6050N	5425E - 5975E	550m
	Line 6100N	5425E - 5950E	525m
	Line 6200N	5425E - 5950E	525m
	Storebraten	Loop 07 Total	3650m
Loop 08	Line 4200N	5625E - 6175E	550m
Soknadalen	Line 4300N	5625E - 6175E	550m
	Line 4350N	5625E - 6200E	575m
	Line 4400N	5650E - 6150E	500m
	Line 4450N	5650E - 6175E	525m
	Soknadalen	Loop 08 Total	2700m
	Ertelien **2006**	**Total**	**55.400km**

Ertelien Project
2006

Ertelien Project

Sigdal Grid

Loop 01

Hz

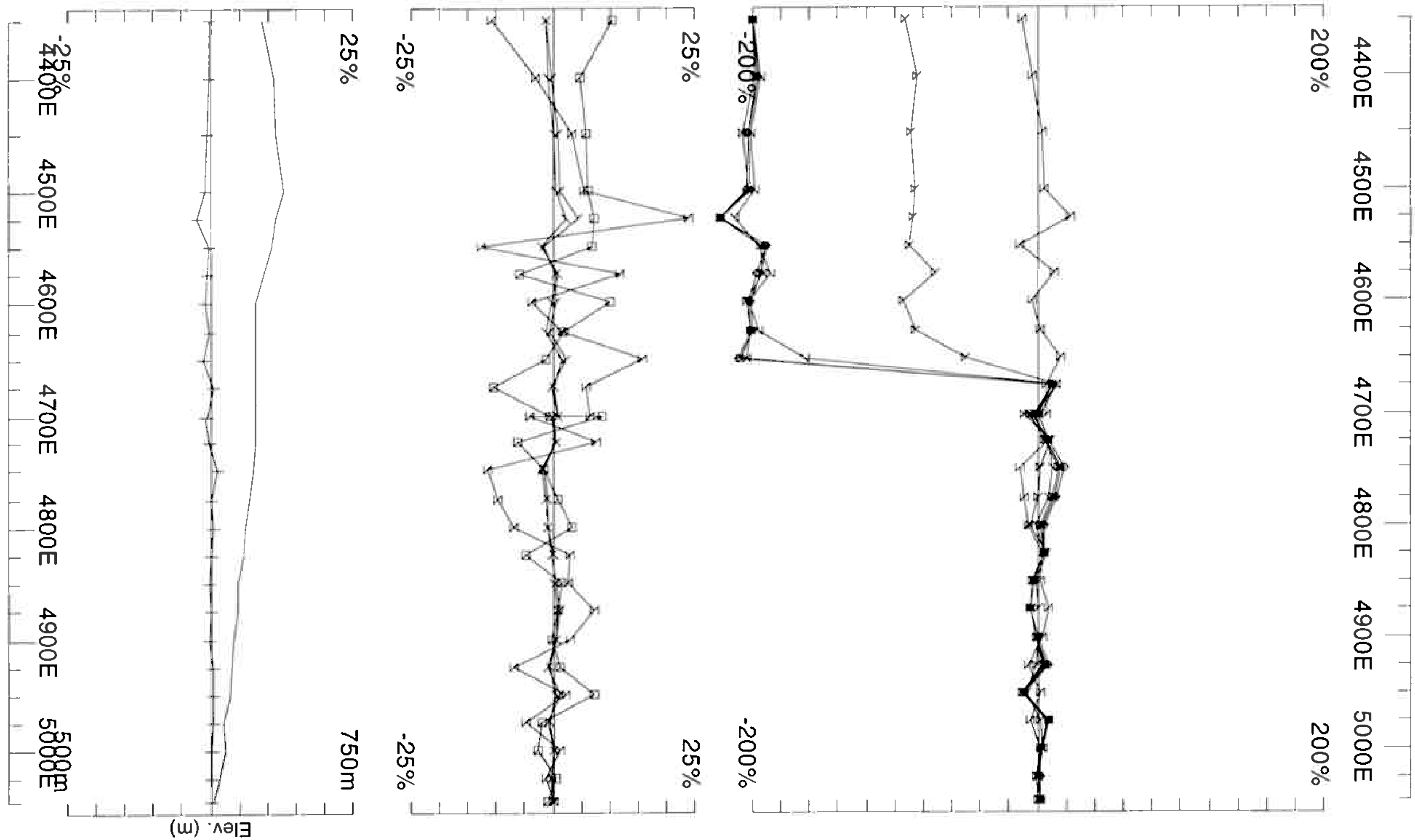
@3.251 Hz frequency

continuous norm

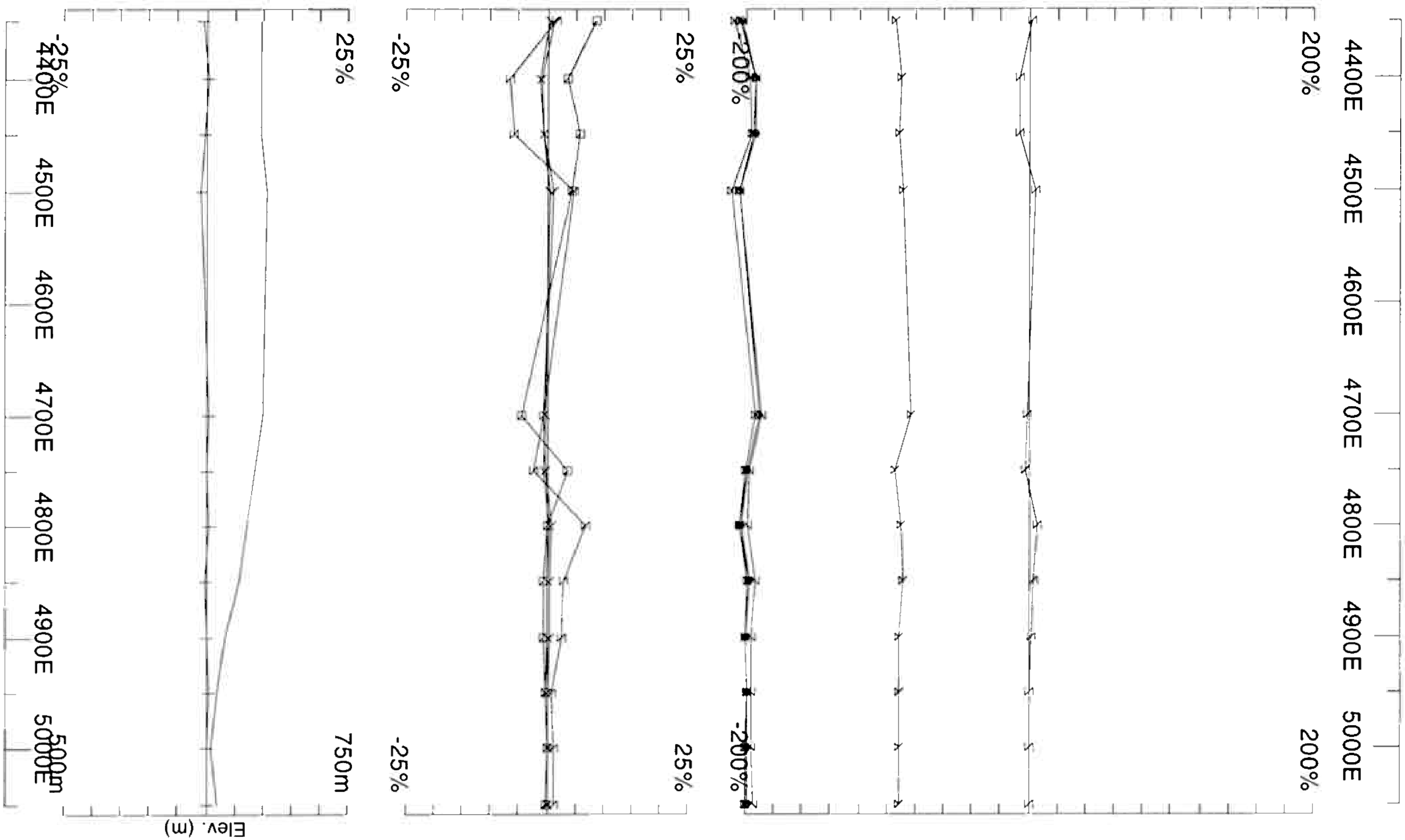
Ch1 reduced

Loop 01 Sigdal	Line 9400N	4350E - 5050E	700m	1:5000
	Line 9500N	4350E - 4500E	150m	1:5000
		4700E - 5050E	350m	
	Line 9600N	4350E - 5050E	700m	1:5000
	Line 9650N	4350E - 5050E	700m	1:5000
	Line 9700N	4350E - 5050E	700m	1:5000
	Line 9750N	4350E - 5050E	700m	1:5000
	Line 9800N	4350E - 5050E	700m	1:5000
	Line 9850N	4350E - 5050E	700m	1:5000
	Line 9900N	4350E - 5050E	700m	1:5000
	Line 10100N	4350E - 5050E	700m	1:5000
		Sigdal Grid Loop 01 Total	6800m	

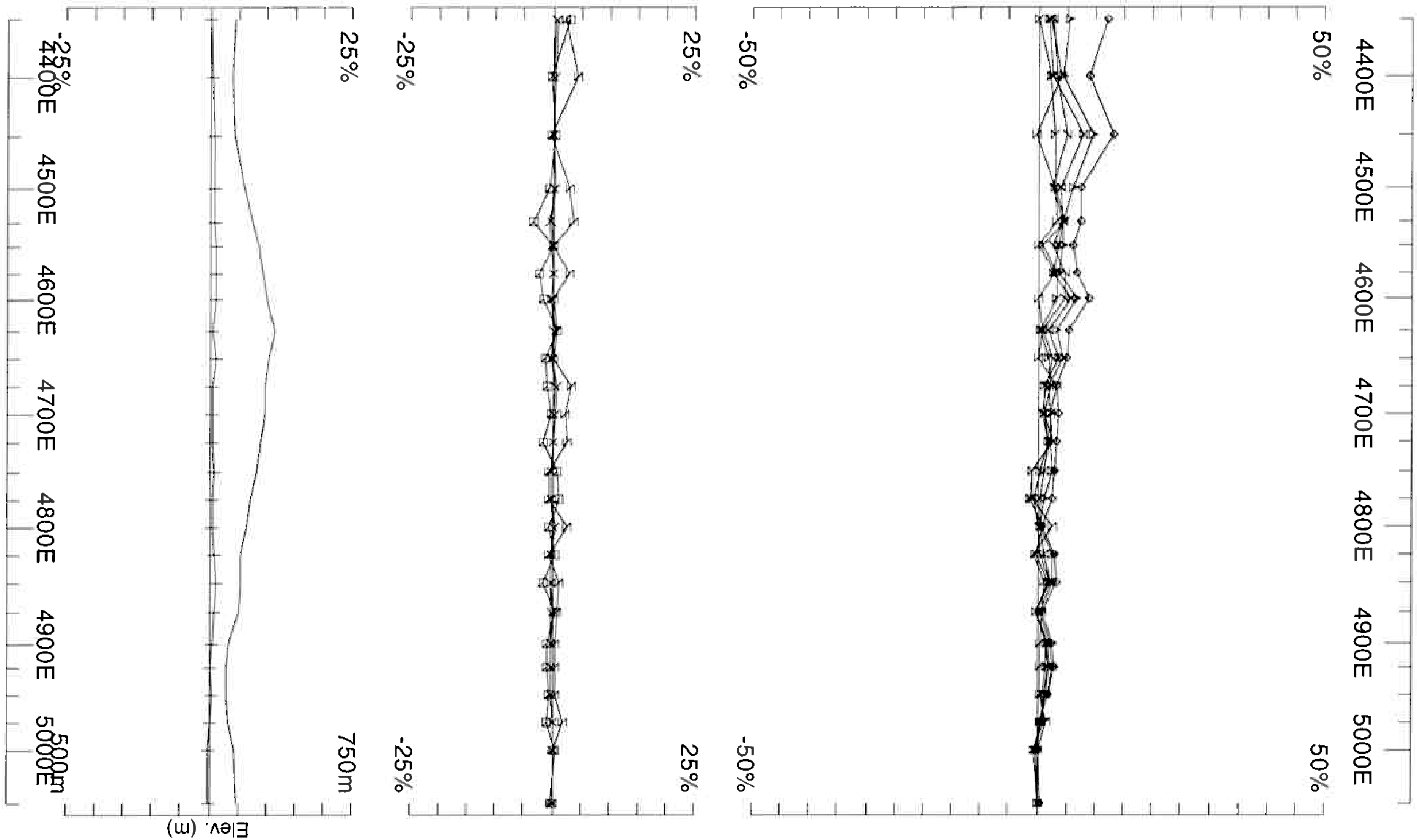
Loop 01 - continuous norm



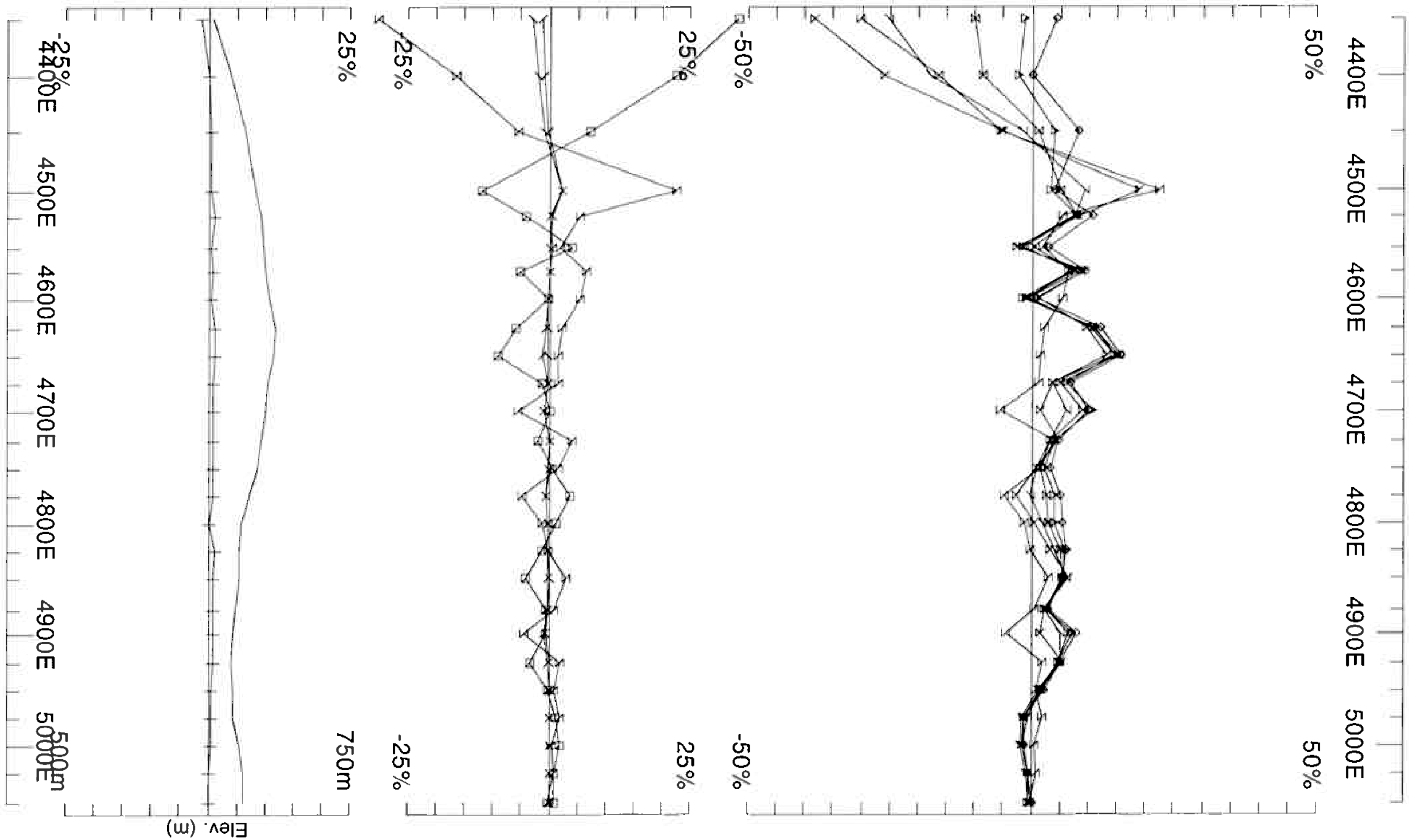
Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 17/3/6 Reduced : 26/5/6 Plotted : 12/6/6



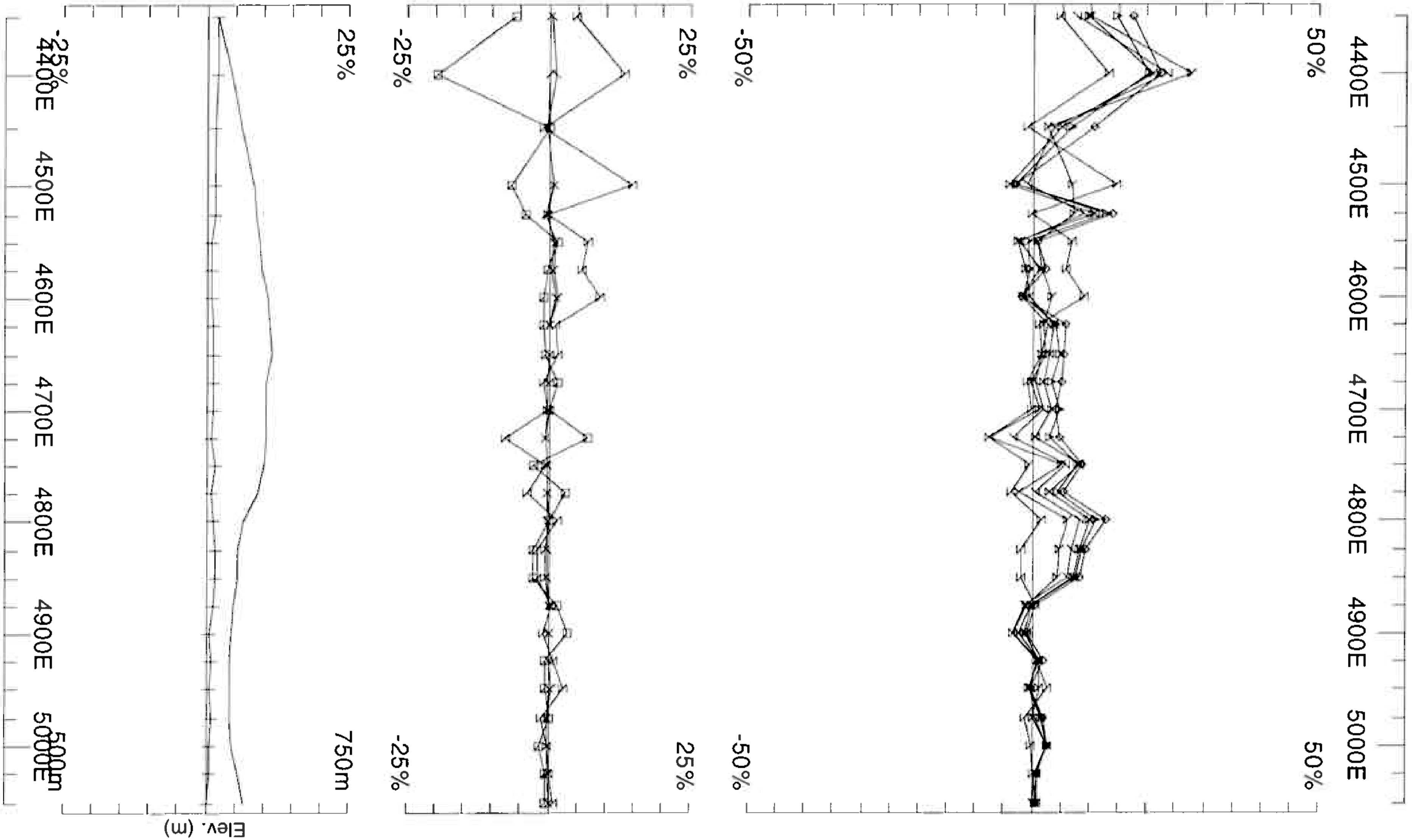
Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9500N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 19/3/6 Reduced : 19/3/6 Plotted : 12/6/6



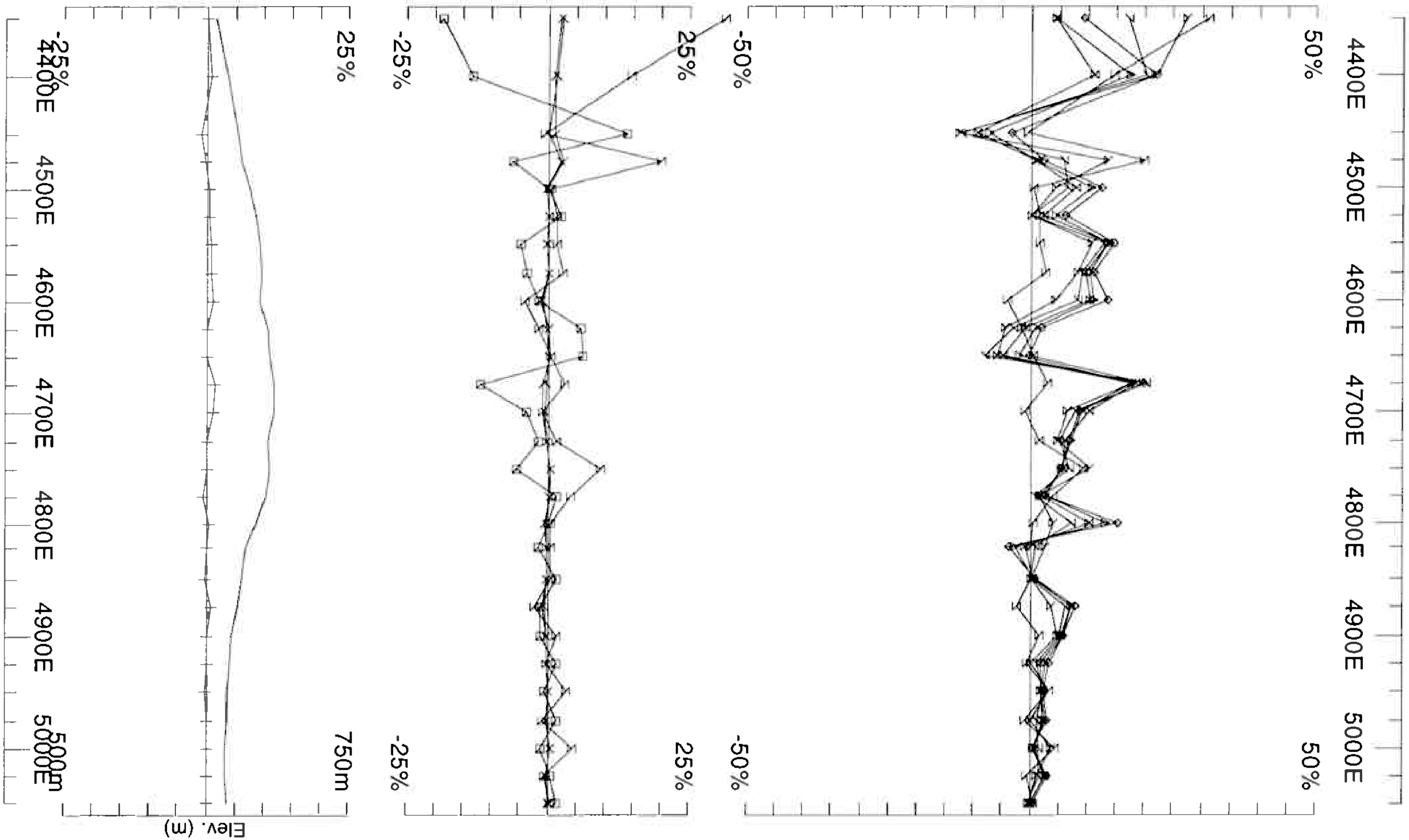
Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 19/3/6 Reduced : 9/6/6 Plotted : 12/6/6



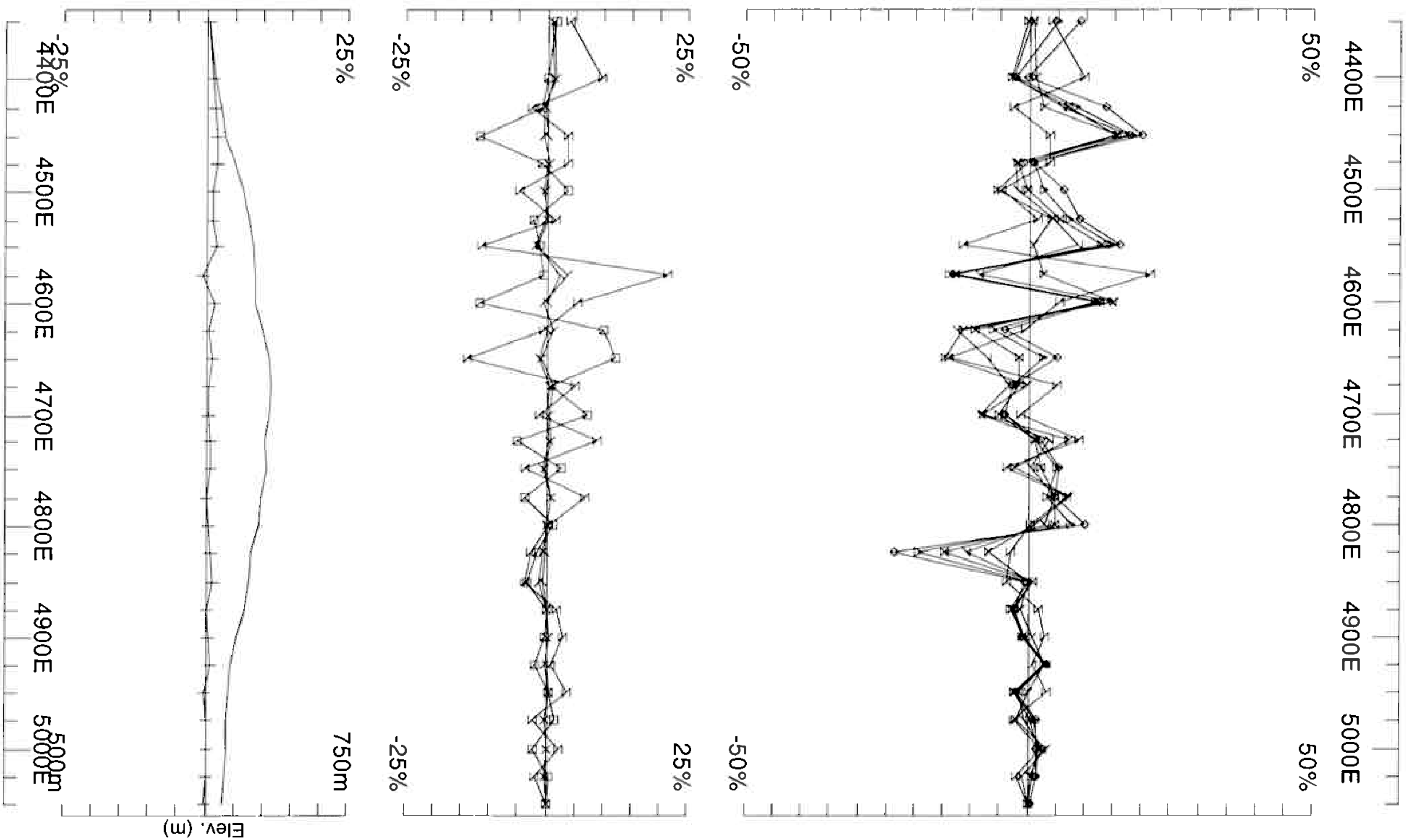
Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9650N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 20/3/6 Reduced : 9/6/6 Plotted : 12/6/6



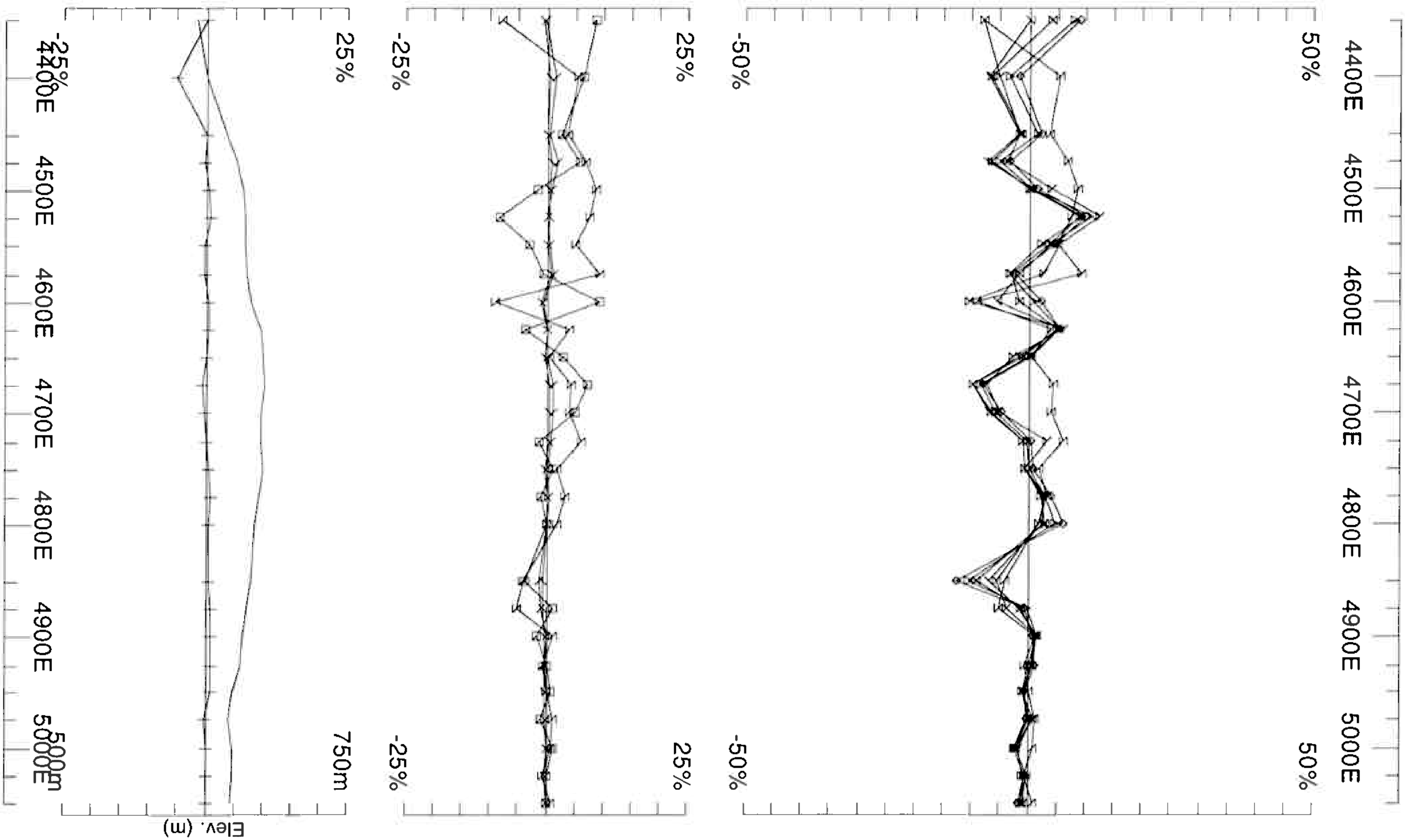
Loop: 01 Line: 9700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 20/3/6 Reduced : 9/6/6 Plotted : 12/6/6



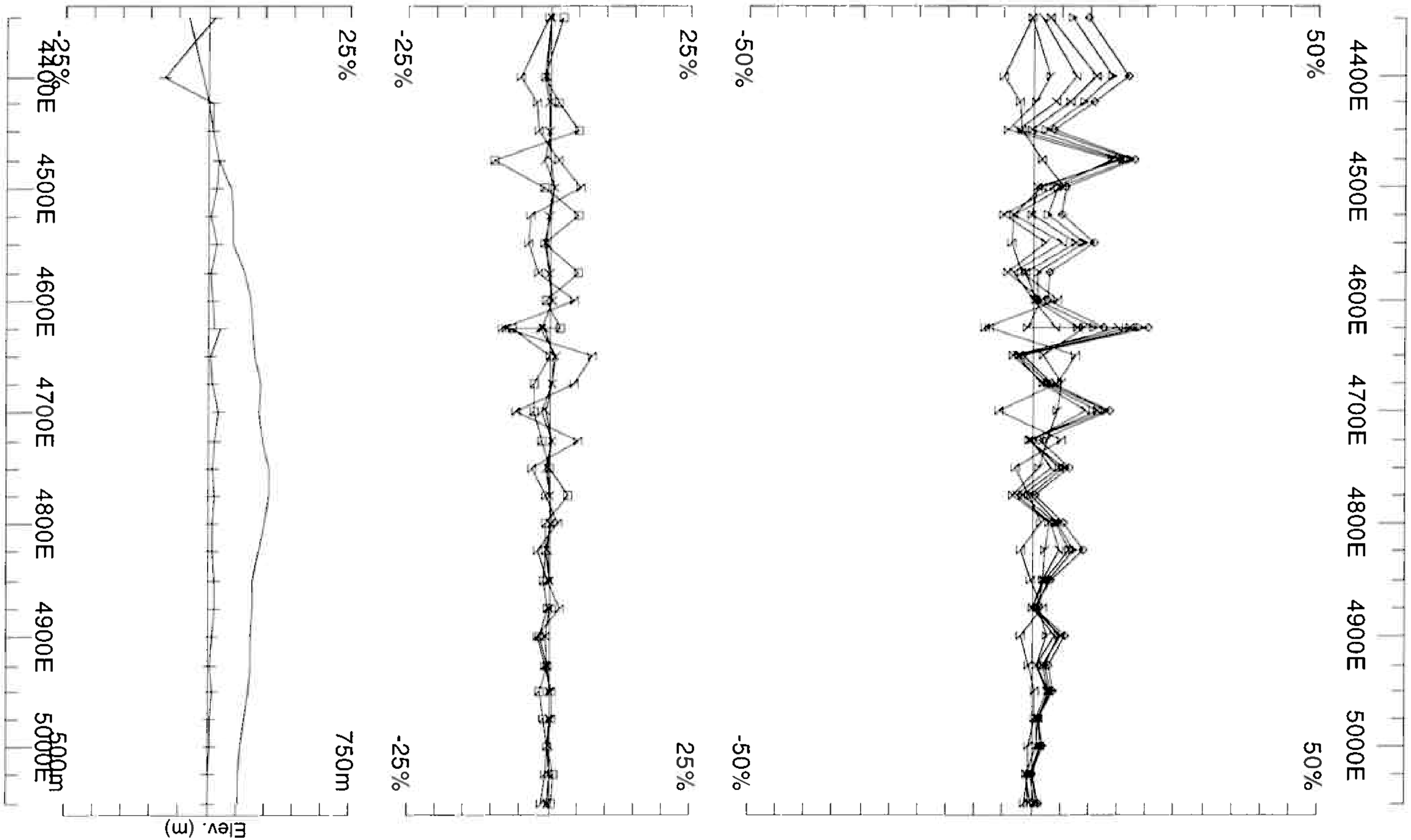
Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9750N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 22/3/6 Reduced : 9/6/6 Plotted : 12/6/6



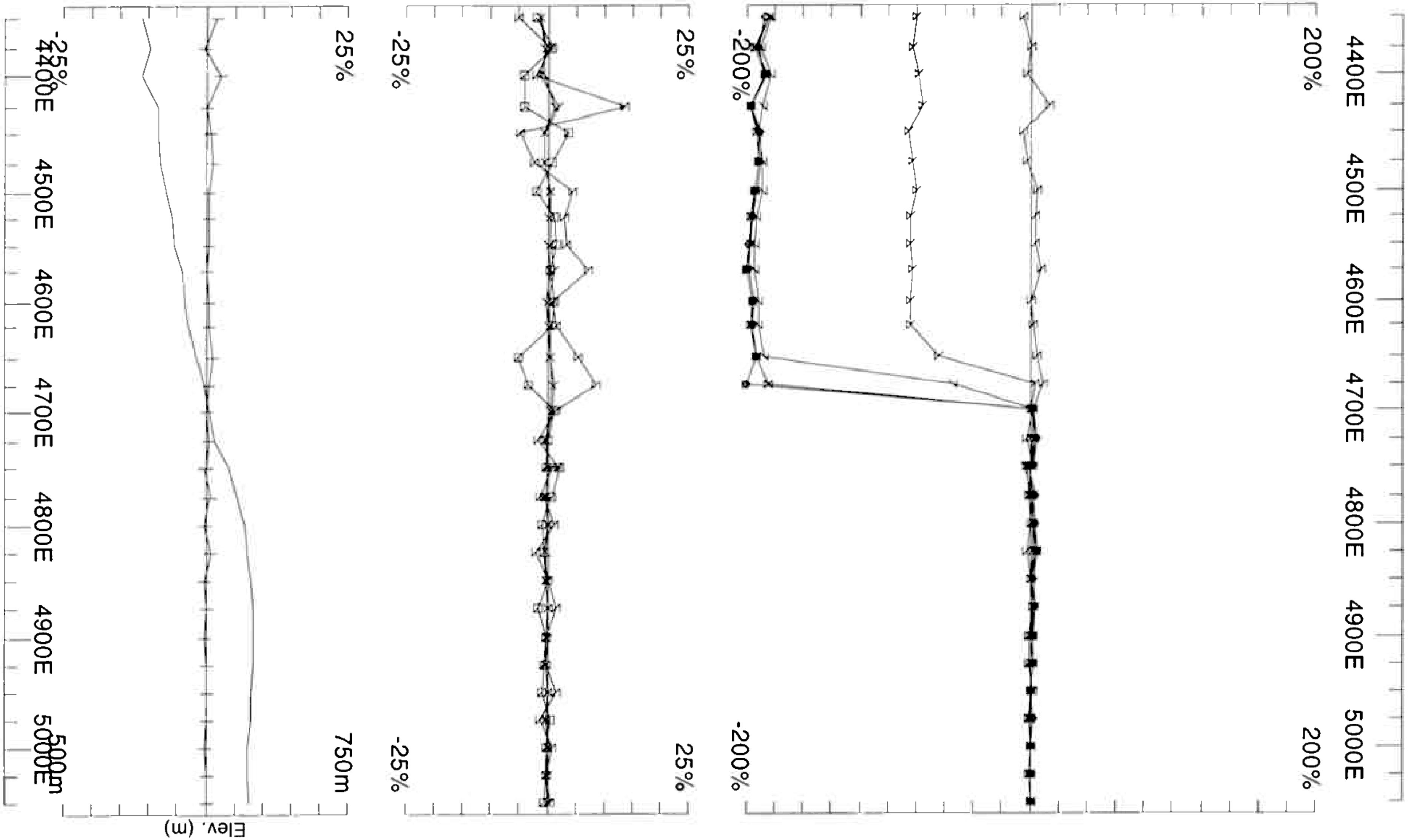
Loop: 01 Line: 9800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 22/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9850N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 21/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 21/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 10100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 17/3/6 Reduced : 26/5/6 Plotted : 12/6/6

Sigdal Grid

Loop 01B

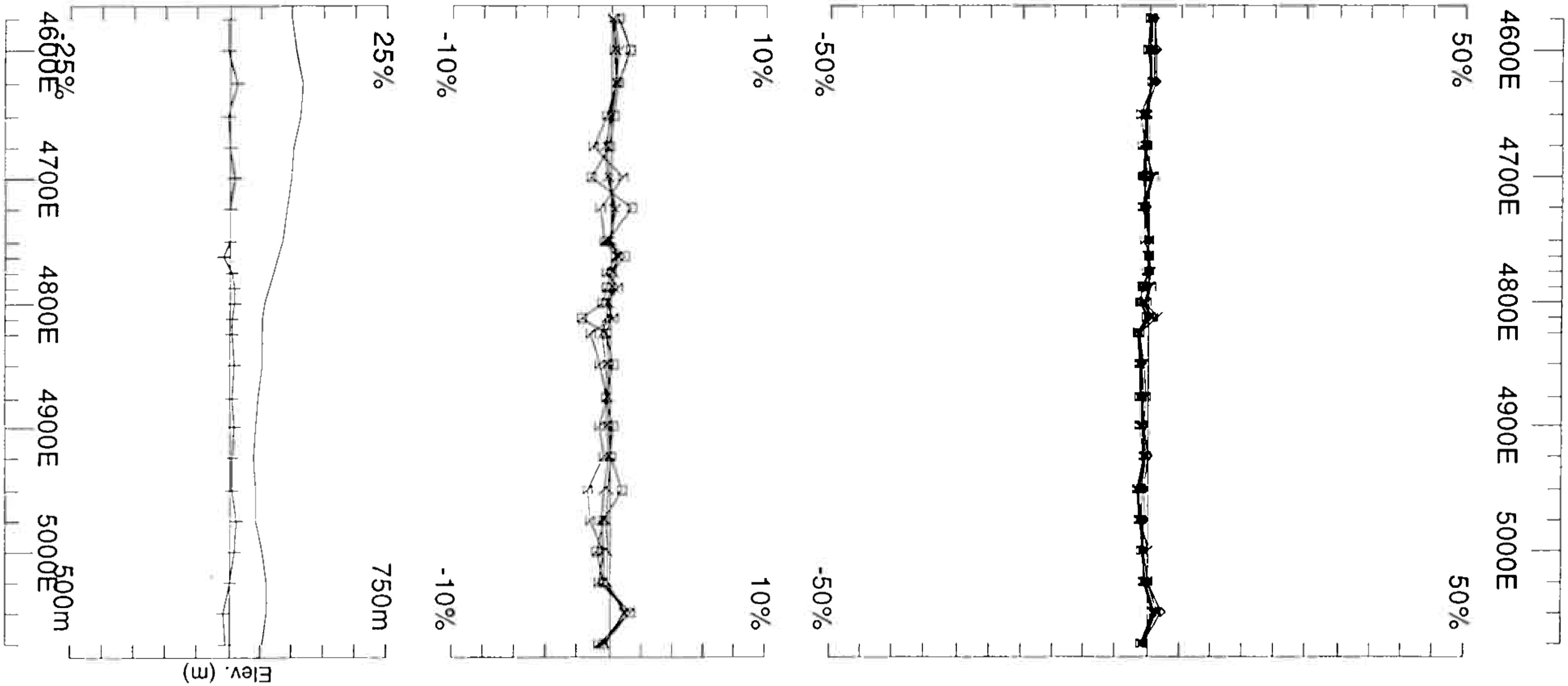
Hz
@3.251 Hz frequency

continuous norm

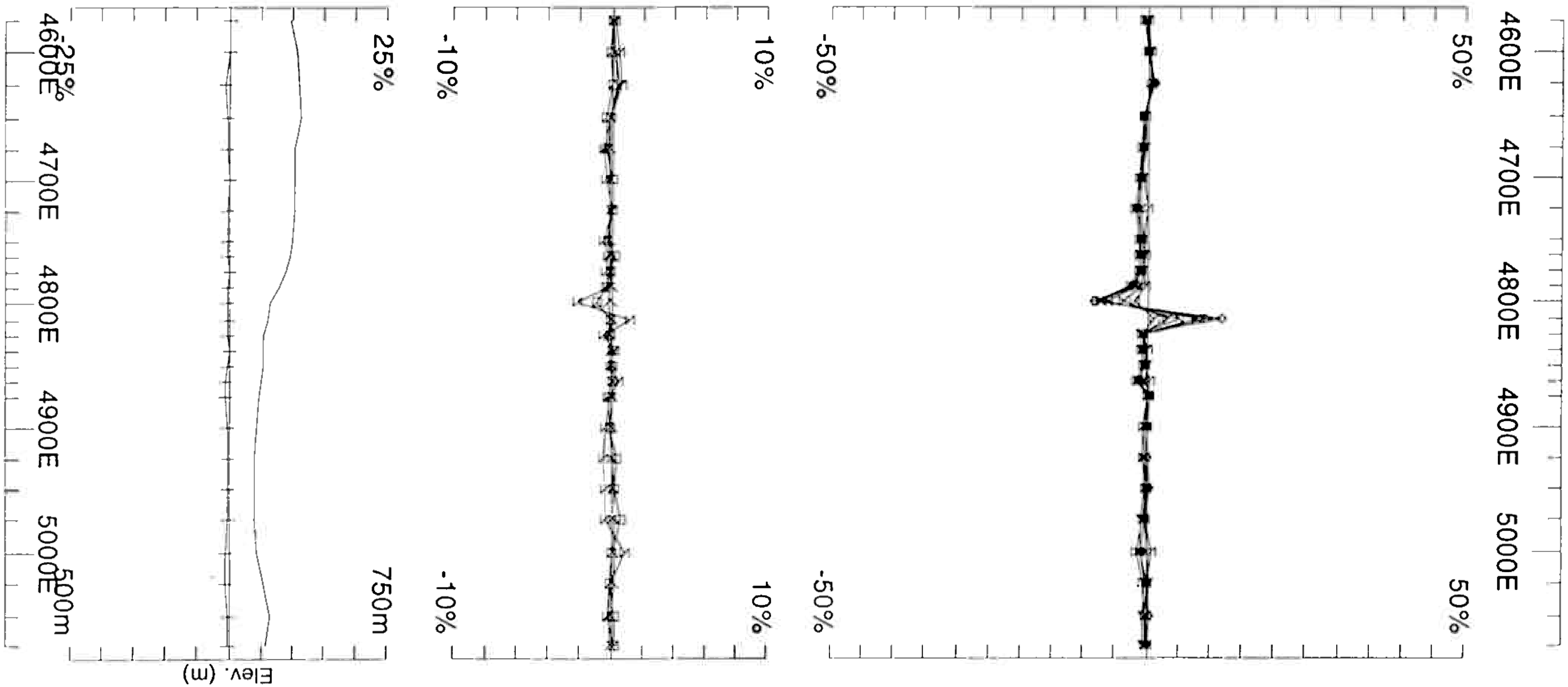
Ch1 reduced

Loop 01B Sigdal	Line 9650N	4575E - 5075E	500m	1:5000
	Line 9700N	4575E - 5075E	500m	1:5000
	Line 9750N	4575E - 5075E	500m	1:5000
	Line 9800N	4575E - 5075E	500m	1:5000
	Line 9850N	4575E - 5075E	500m	1:5000
	Line 9900N	4575E - 5075E	500m	1:5000
	Line 9950N	4575E - 5050E	475m	1:5000
	Sigdal GridLoop 01B Total		3475m	

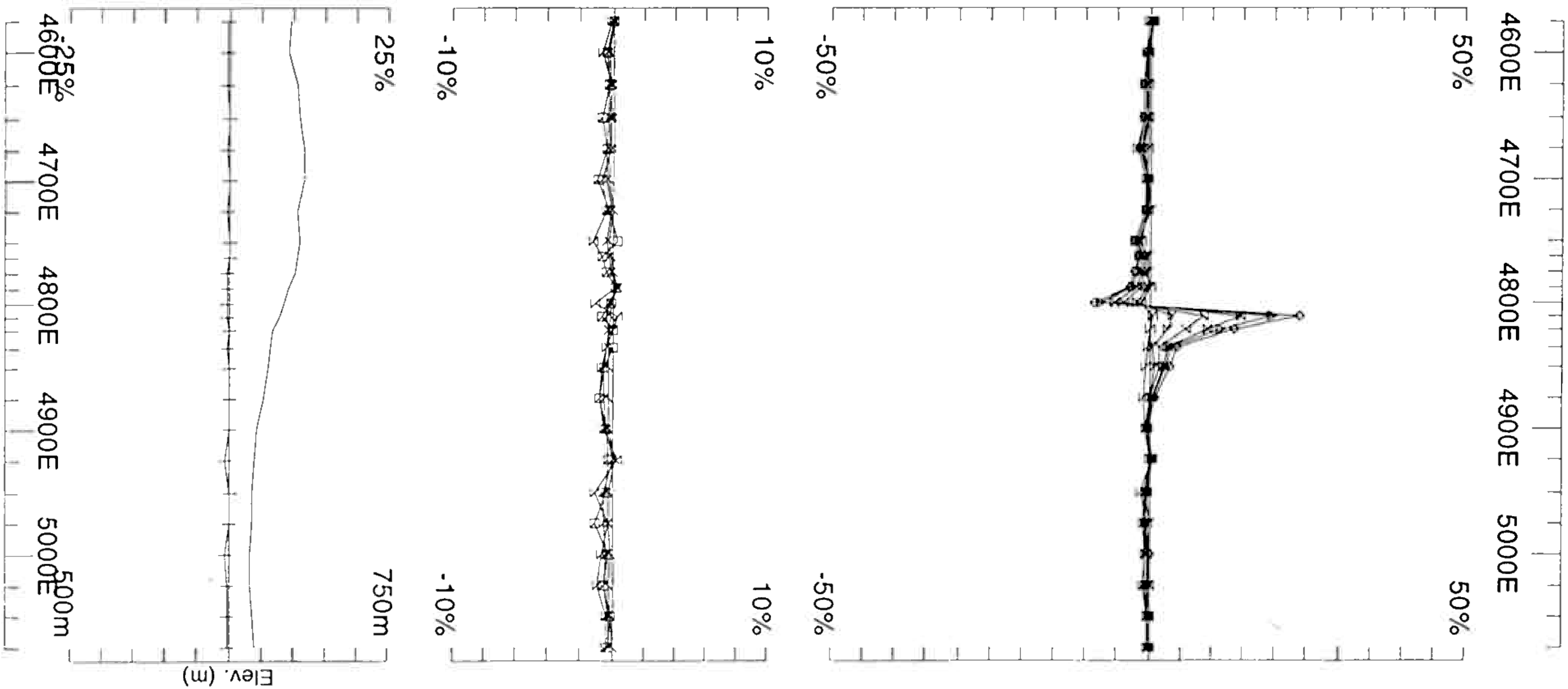
Loop 01B - continuous norm



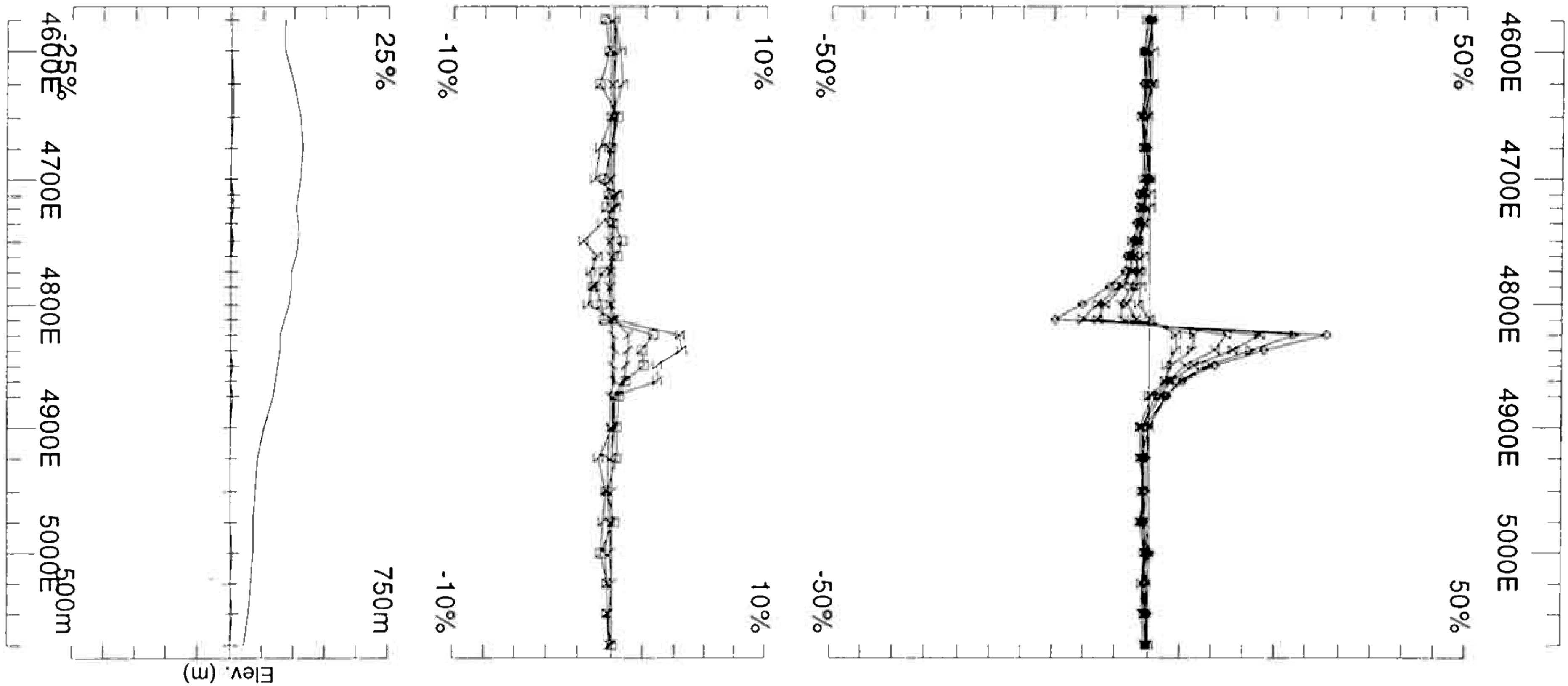
Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9650N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 24/3/6 Reduced : 29/5/6 Plotted : 12/6/6



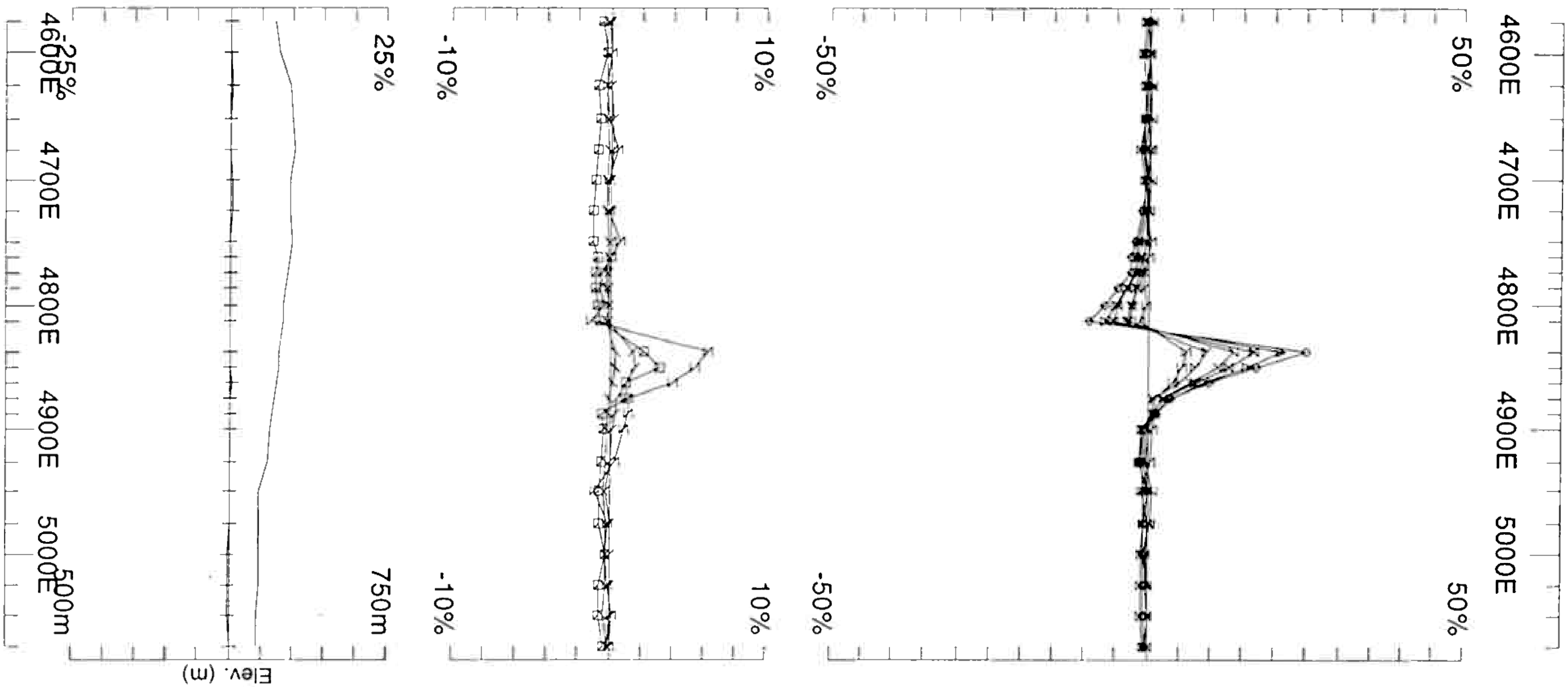
Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9700N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE — Job 0612 — Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



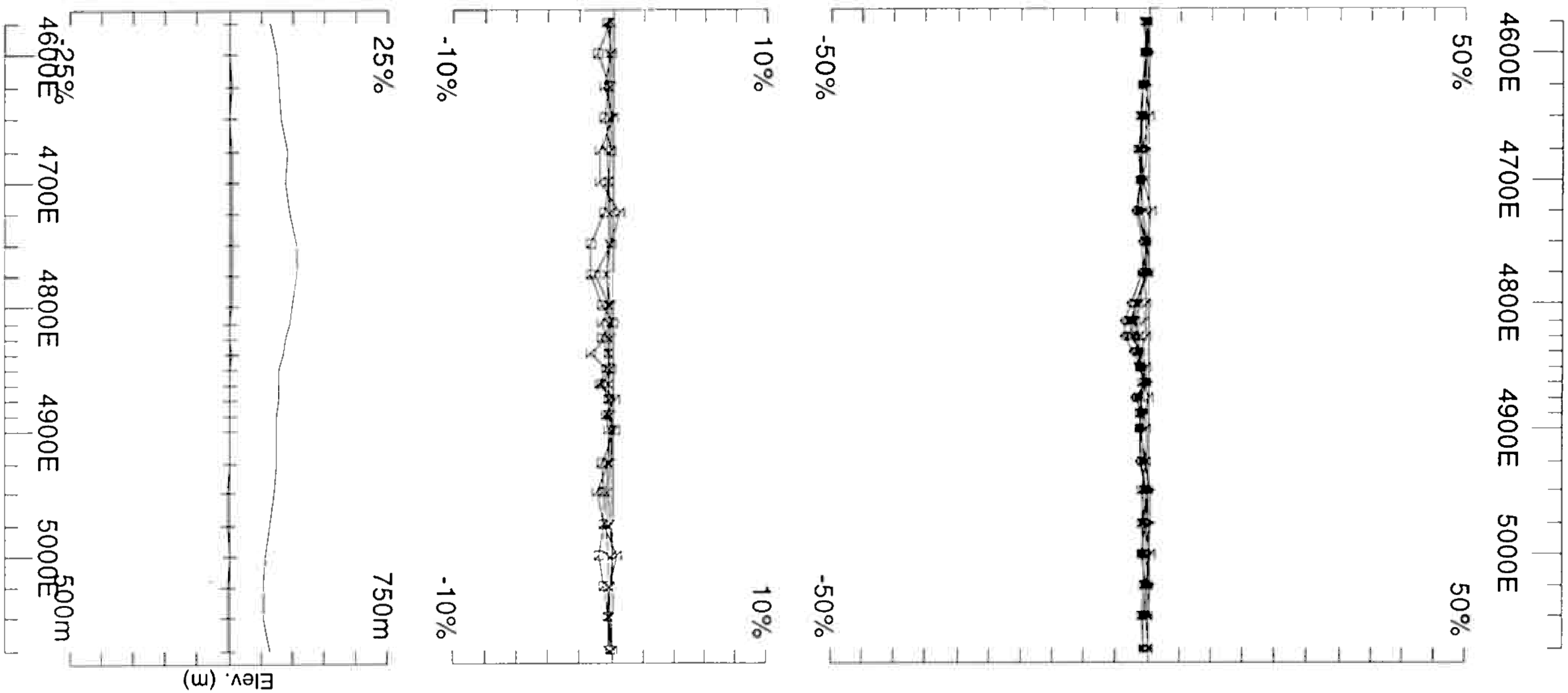
Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9750N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



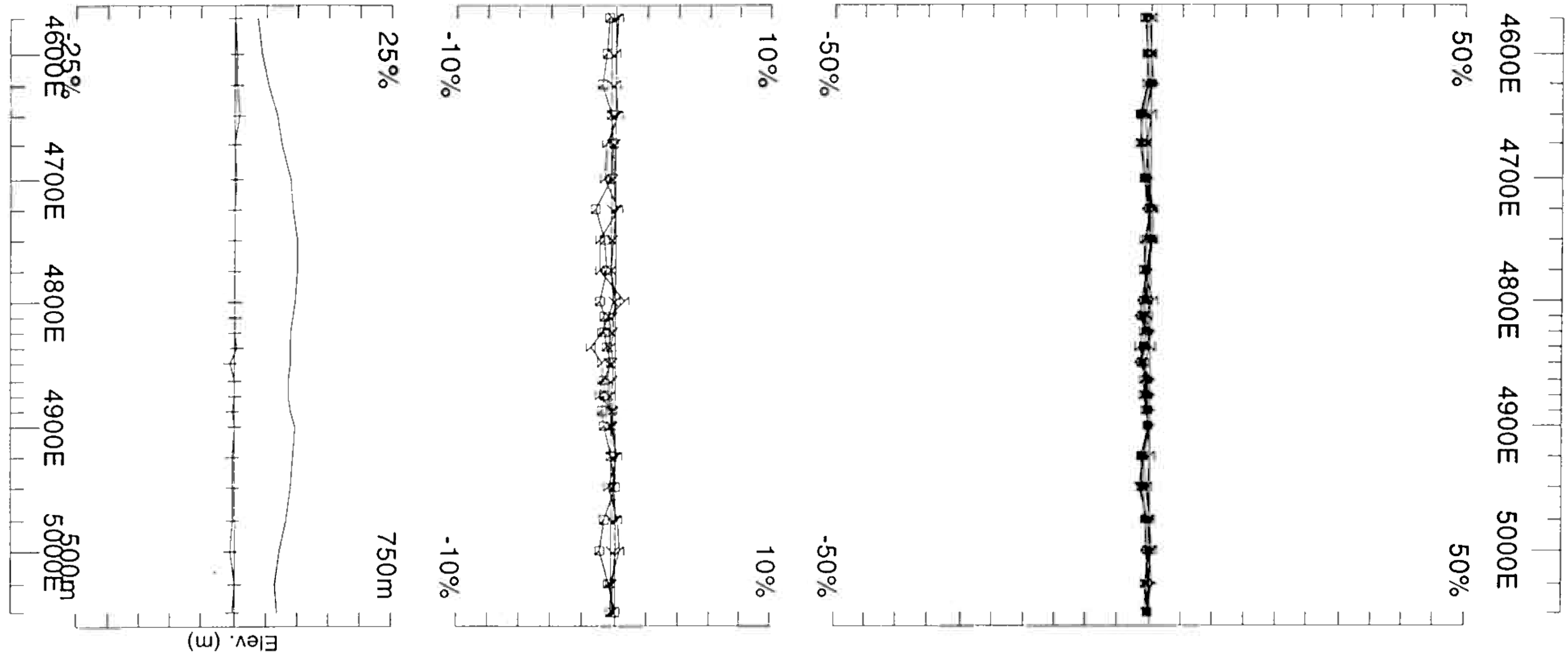
Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 24/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9850N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9950N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6

Ertelien Mine Grid

Loop 02

Hz

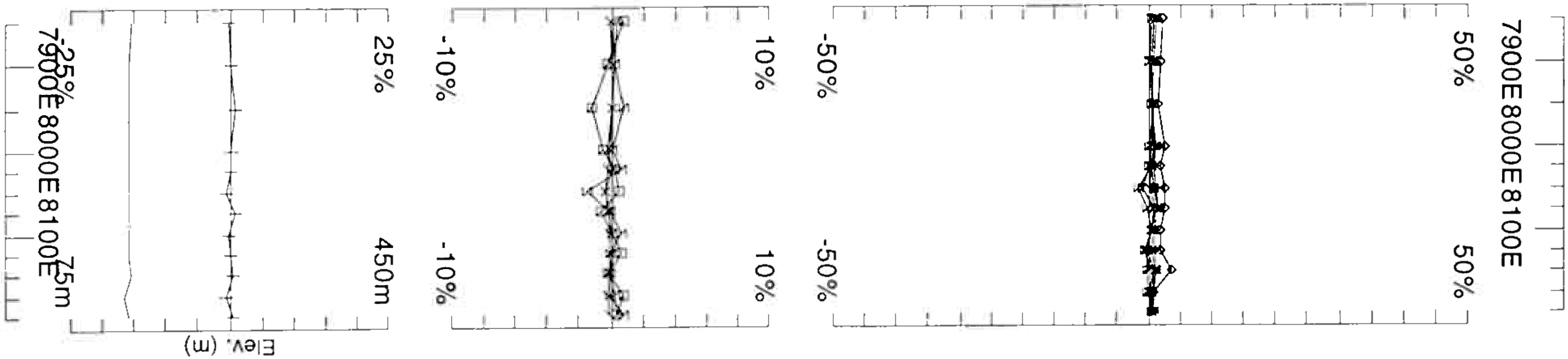
@3.251 Hz frequency

continuous norm

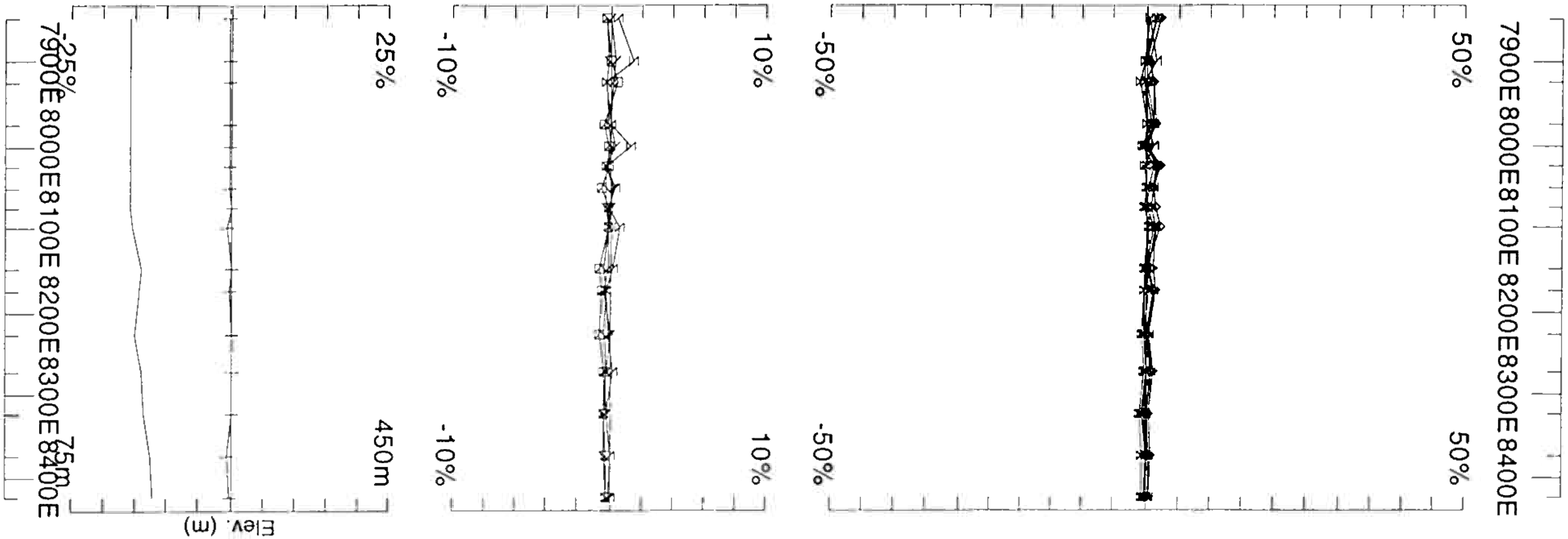
Ch1 reduced

Loop 02 Ertelien Mine	Line 8900N	7850E - 8200E	350m	1:7500
	Line 9000N	7850E - 8425E	575m	1:7500
	Line 9100N	7850E - 8425E	575m	1:7500
	Line 9200N	7850E - 8425E	575m	1:7500
	Line 9300N	7850E - 8450E	600m	1:7500
	Line 9400N	8100E - 8450E	350m	1:7500
	Line 9500N	7925E - 8450E	525m	1:7500
	Line 9600N	7475E - 7800E	325m	1:7500
		7900E - 8400E	500m	
	Line 9650N	7950E - 8450E	500m	1:7500
	Line 9700N	7425E - 7825E	400m	1:7500
		8000E - 8450E	450m	
	Line 9750N	8000E - 8450E	450m	1:7500
	Line 9800N	7425E - 7825E	400m	1:7500
		8000E - 8450E	450m	
	Line 9900N	7450E - 8450E	1000m	1:7500
	Ertelien Mine	Loop 02 Total	8025m	

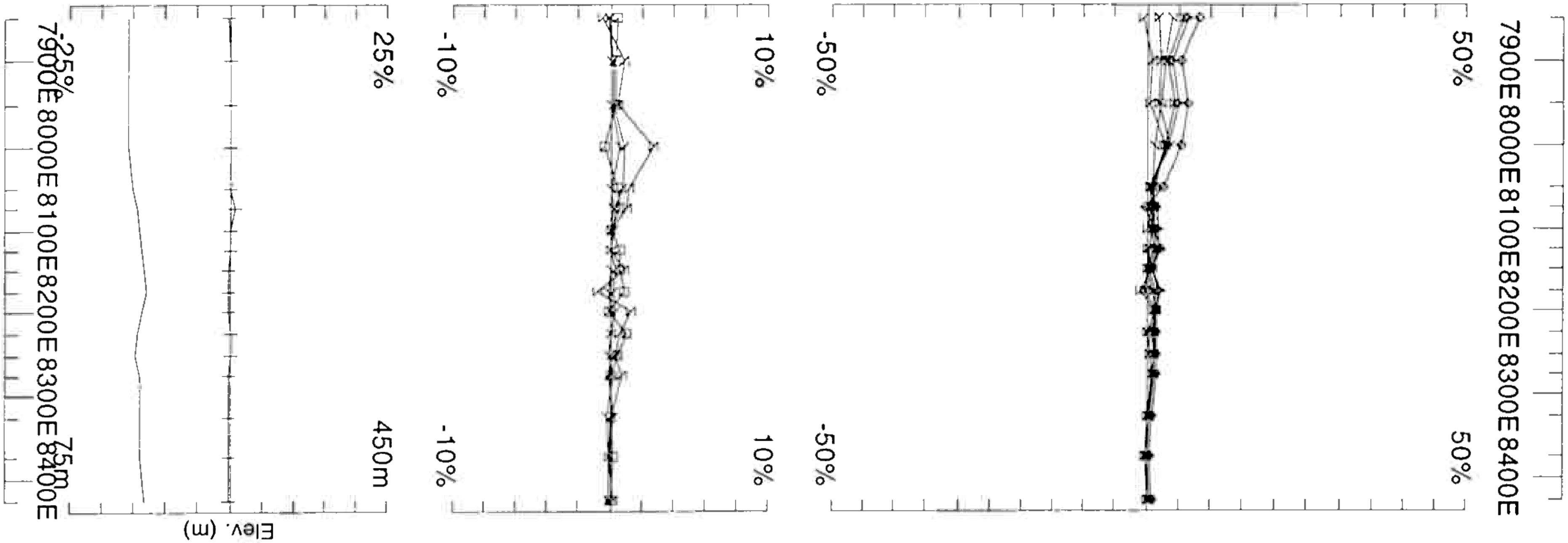
Loop 02 - continuous norm



Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 8900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02
Line: 9100N
Compt: Hz

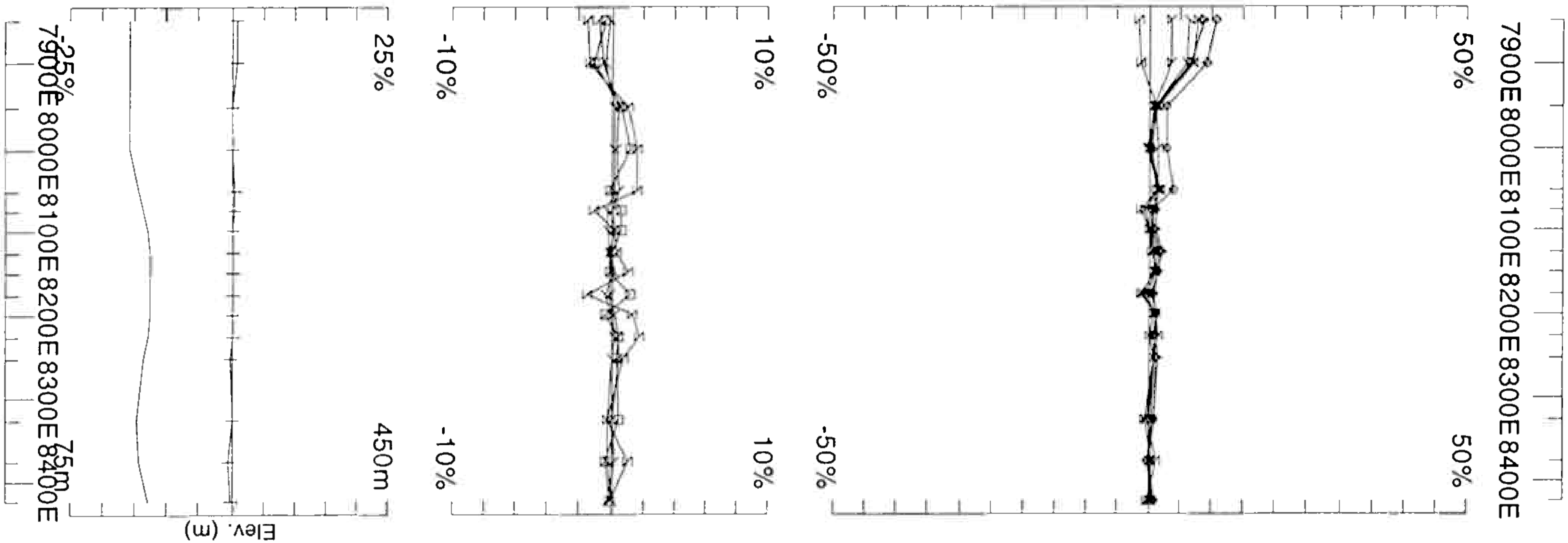
Secondary, (Chn - Ch1)/|Hp|
Contin. Norm at depth of 0 m
Base Freq. 3.251 Hz

UTEM Survey at: Ertelien Mine Grid
For: A/S Sulfidmalm

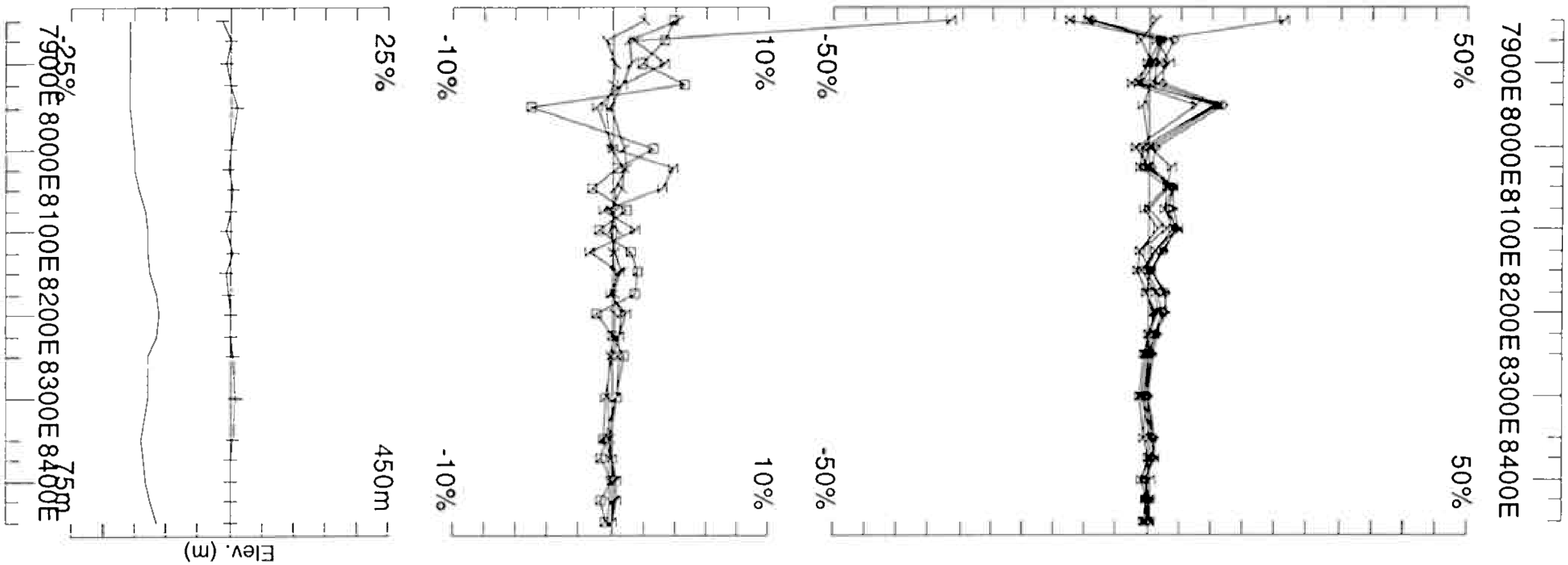
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

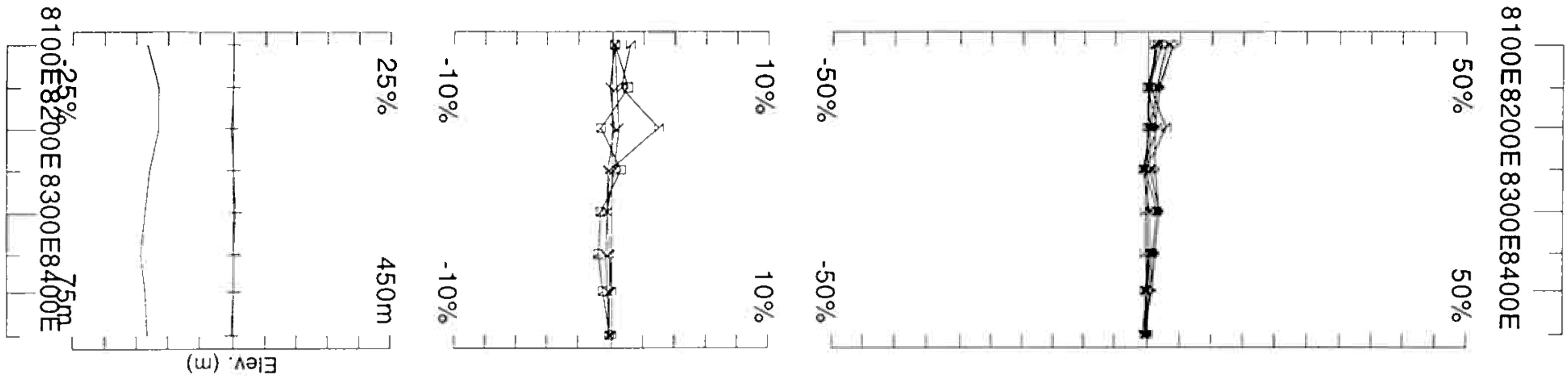
Surveyed : 28/3/6
Reduced : 29/5/6
Plotted : 13/6/6



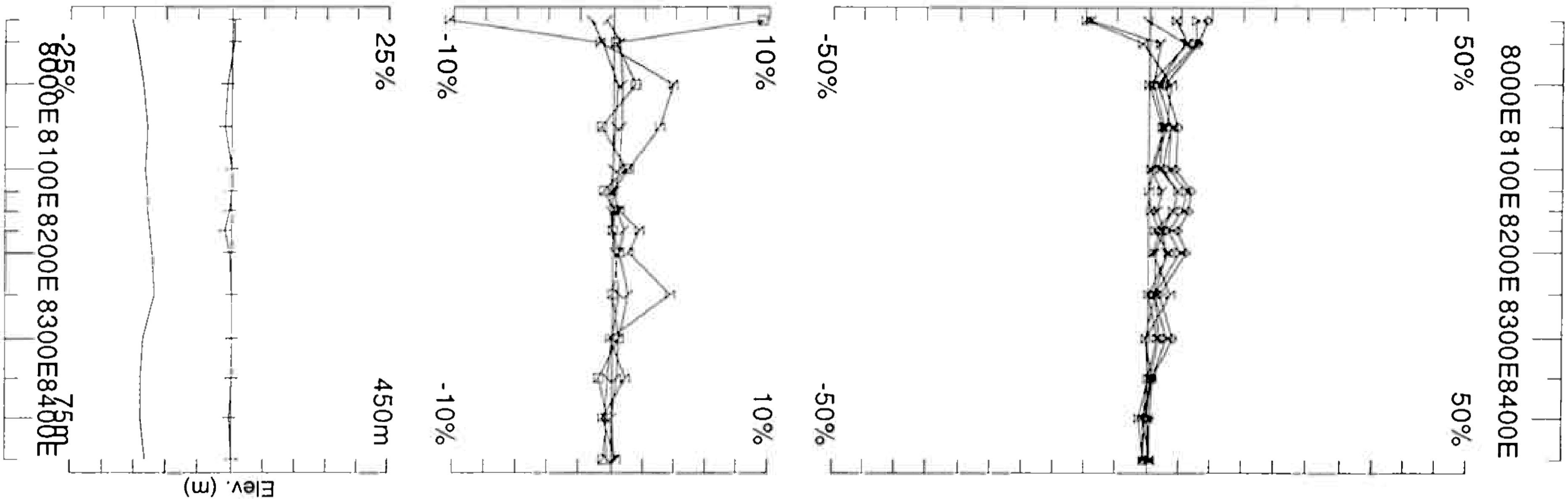
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



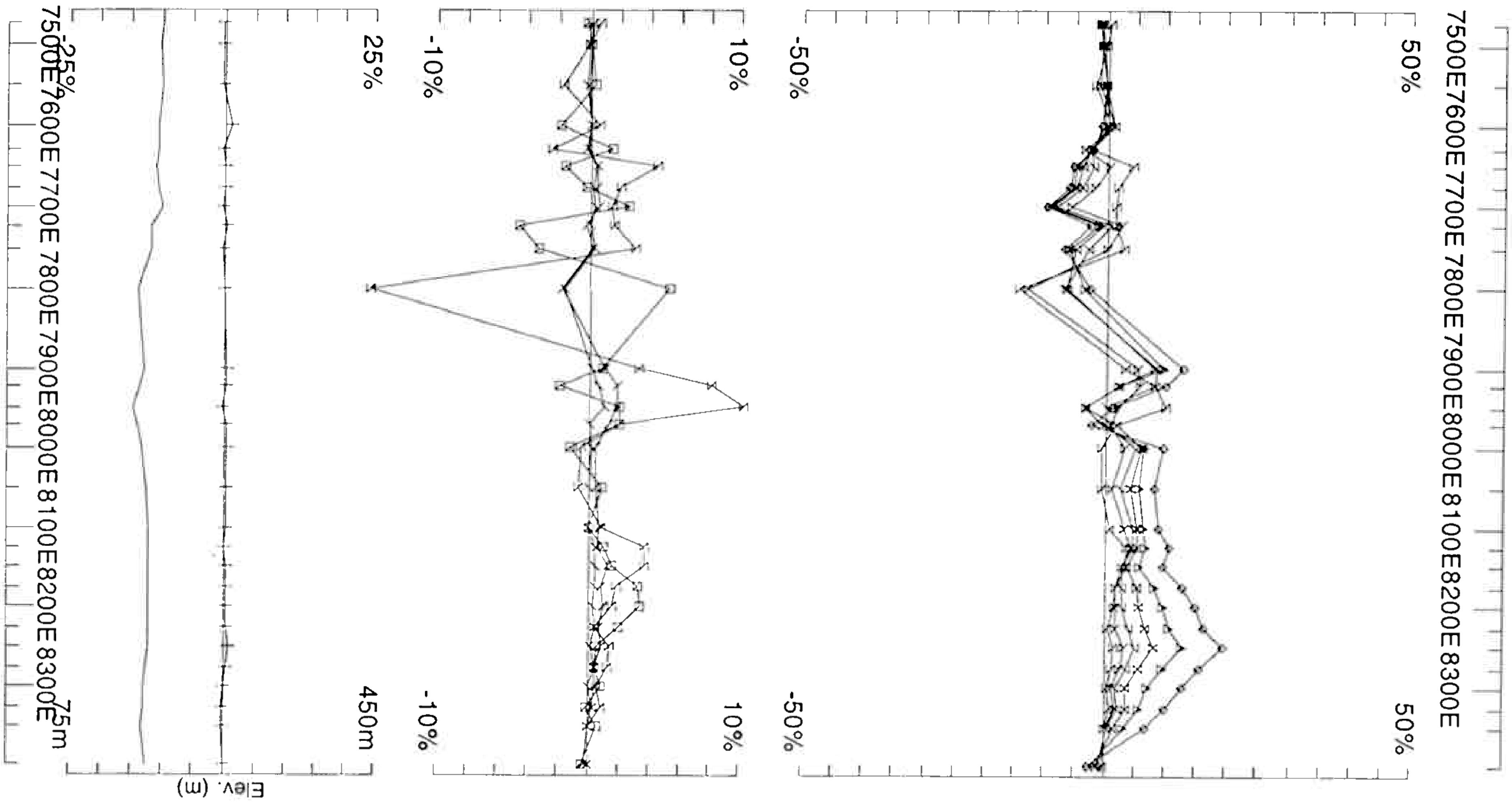
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



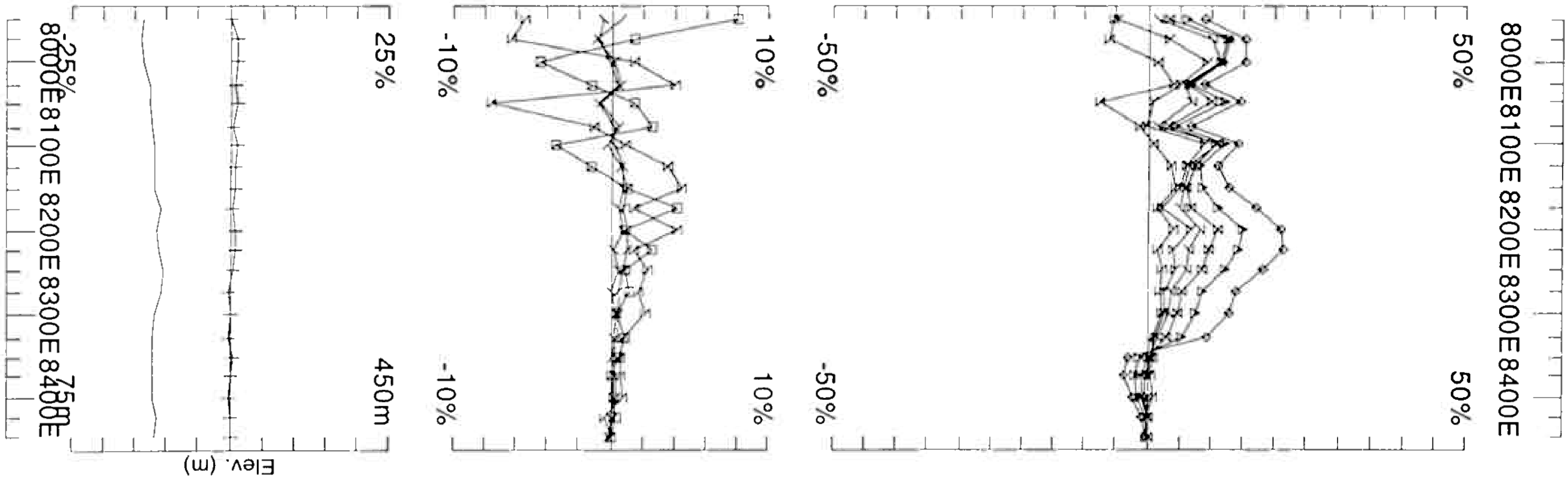
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



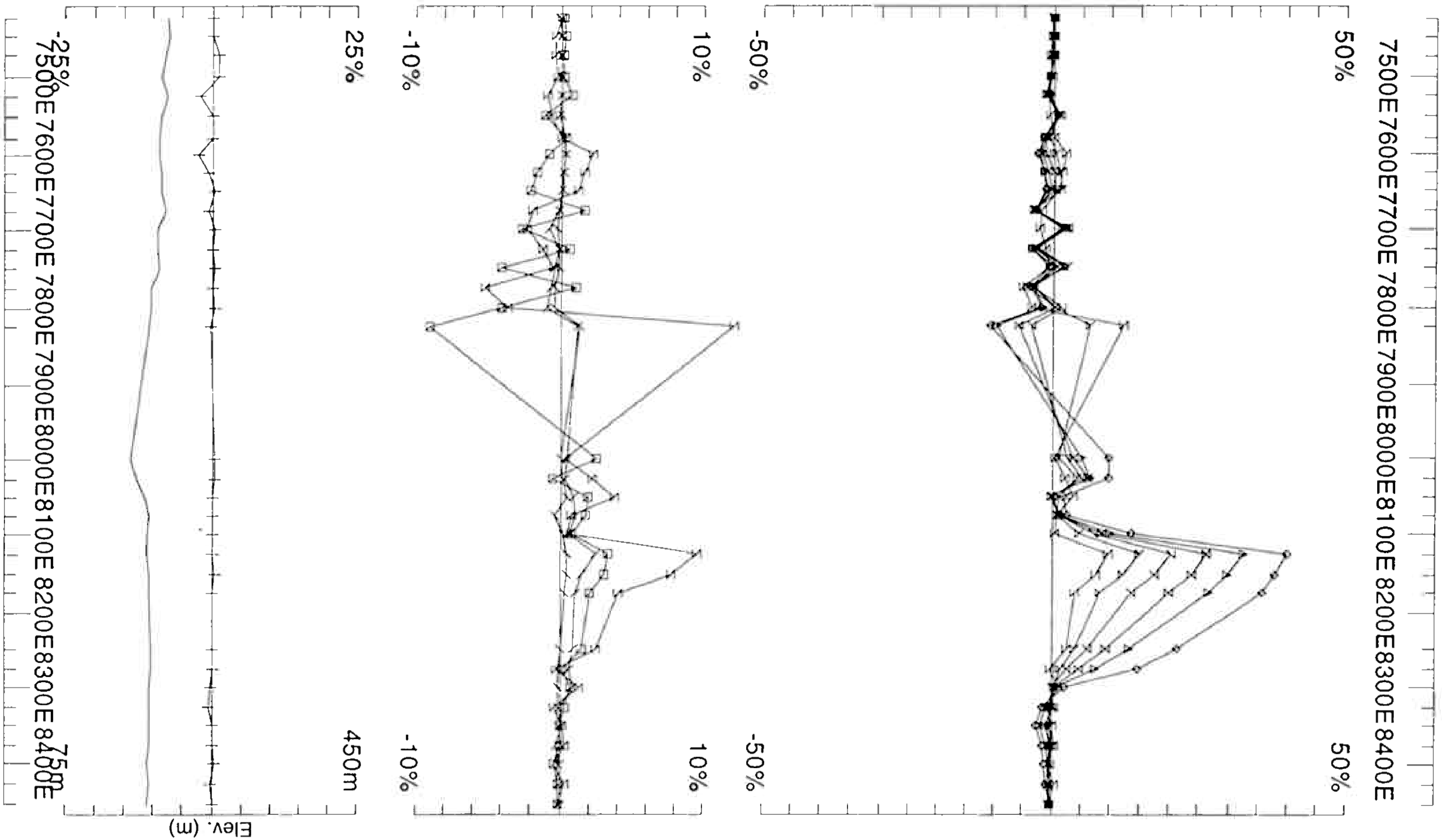
Loop: 02 Line: 9500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



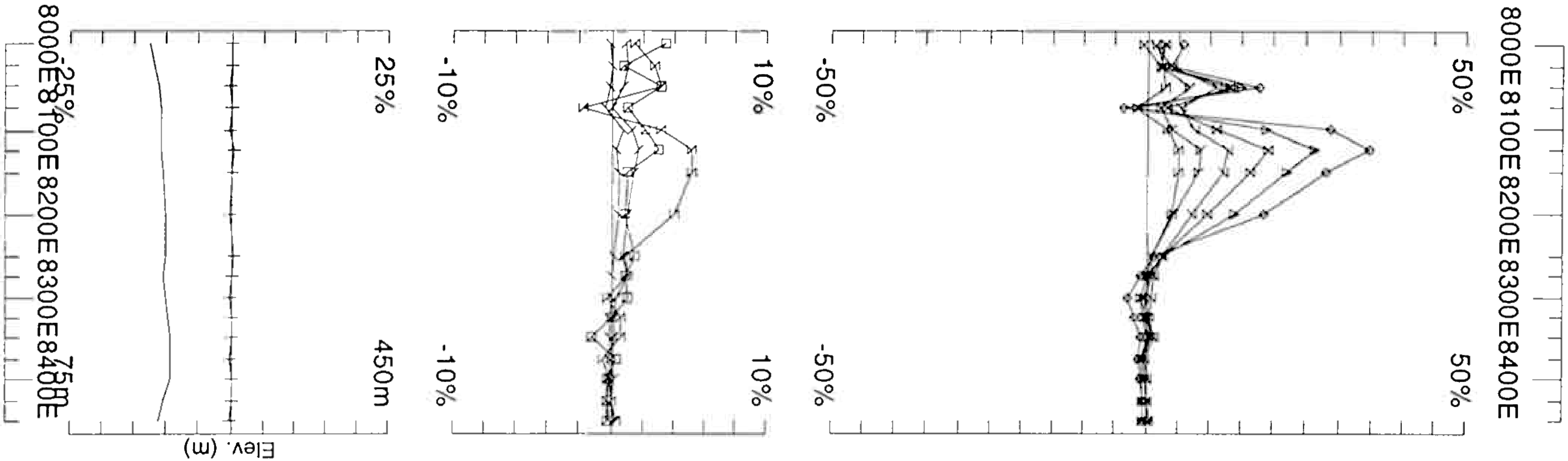
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/3/6 Plotted : 13/6/6



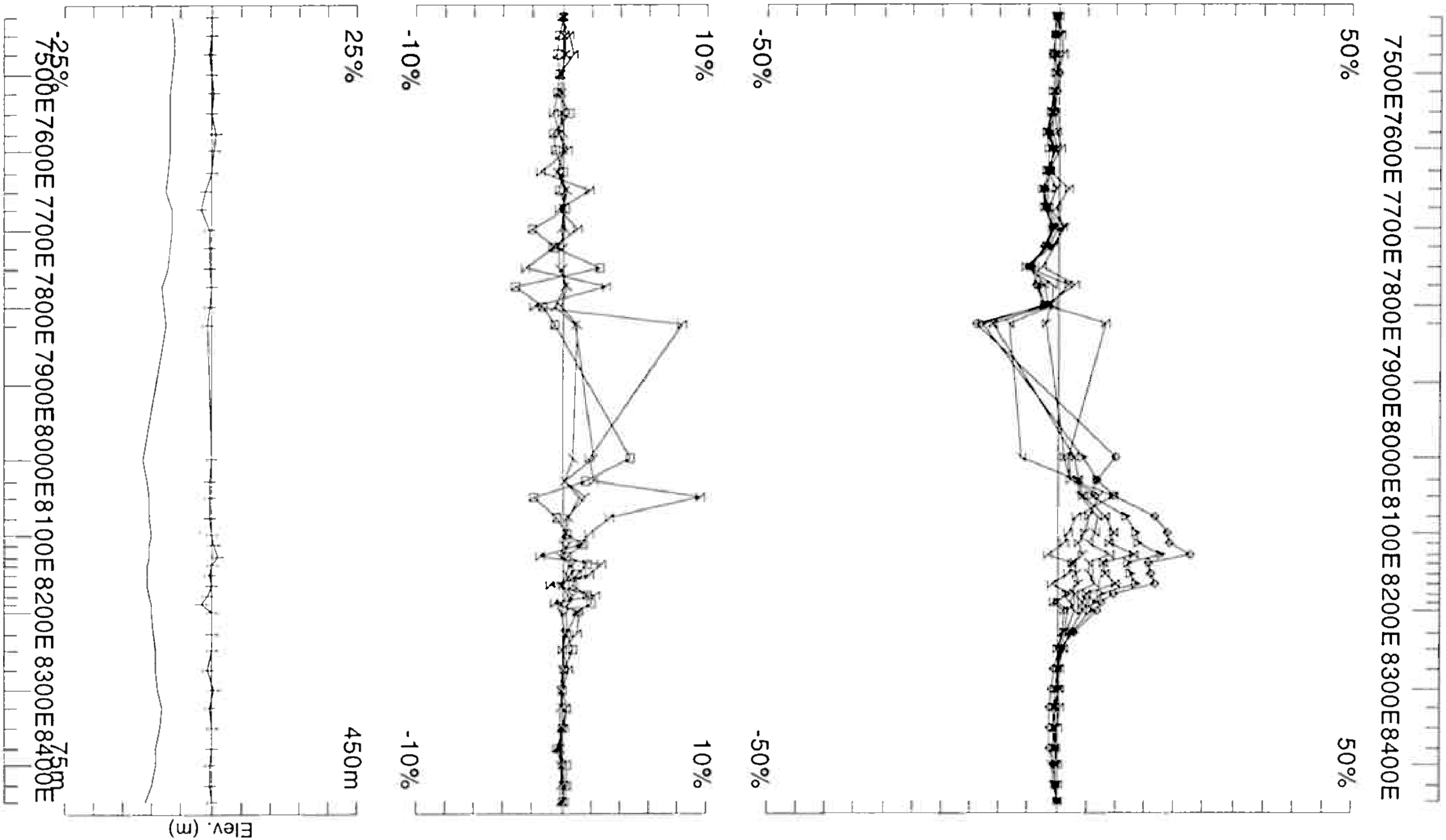
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9650N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



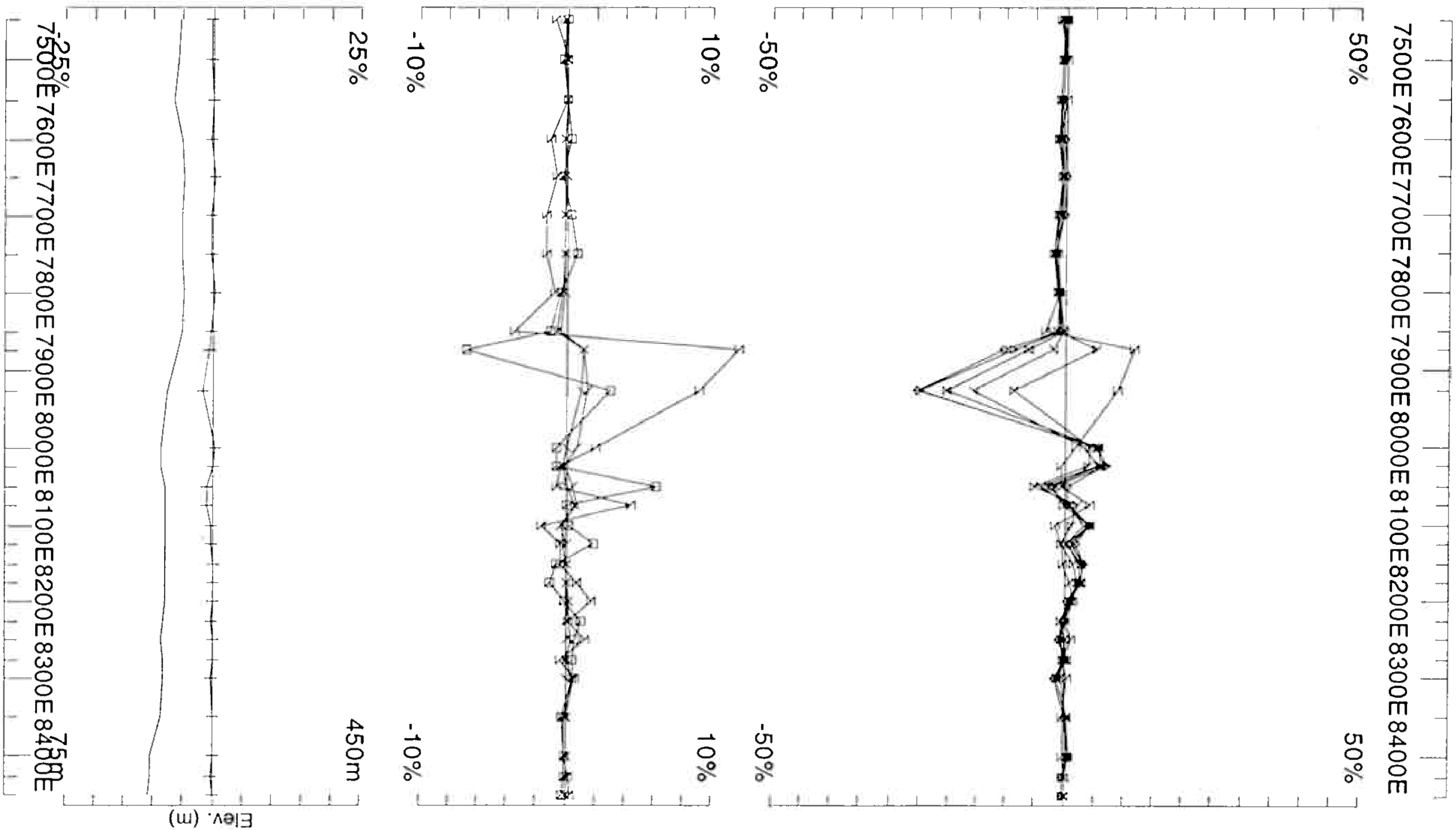
Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9700N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 26/5/6 Plotted : 13/6/6



Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9750N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/3/6 Plotted : 13/6/6



Loop: 02	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ertelien Mine Grid
Line: 9900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6

Ulleren Grid

Loop 03

Hz

@3.251 Hz frequency

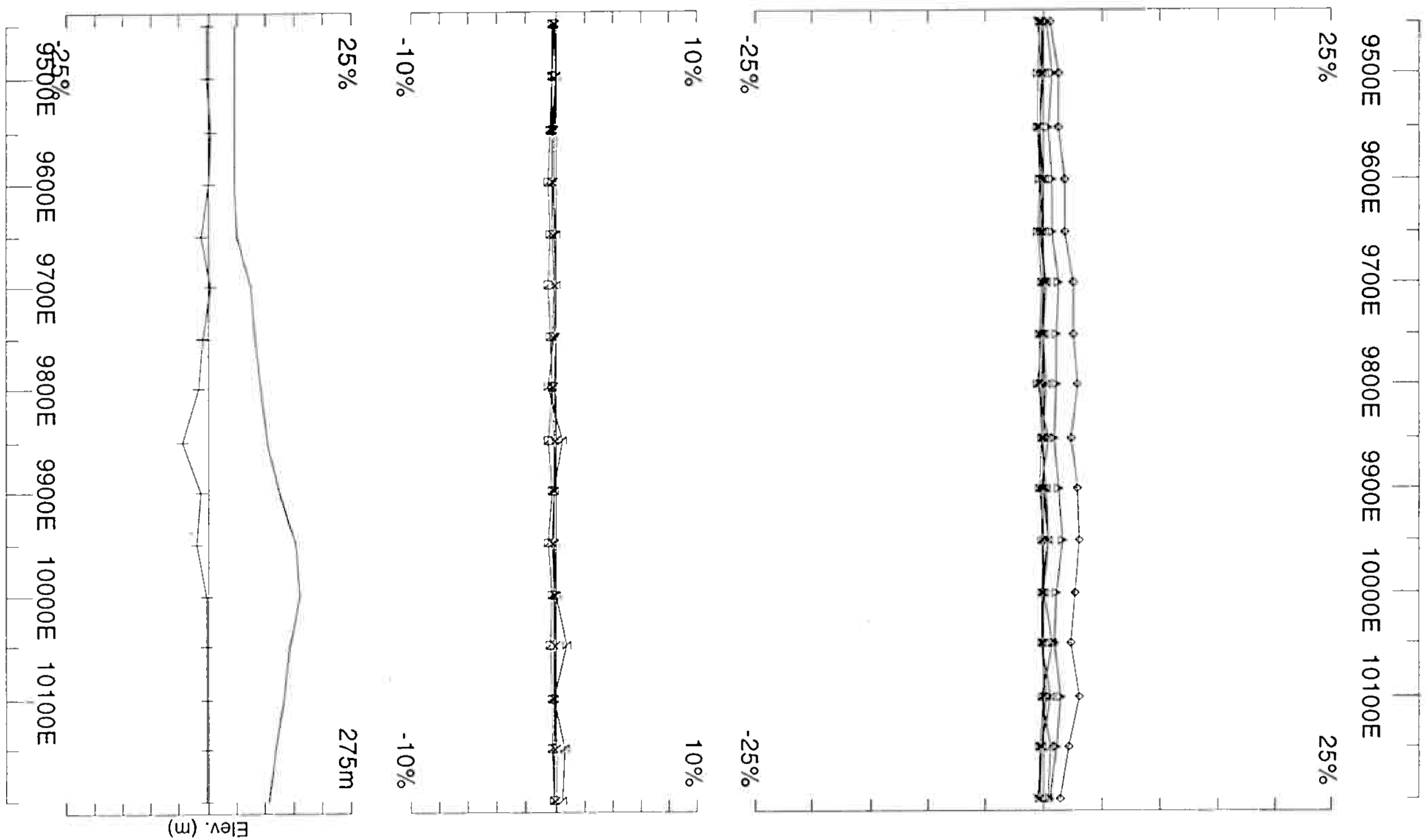
continuous norm

Ch1 reduced

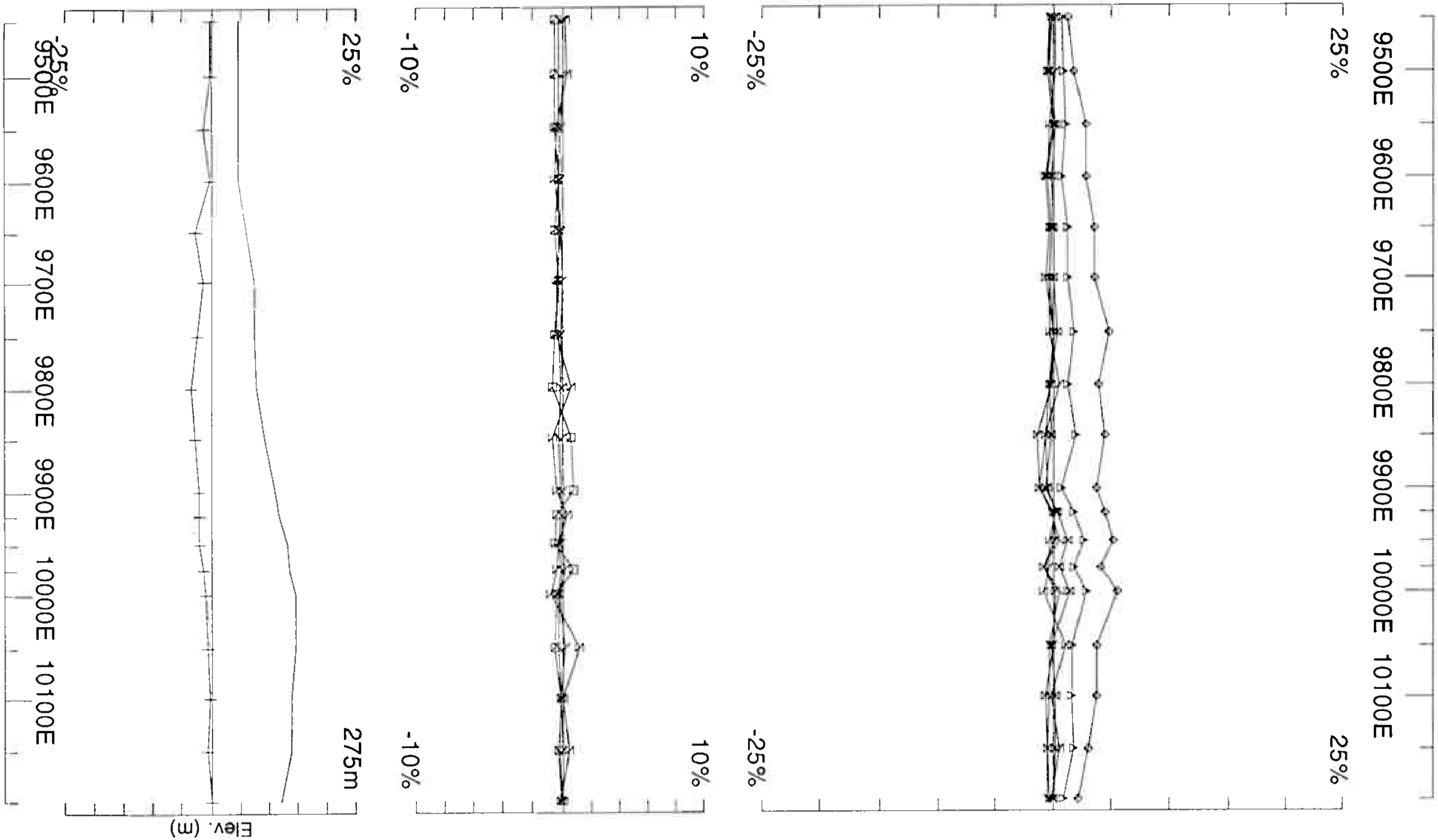
Loop 03 Ulleren	Line 5000N	9450E - 10200E	750m	1:5500
	Line 5100N	9450E - 10200E	750m	1:5500
	Line 5200N	9450E - 10200E	750m	1:5500
	Line 5300N	9450E - 10200E	750m	1:5500
	Line 5400N	9450E - 10200E	750m	1:5500
	Line 5500N	9450E - 10225E	775m	1:5500
	Line 5600N	9450E - 10200E	750m	1:5500
	Line 5700N	9450E - 10200E	750m	1:5500
	Line 5800N	9450E - 10200E	750m	1:5500
	Line 5900N	9450E - 10225E	775m	1:5500
	Line 6000N	9450E - 10225E	775m	1:5500
	Line 6050N	9450E - 10225E	775m	1:5500
	Line 6100N	9450E - 10225E	775m	1:5500
	Line 6200N	9450E - 10225E	775m	1:5500
	Line 6300N	9450E - 10200E	750m	1:5500

Ulleren Loop 03 Total 11400m

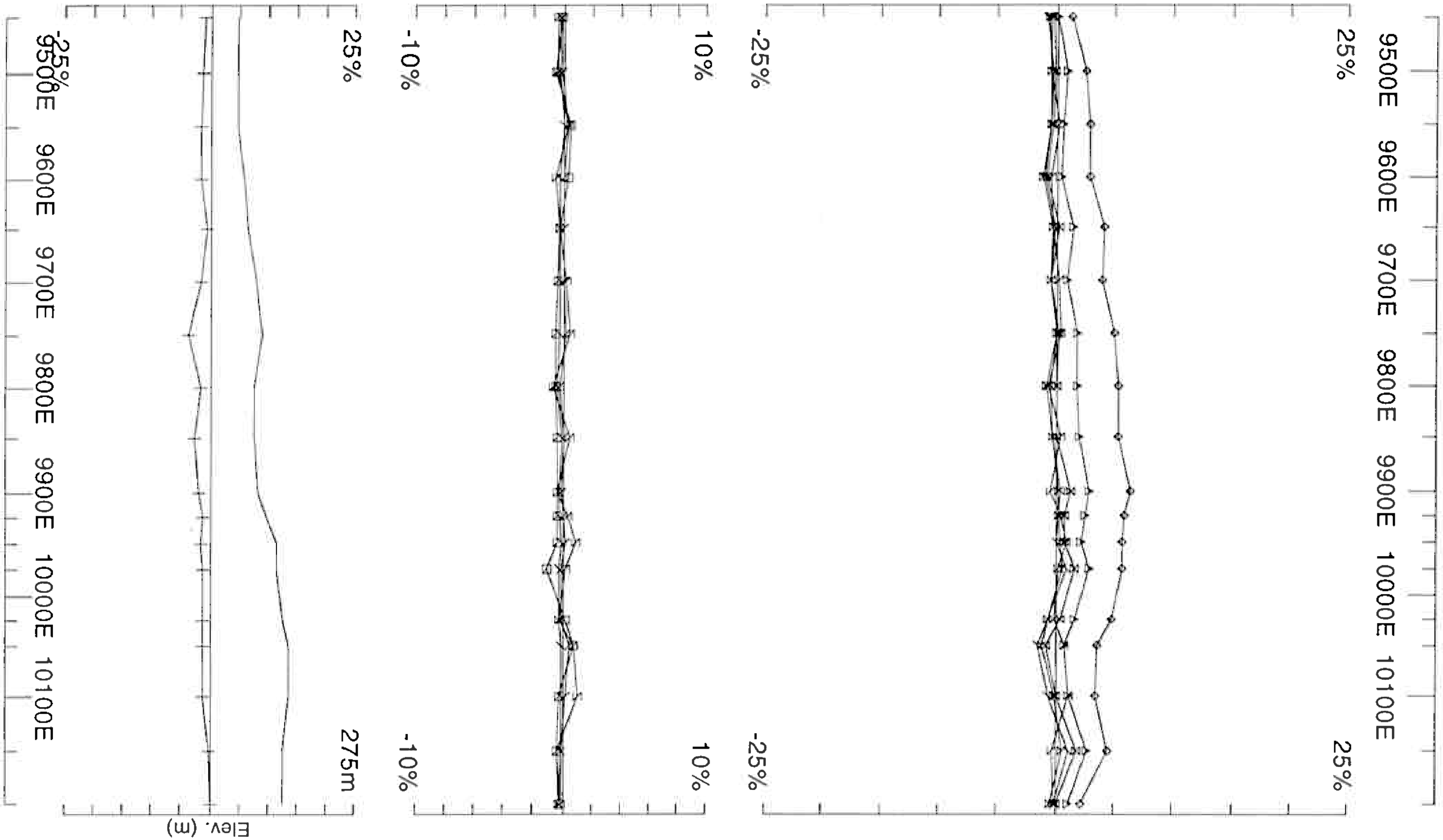
Loop 03 - continuous norm



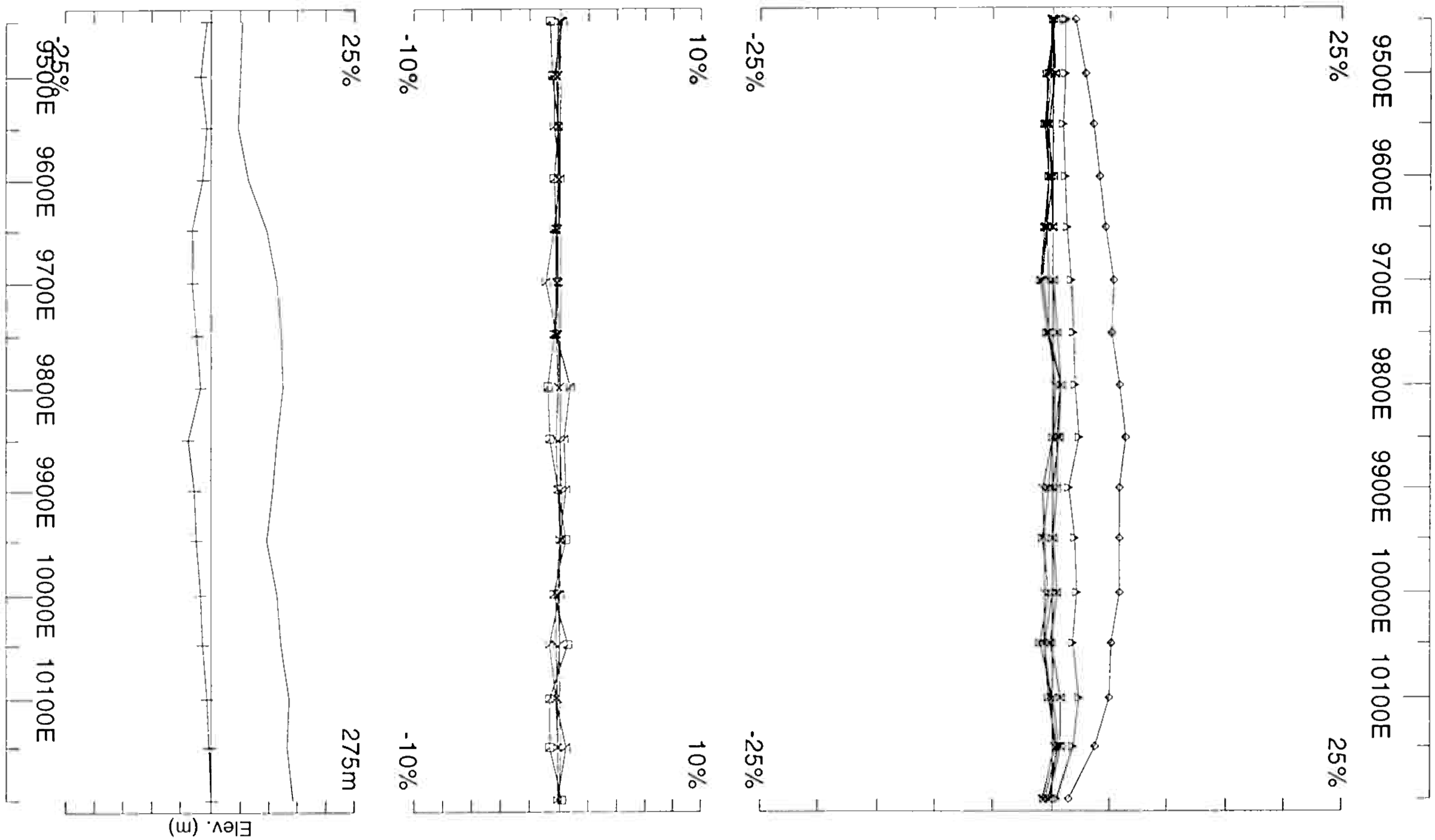
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



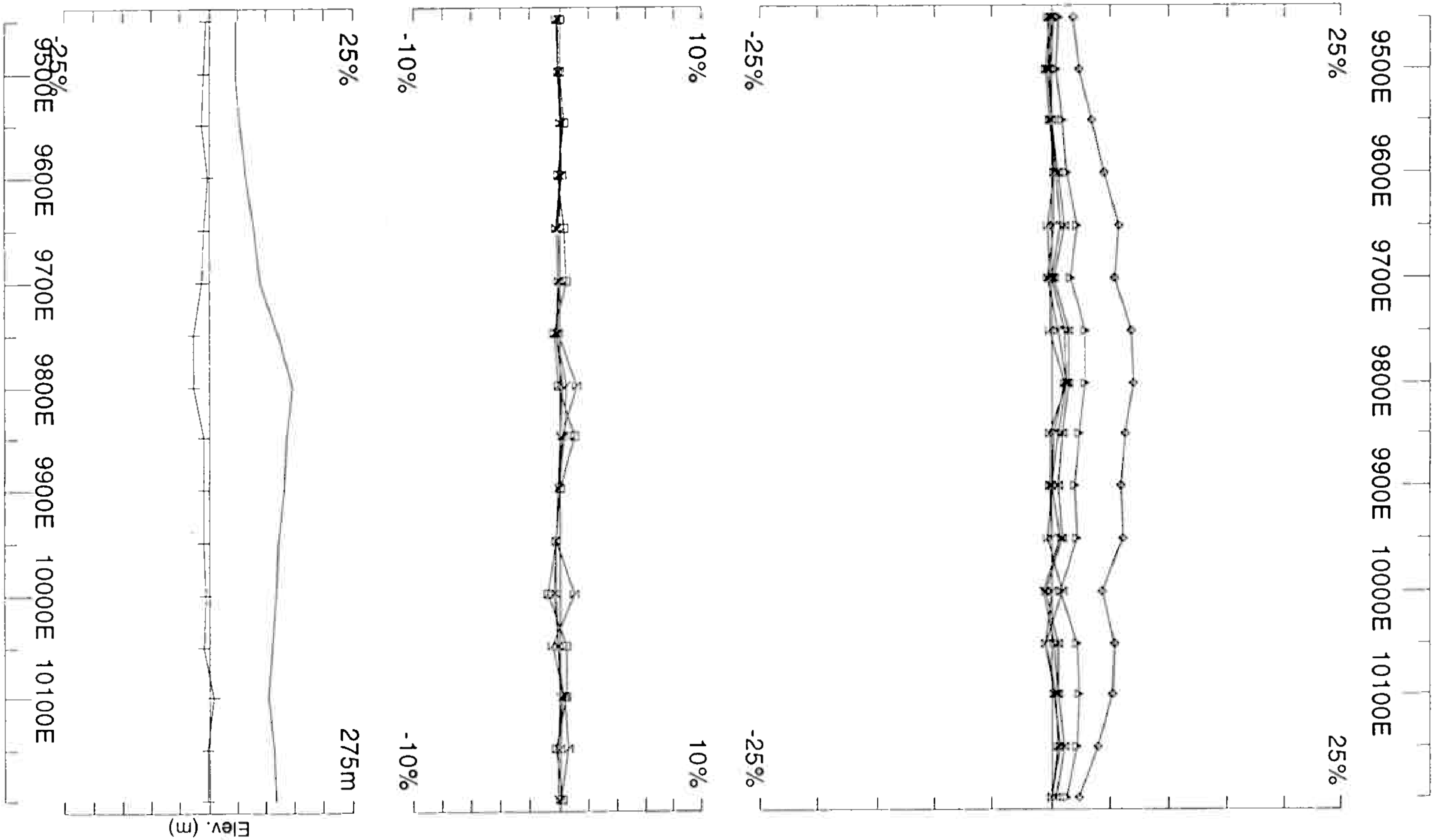
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



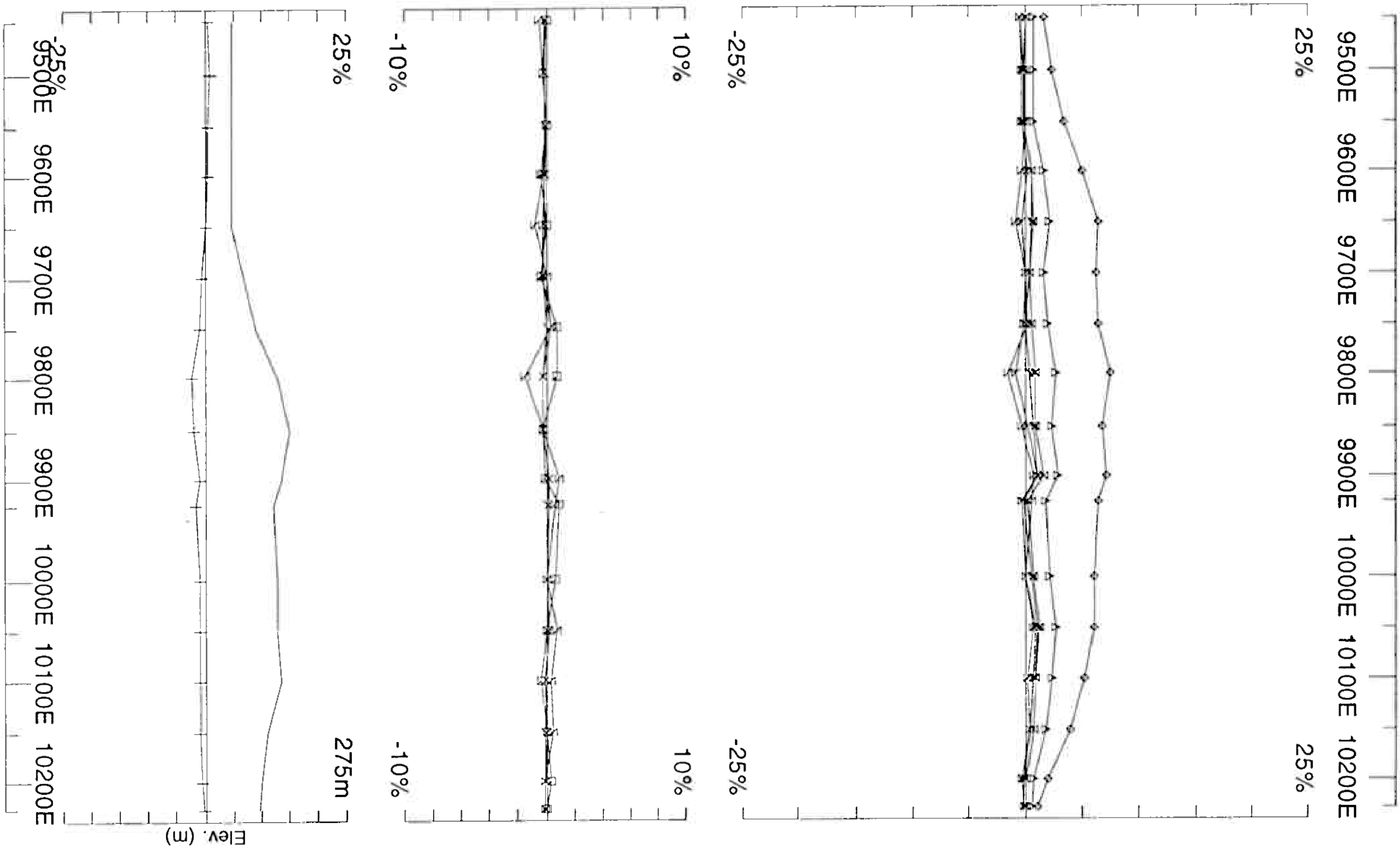
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



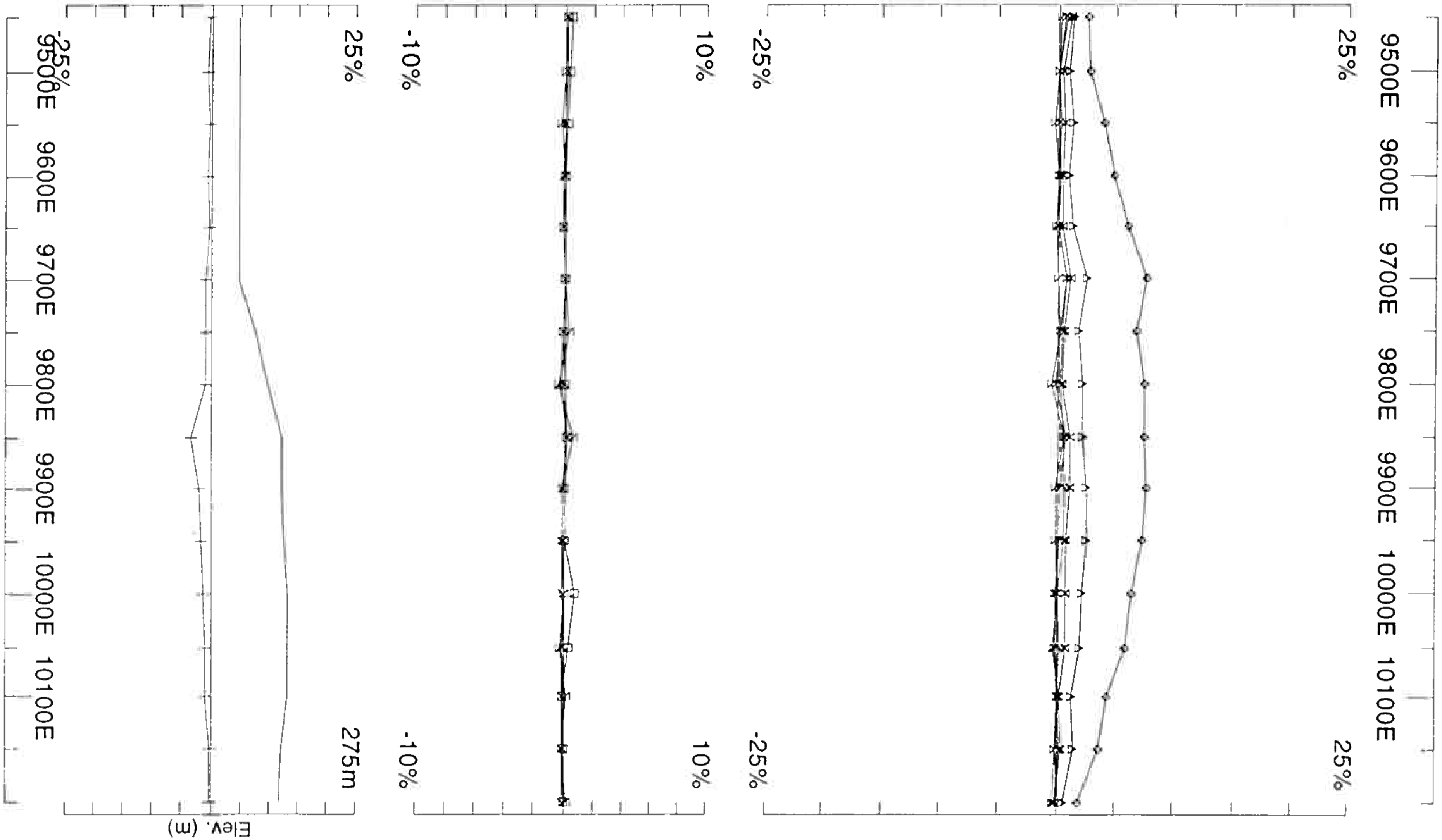
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



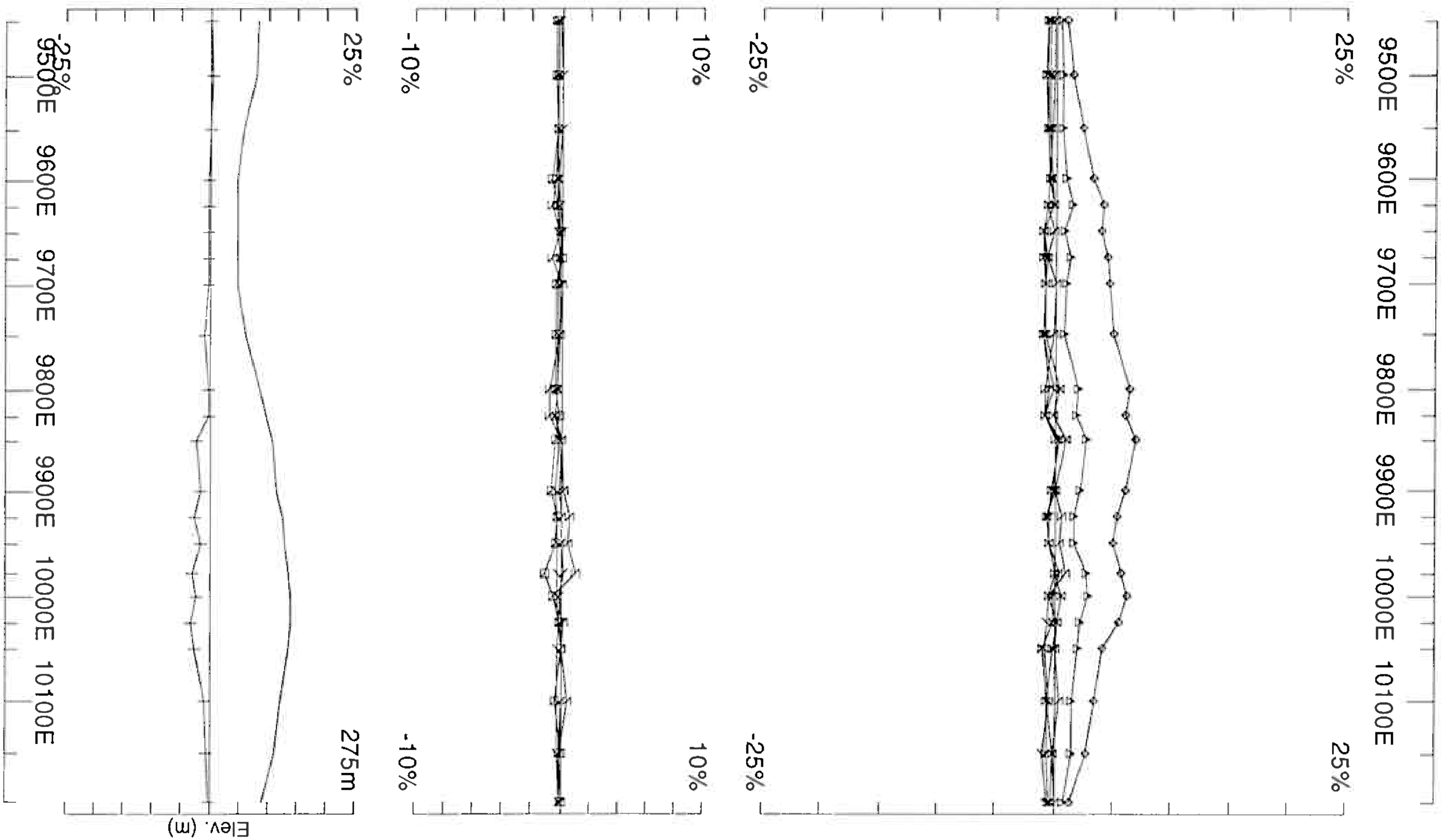
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



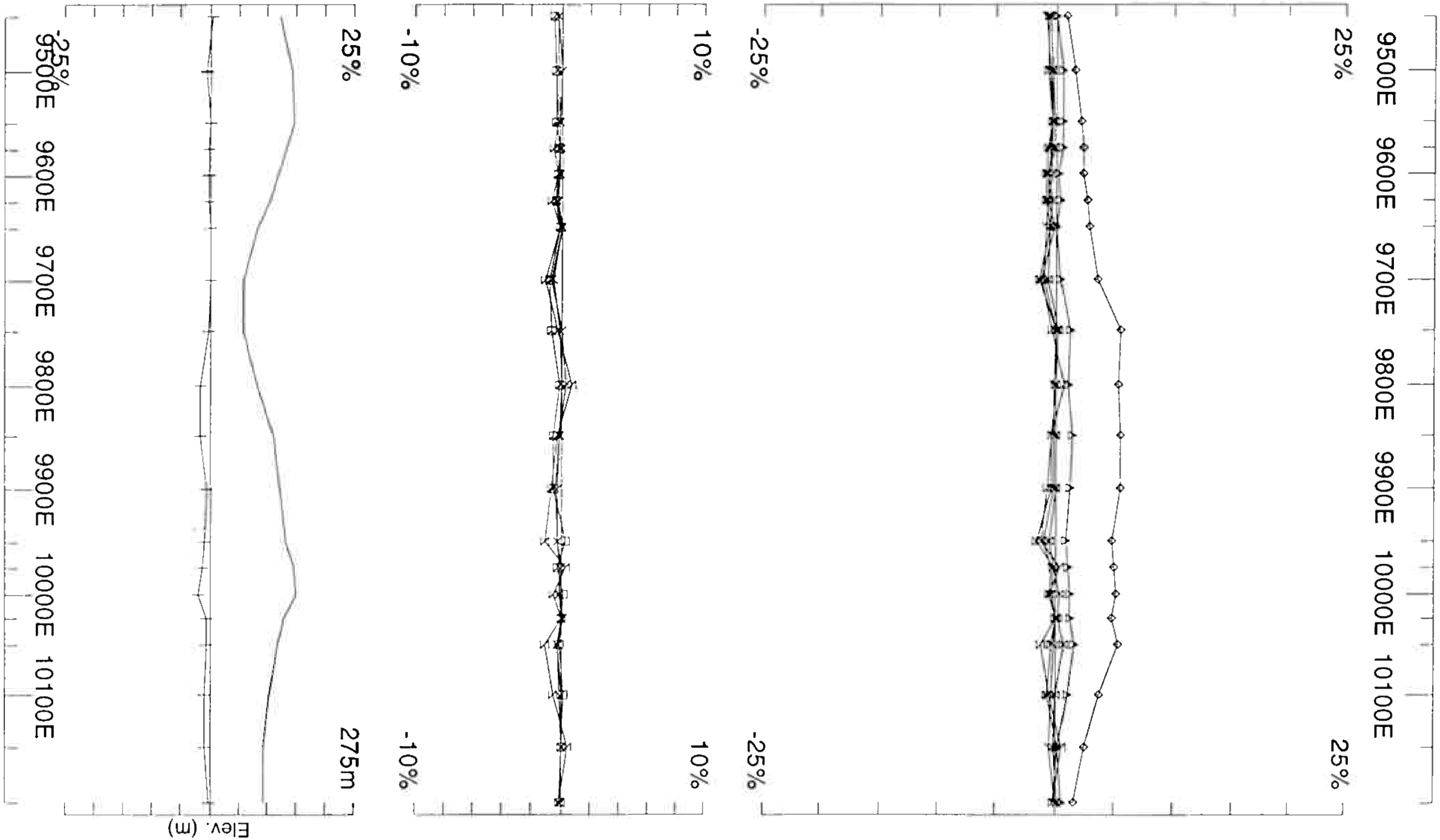
Loop: 03 Line: 5500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



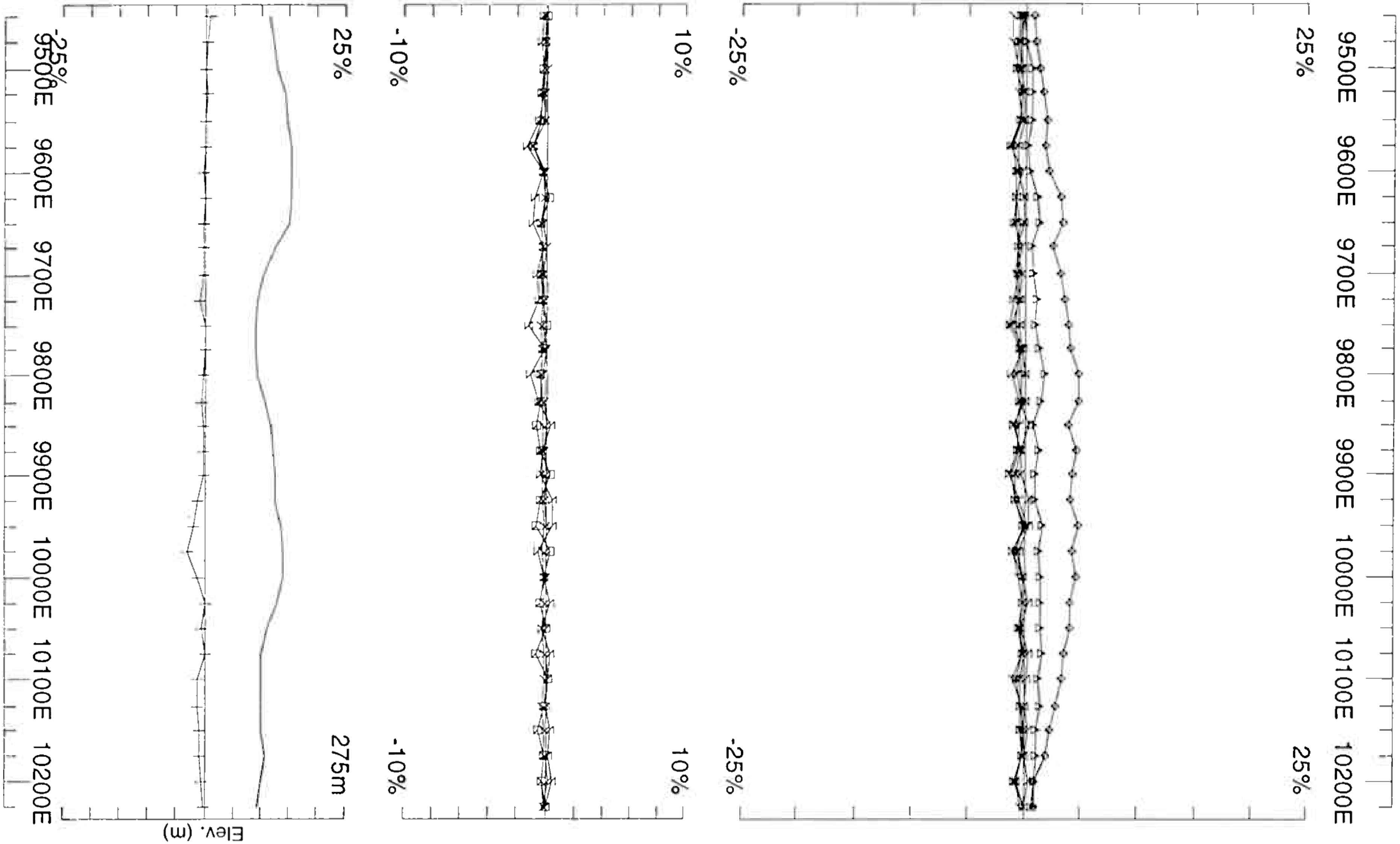
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



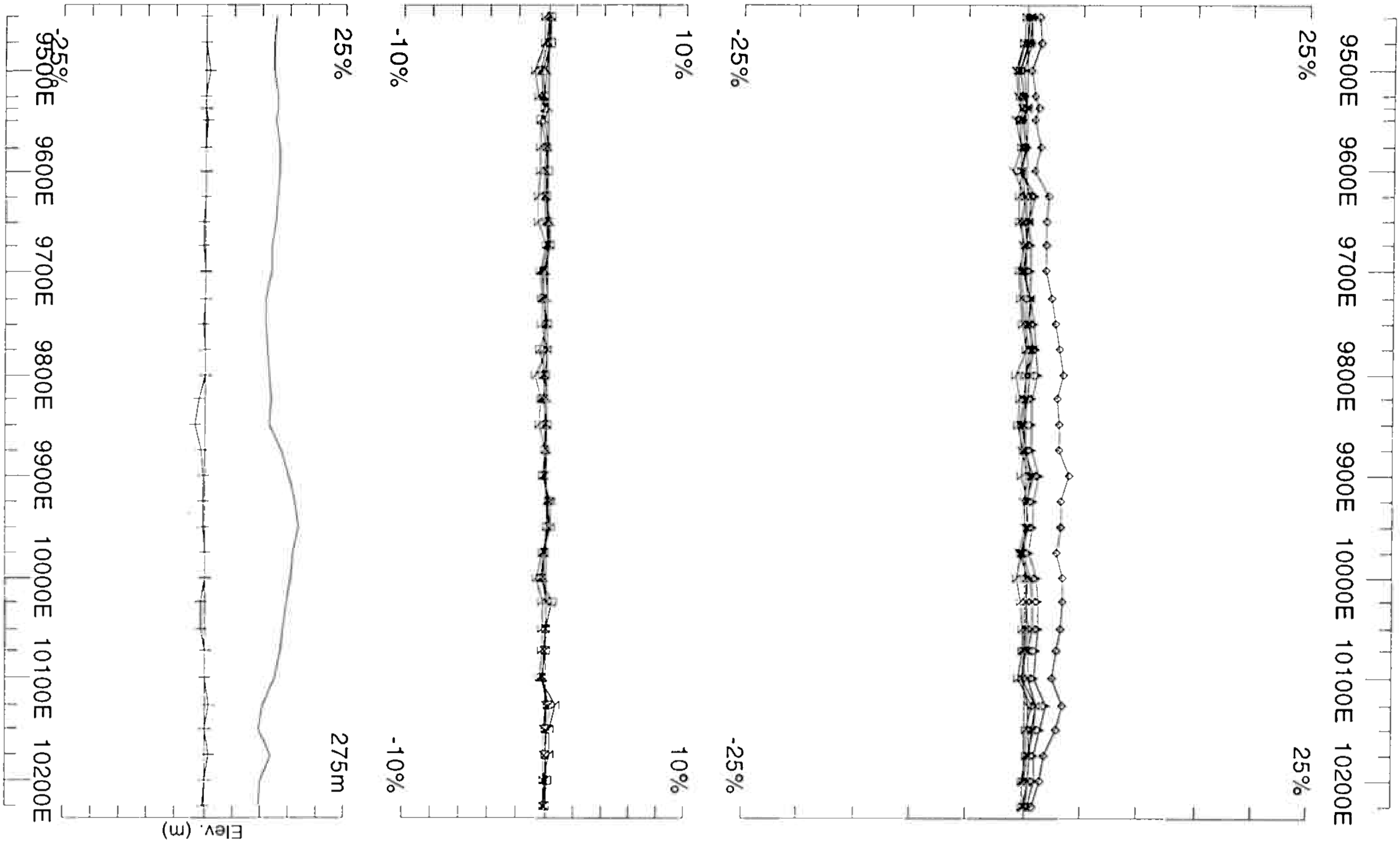
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5700N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



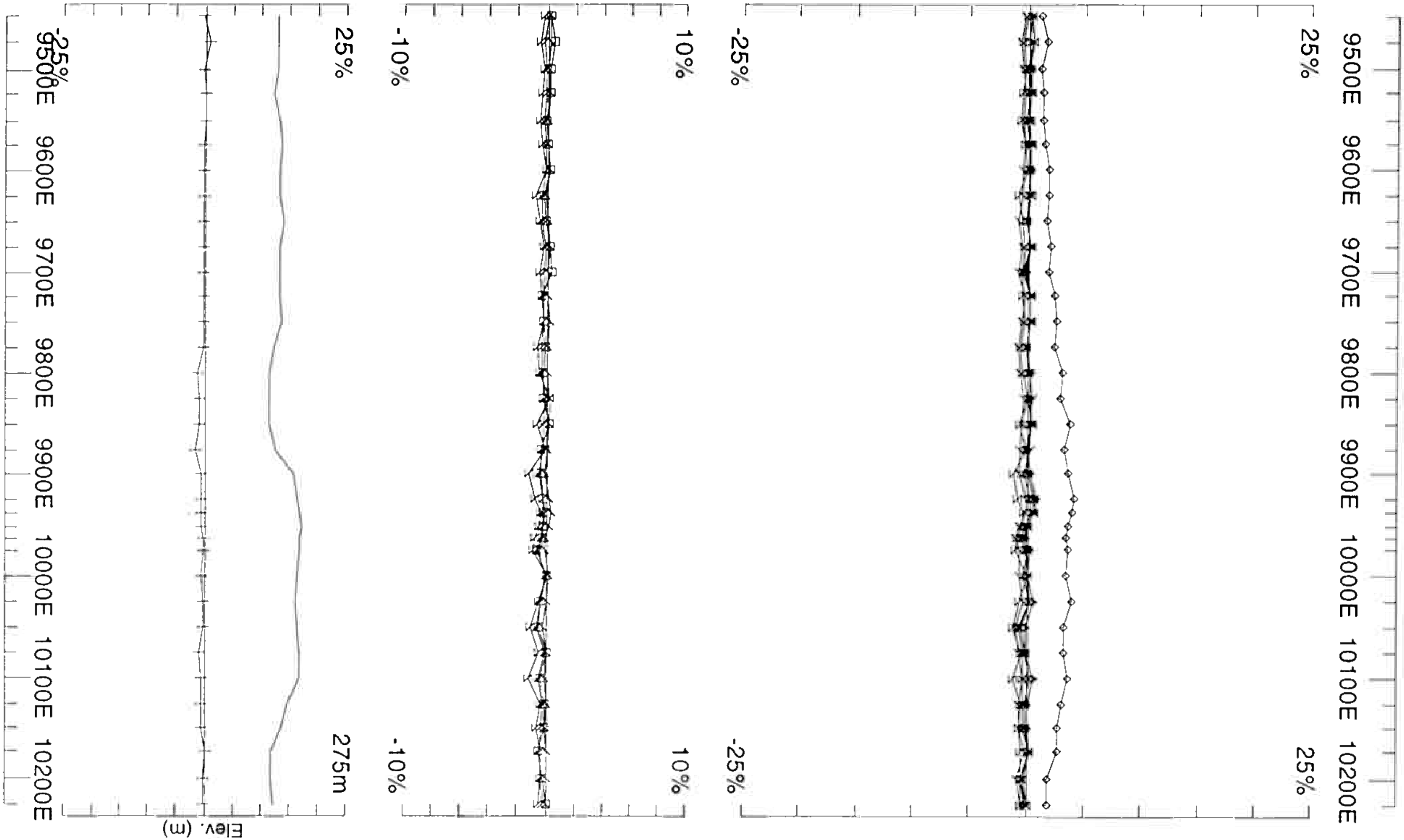
Loop: 03 Line: 5800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



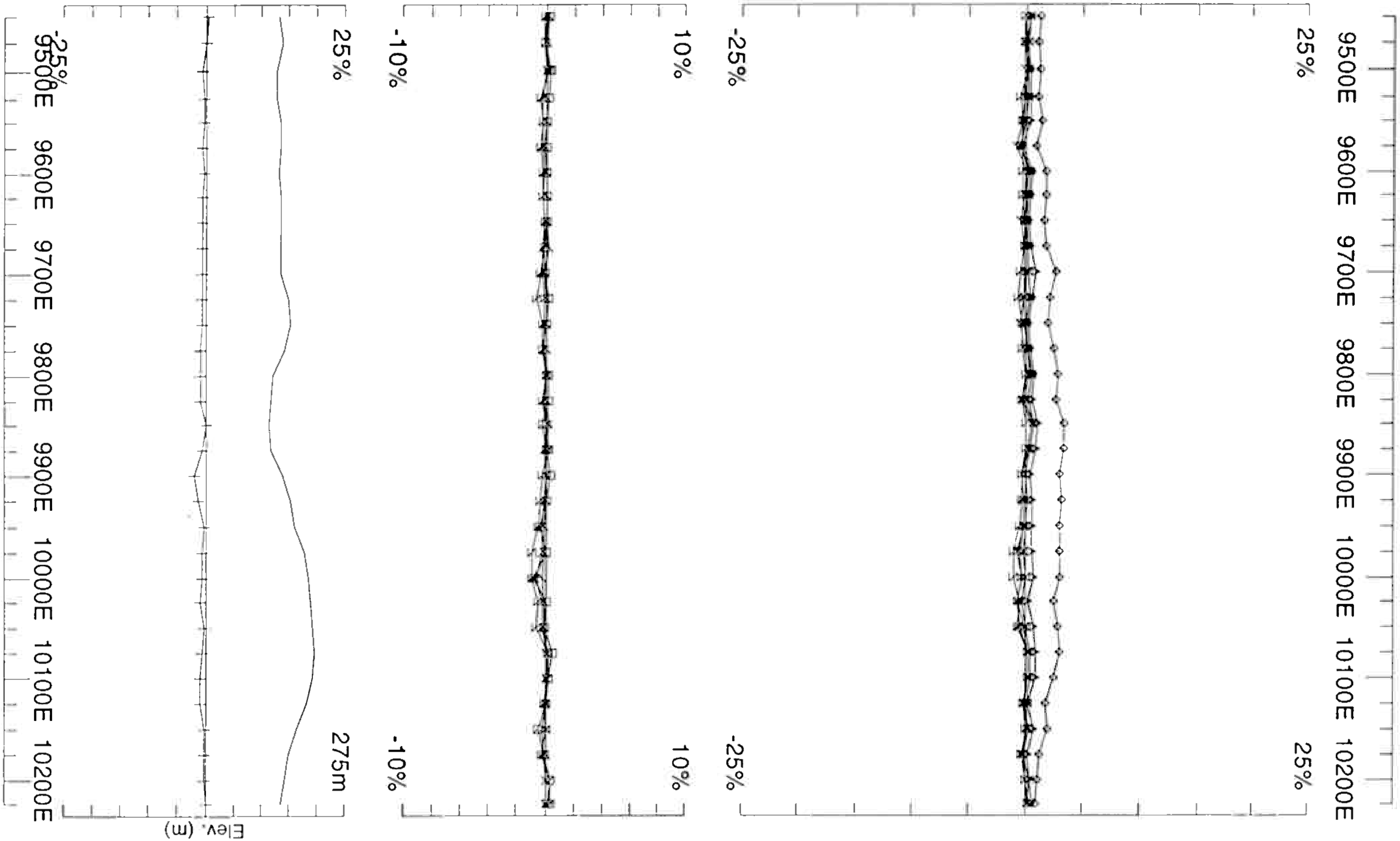
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 5900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



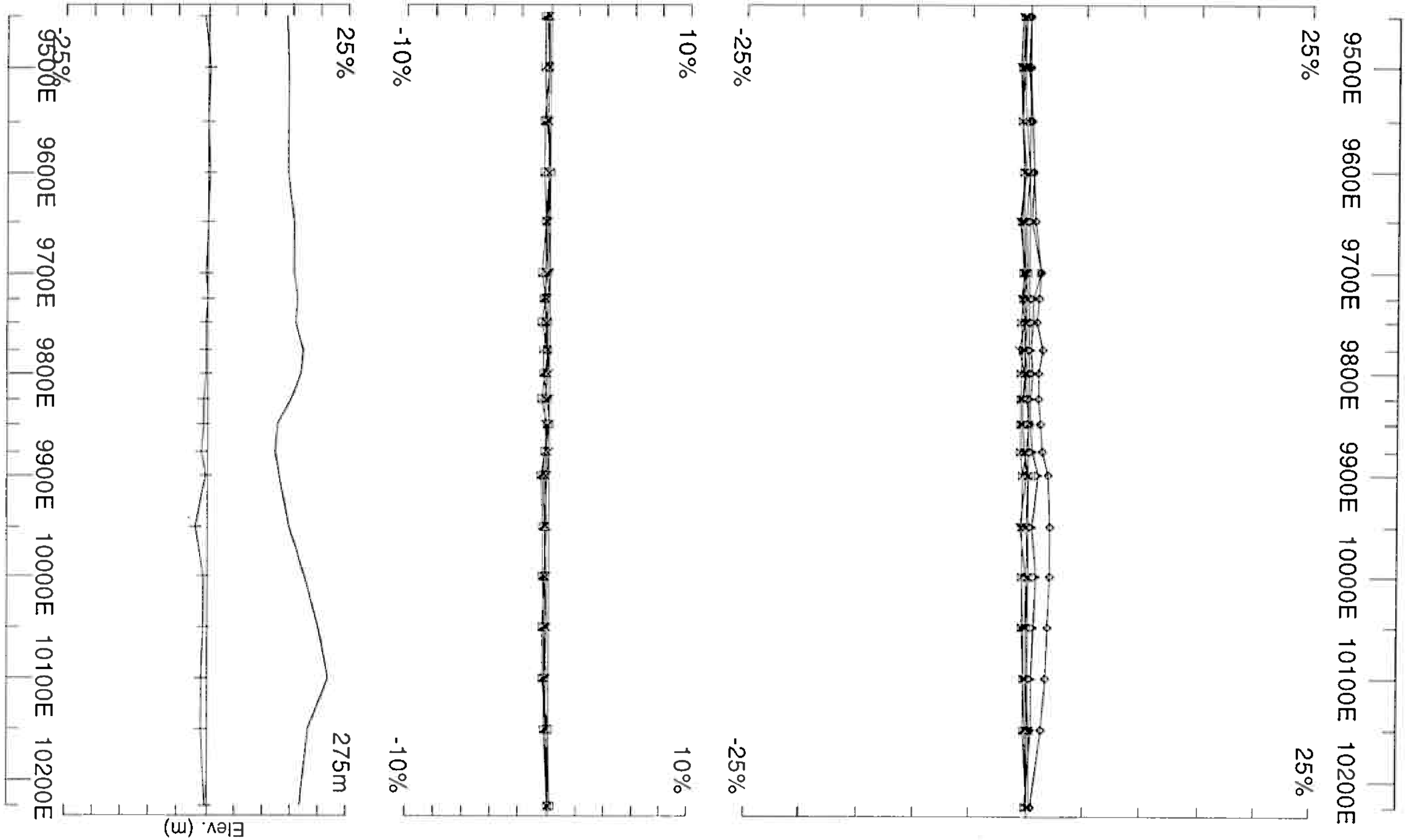
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 6000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE — Job 0612 — Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



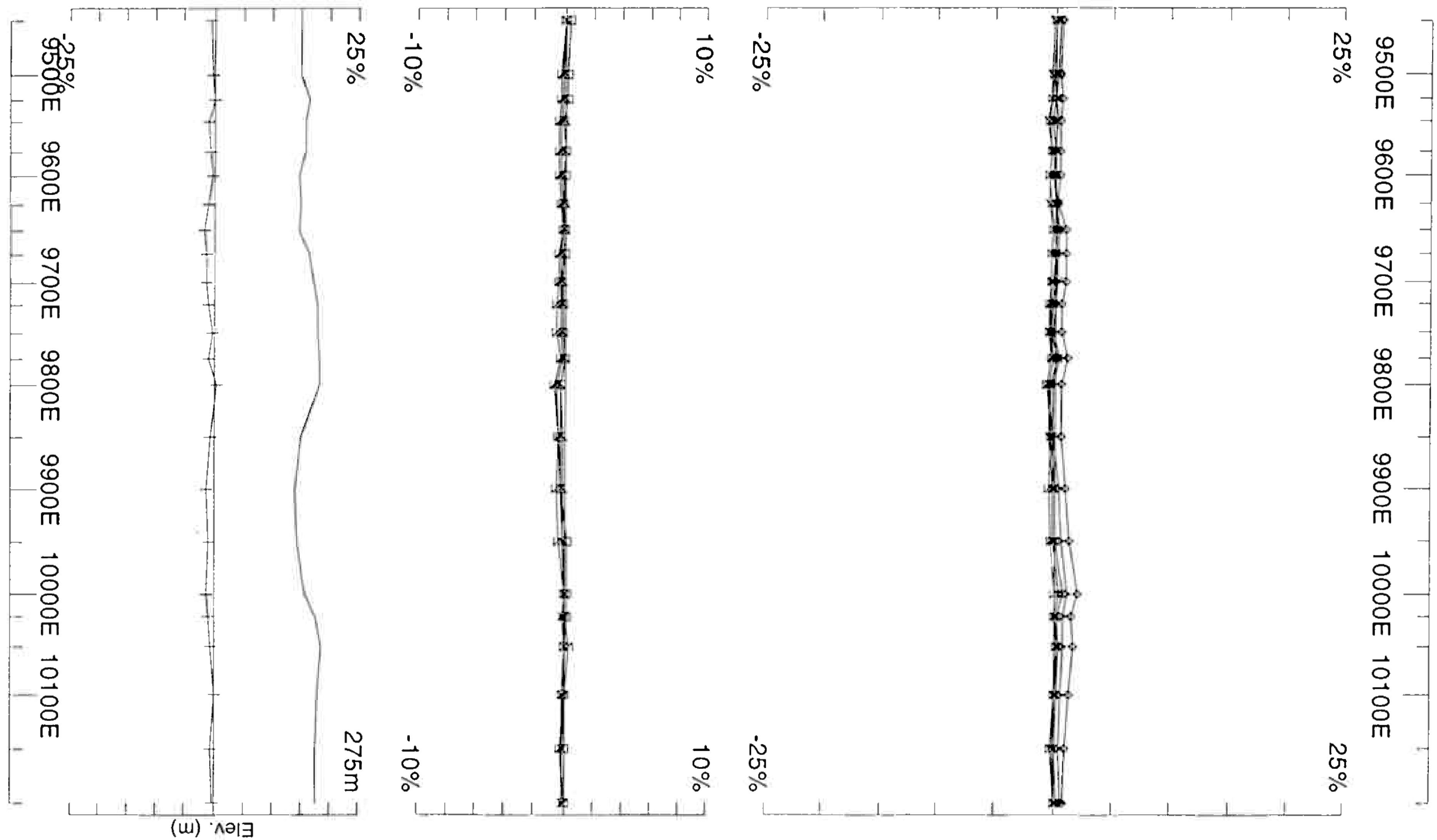
Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 6050N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03 Line: 6100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 6200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE — Job 0612 — Surveyed : 25/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Ulleren Grid
Line: 6300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 25/3/6 Reduced : 29/5/6 Plotted : 13/6/6

Langedalen Grid

Loop 05: Full Profiles

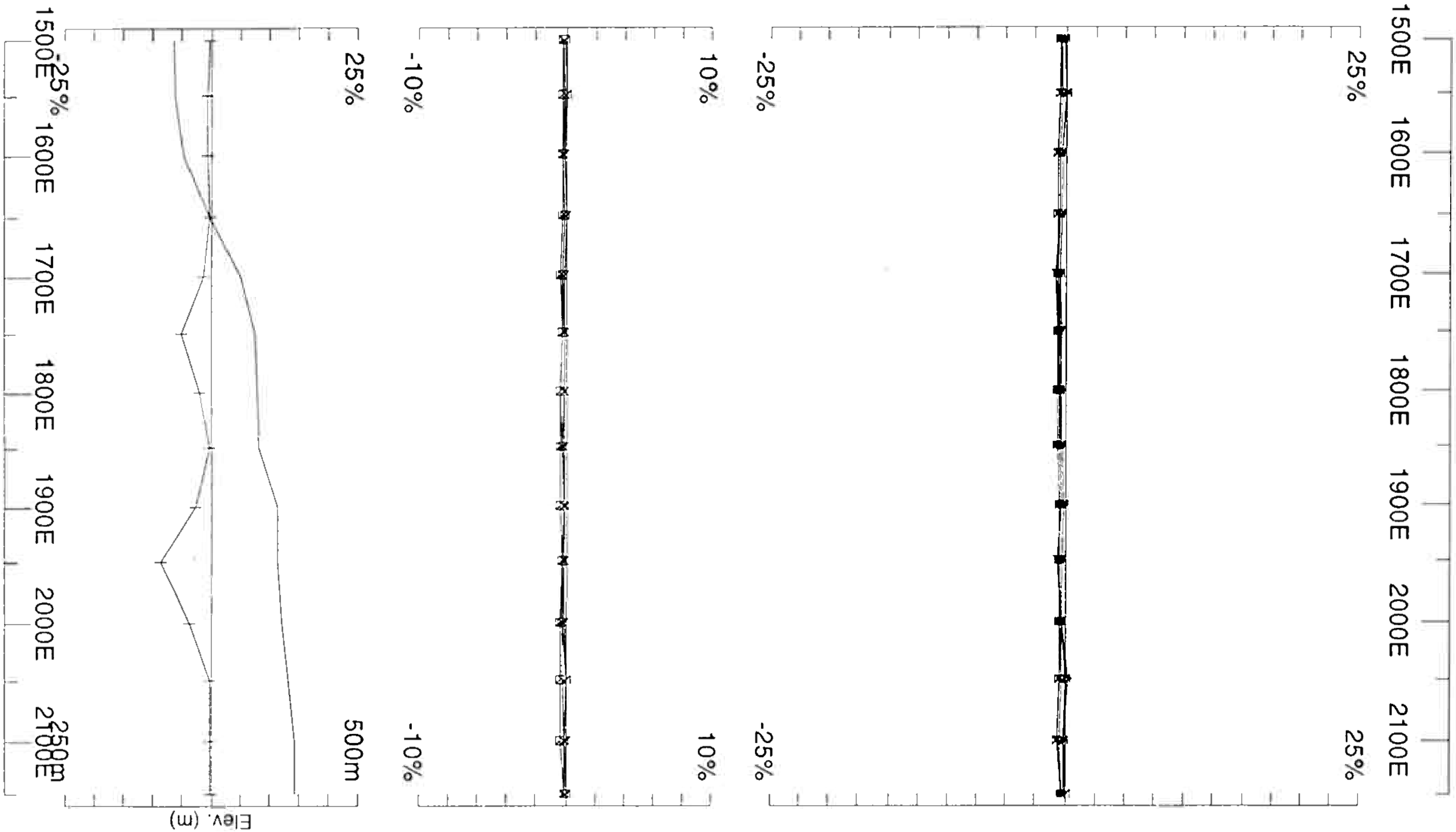
Hz
@3.251 Hz frequency

continuous norm

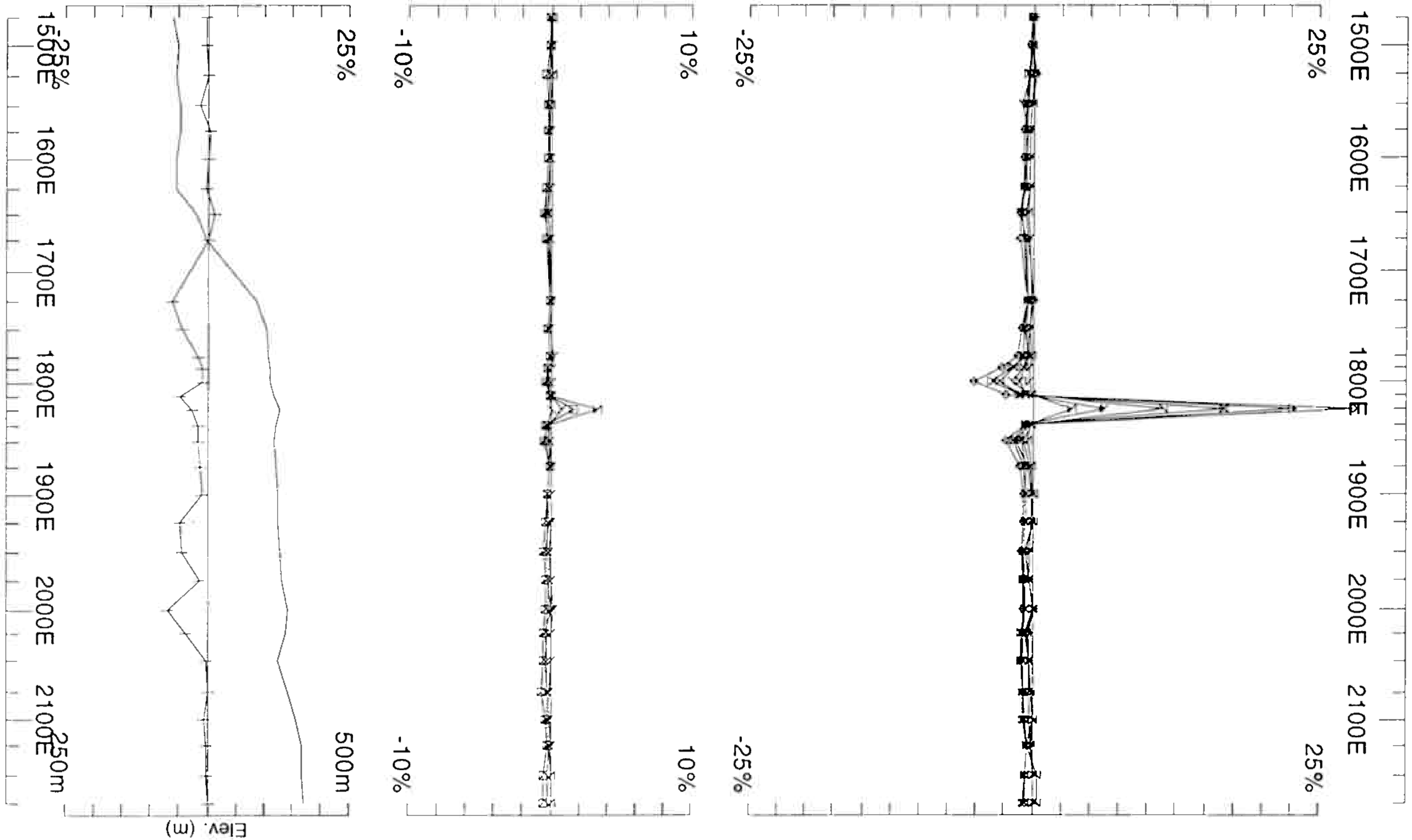
Ch1 reduced

Loop 05 Langedalen	Line 4600N	1500E - 2150E	650m	1:5000
	Line 4700N	1475E - 2175E	700m	1:5000
	Line 4750N	1650E - 2100E	450m	1:5000
	Line 4800N	1475E - 2175E	700m	1:5000
	Line 4900N	1475E - 2175E	700m	1:5000
	Line 5000N	1500E - 2175E	675m	1:5000
	Line 5100N	1475E - 2175E	700m	1:5000
	Line 5200N	1475E - 2175E	700m	1:10000
		2225E - 2800E	575m	
	Line 5250N	1475E - 2175E	700m	1:5000
	Line 5300N	1450E - 2175E	725m	1:10000
		2250E - 2800E	550m	
	Line 5400N	1475E - 2175E	700m	1:10000
		2225E - 2800E	575m	
	Line 5500N	1500E - 2175E	675m	1:5000
	Langedalen	Loop 05 Total	9775m	

Loop 05 - continuous norm



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05
Line: 4700N
Compt: Hz

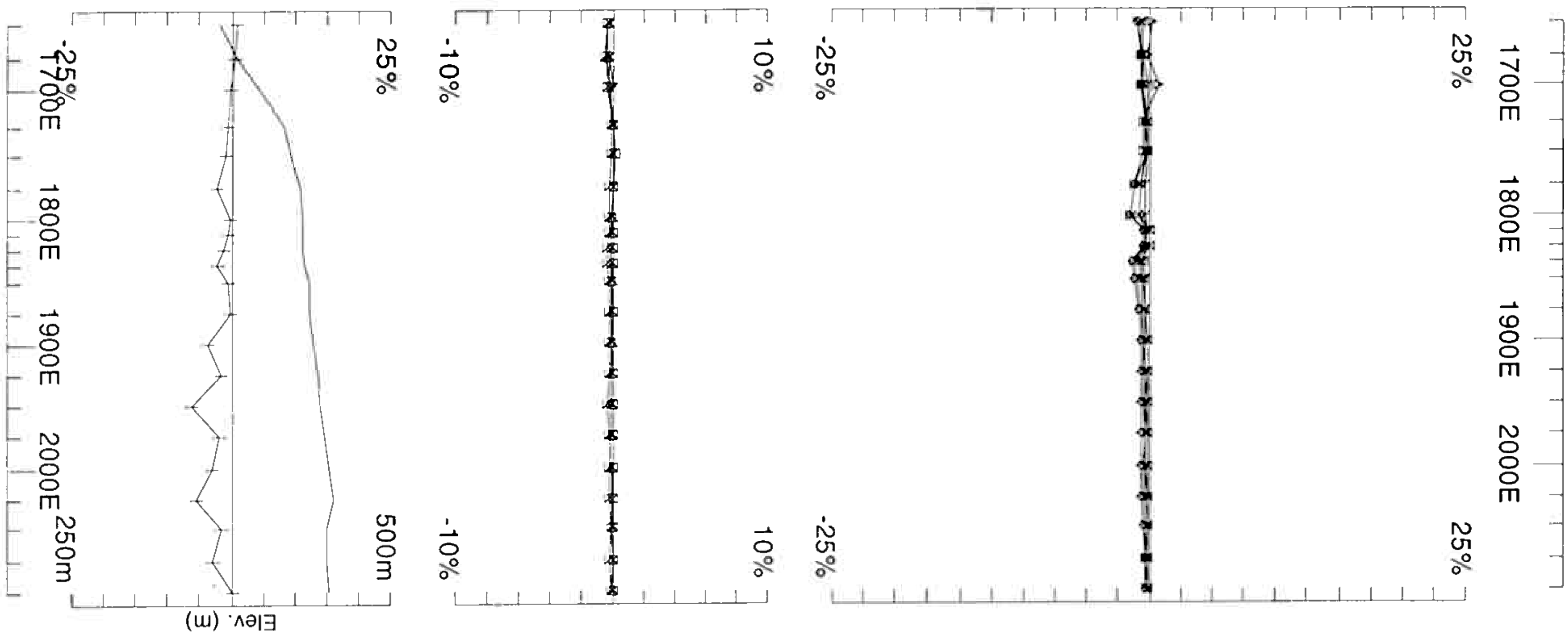
Secondary, (Chn - Ch1)/|Hp|
Contin. Norm at depth of 0 m
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

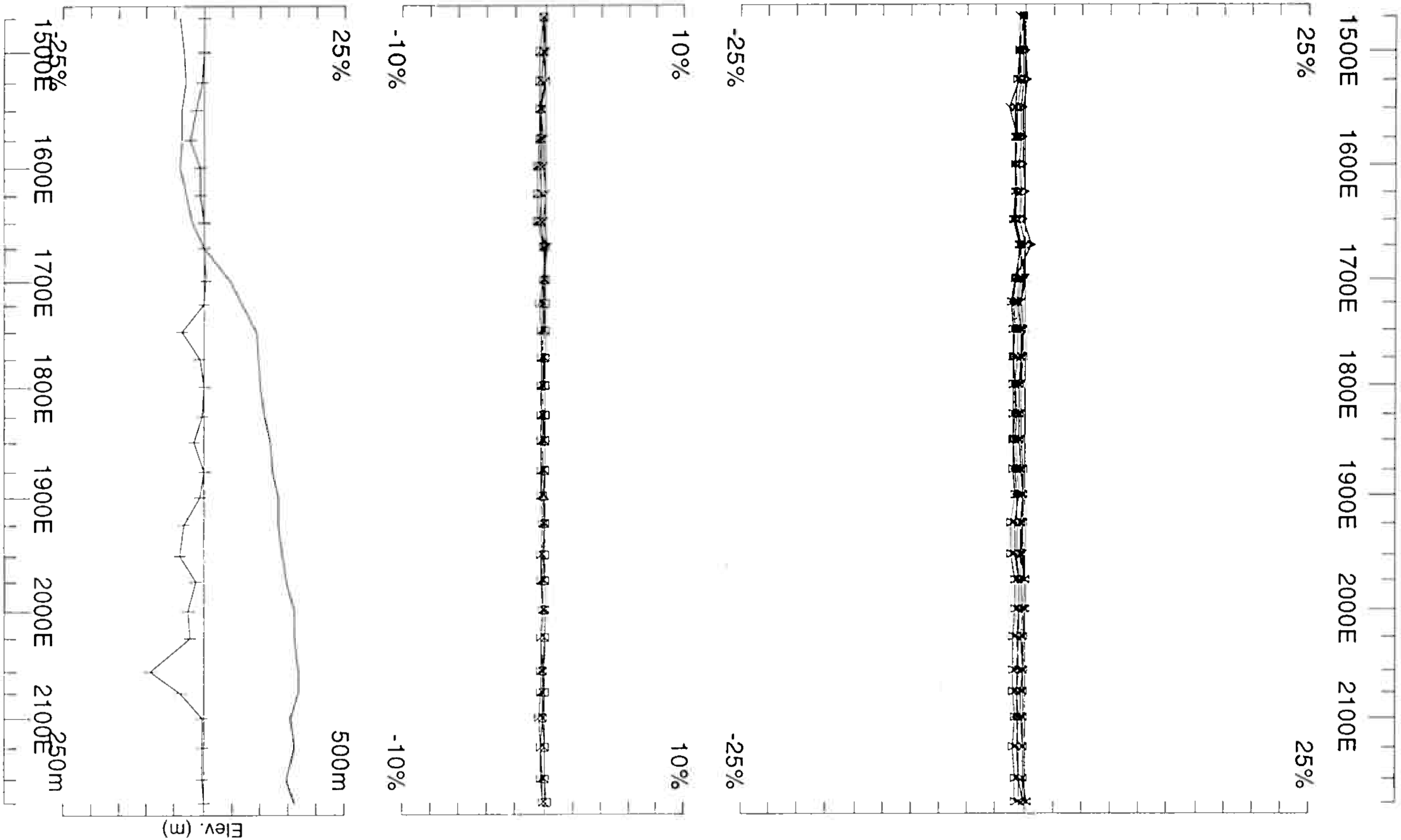
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

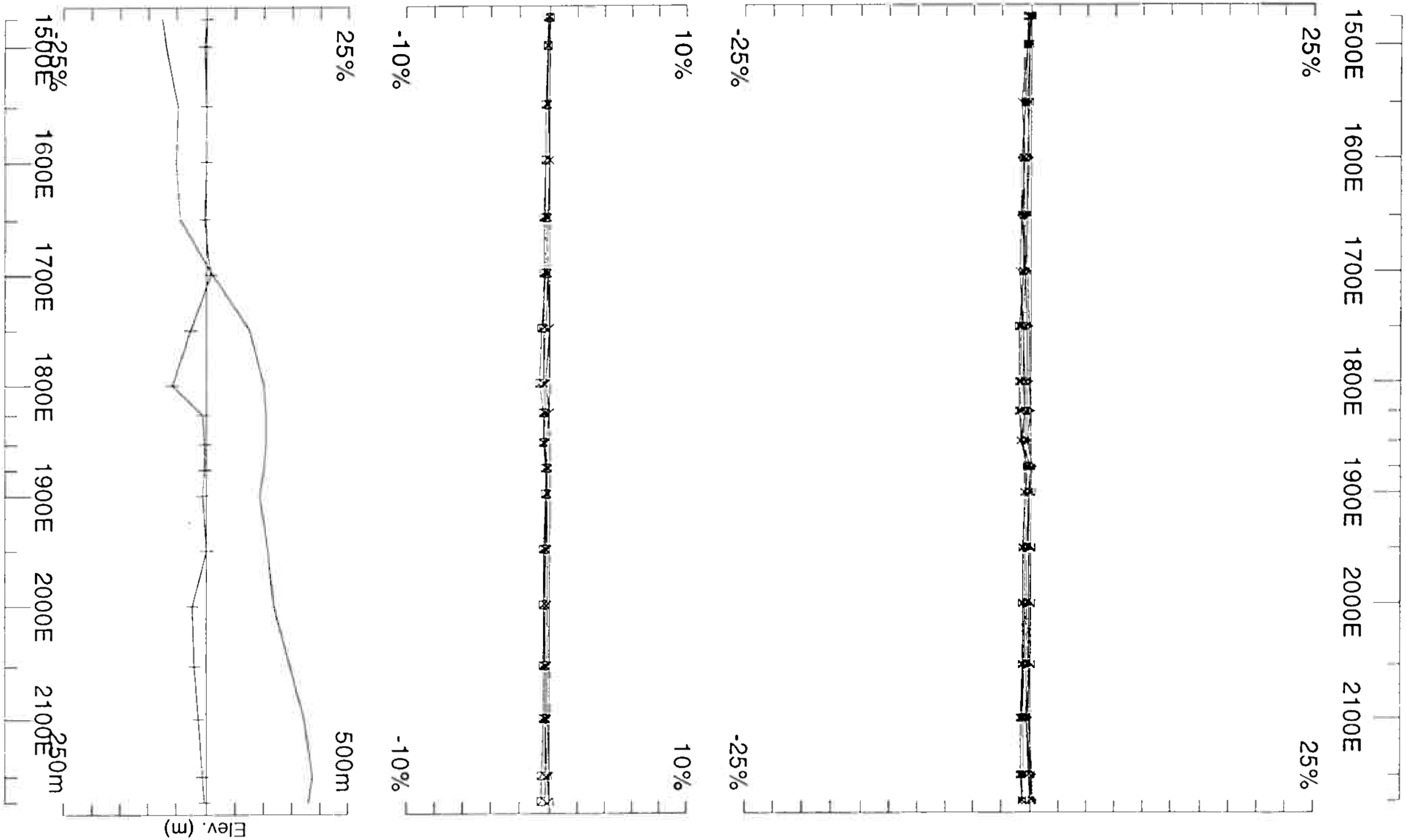
Surveyed : 31/3/6
Reduced : 29/5/6
Plotted : 13/6/6



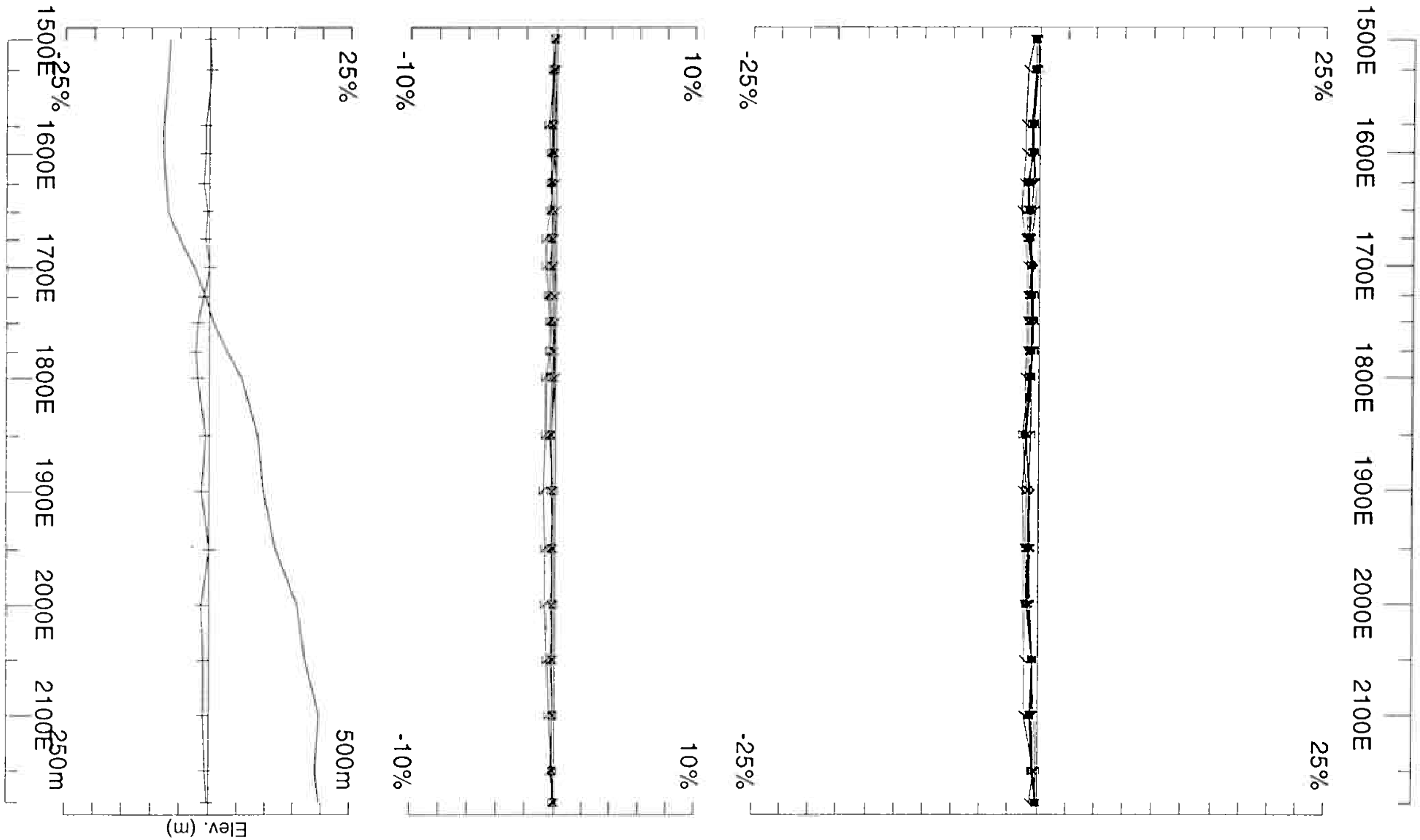
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4750N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



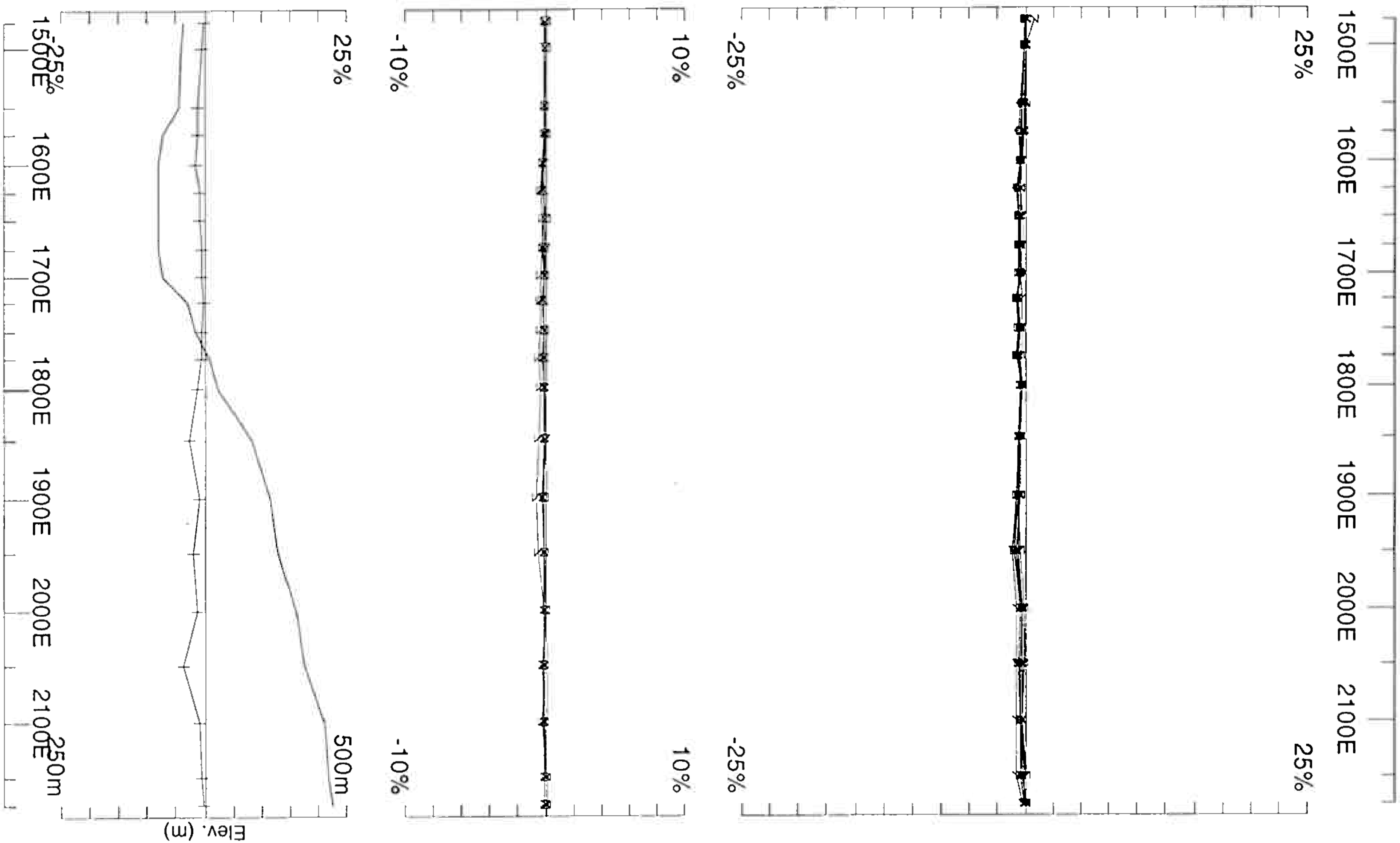
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



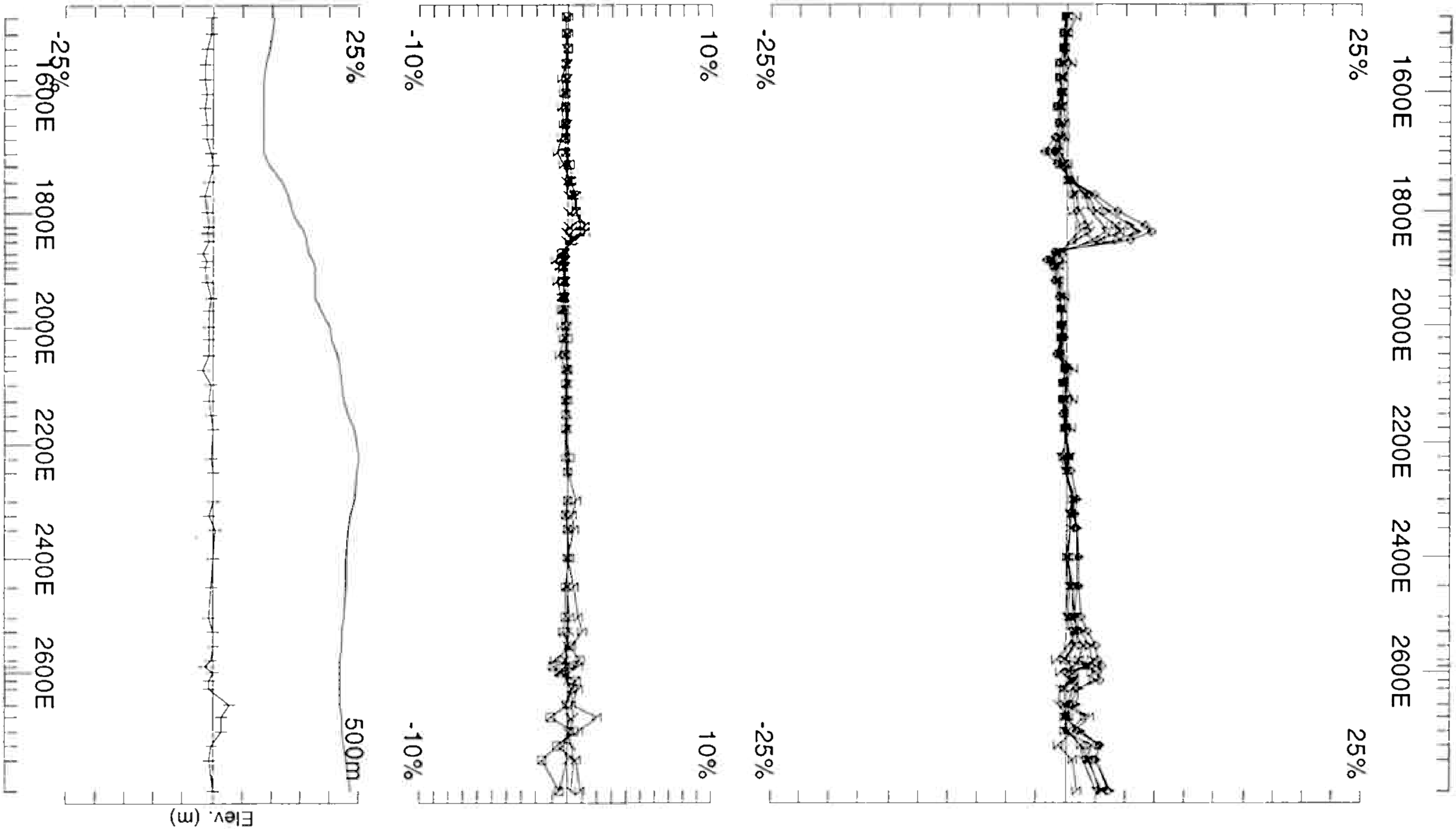
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 1/4/6 Reduced : 29/5/6 Plotted : 13/6/6



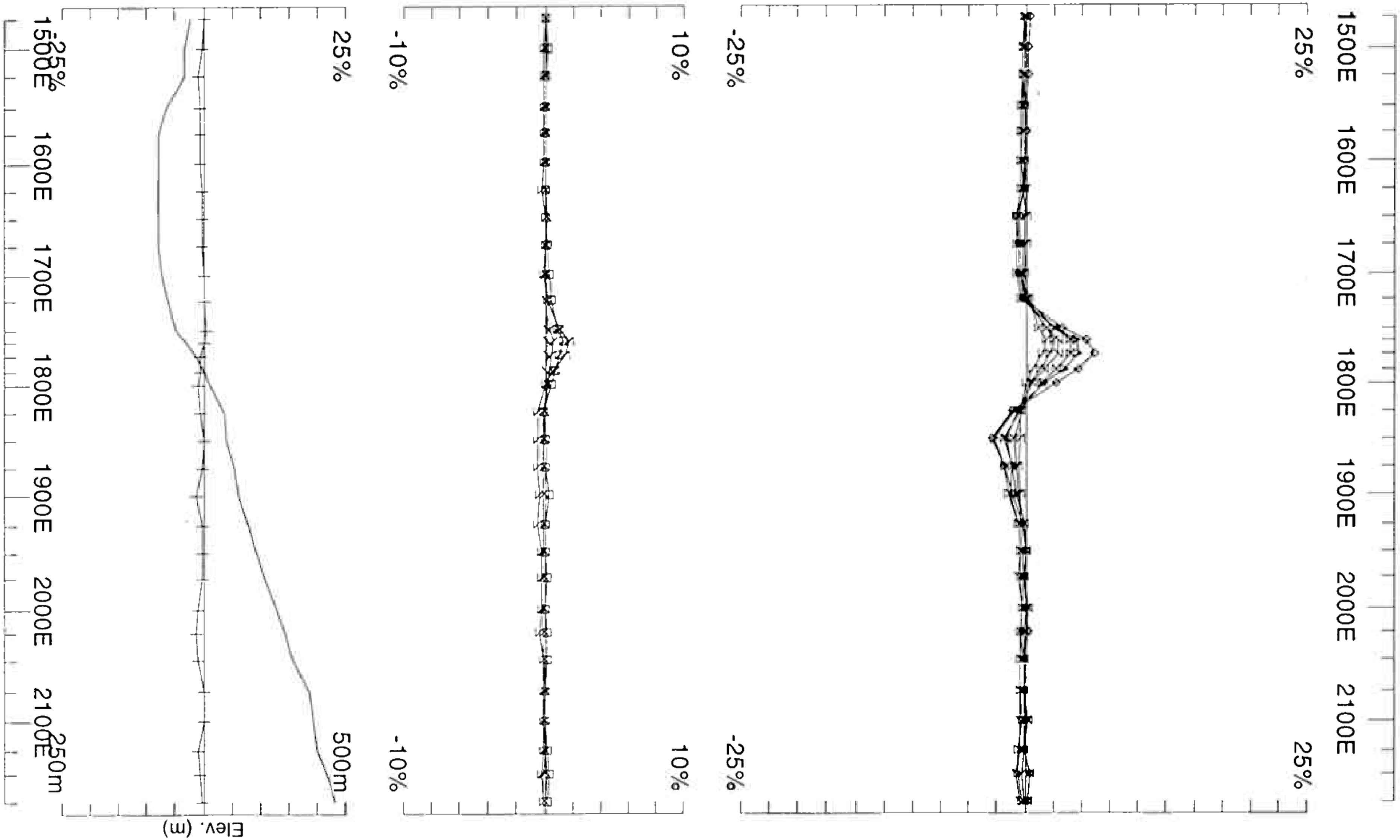
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05
Line: 5250N
Compt: Hz

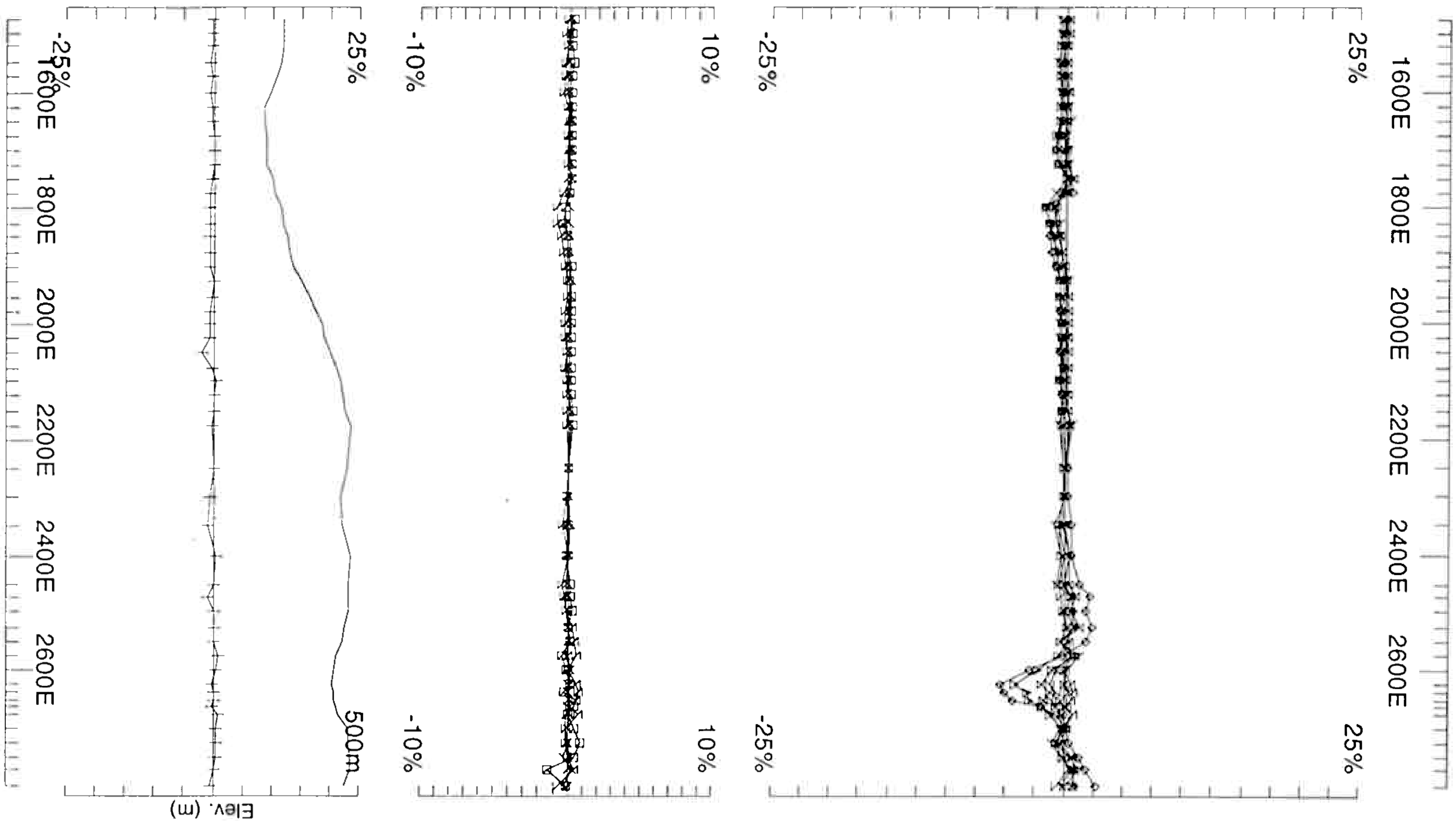
Secondary, (Chn - Ch1)/|Hp|
Contin. Norm at depth of 0 m
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

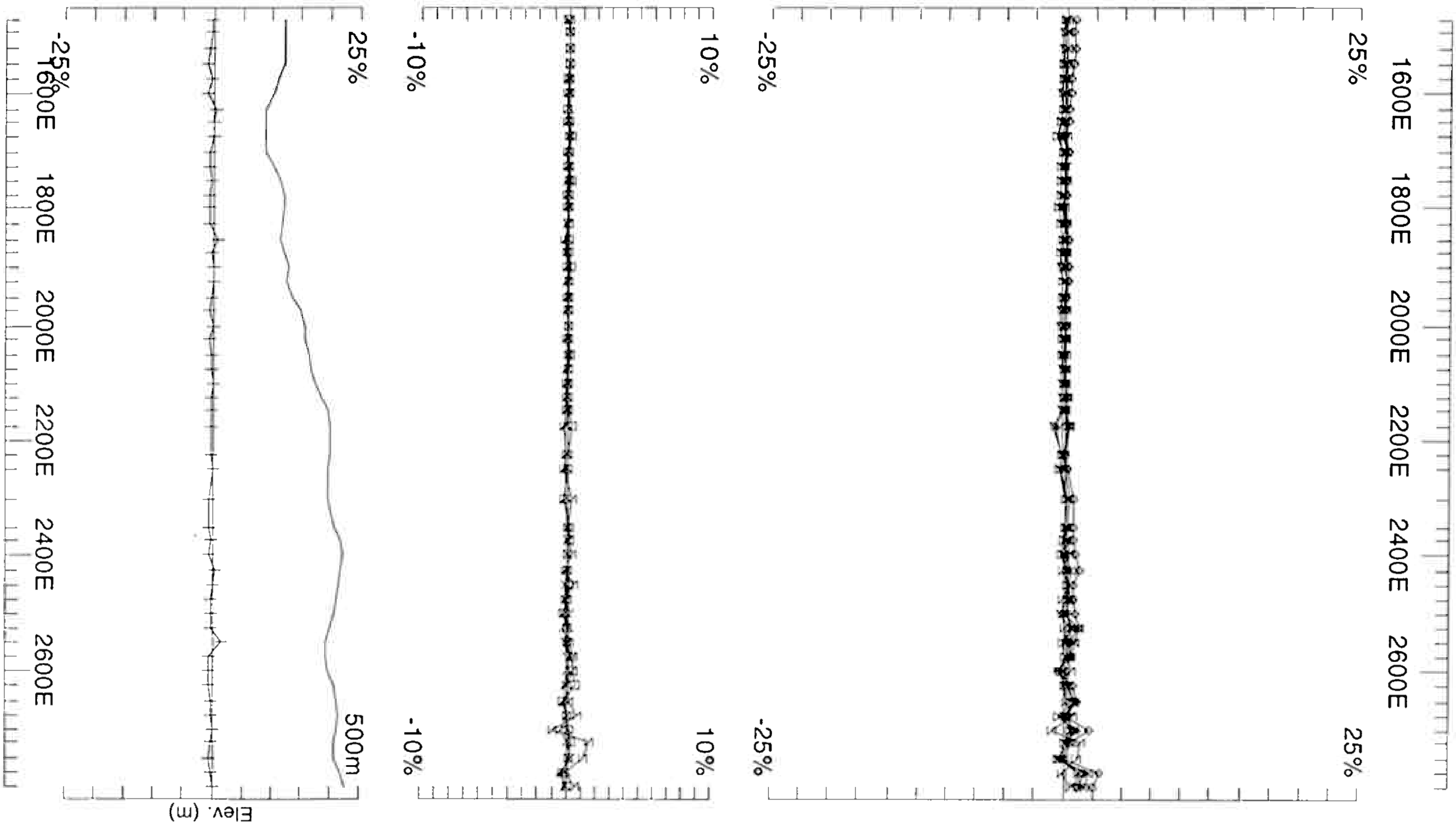
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

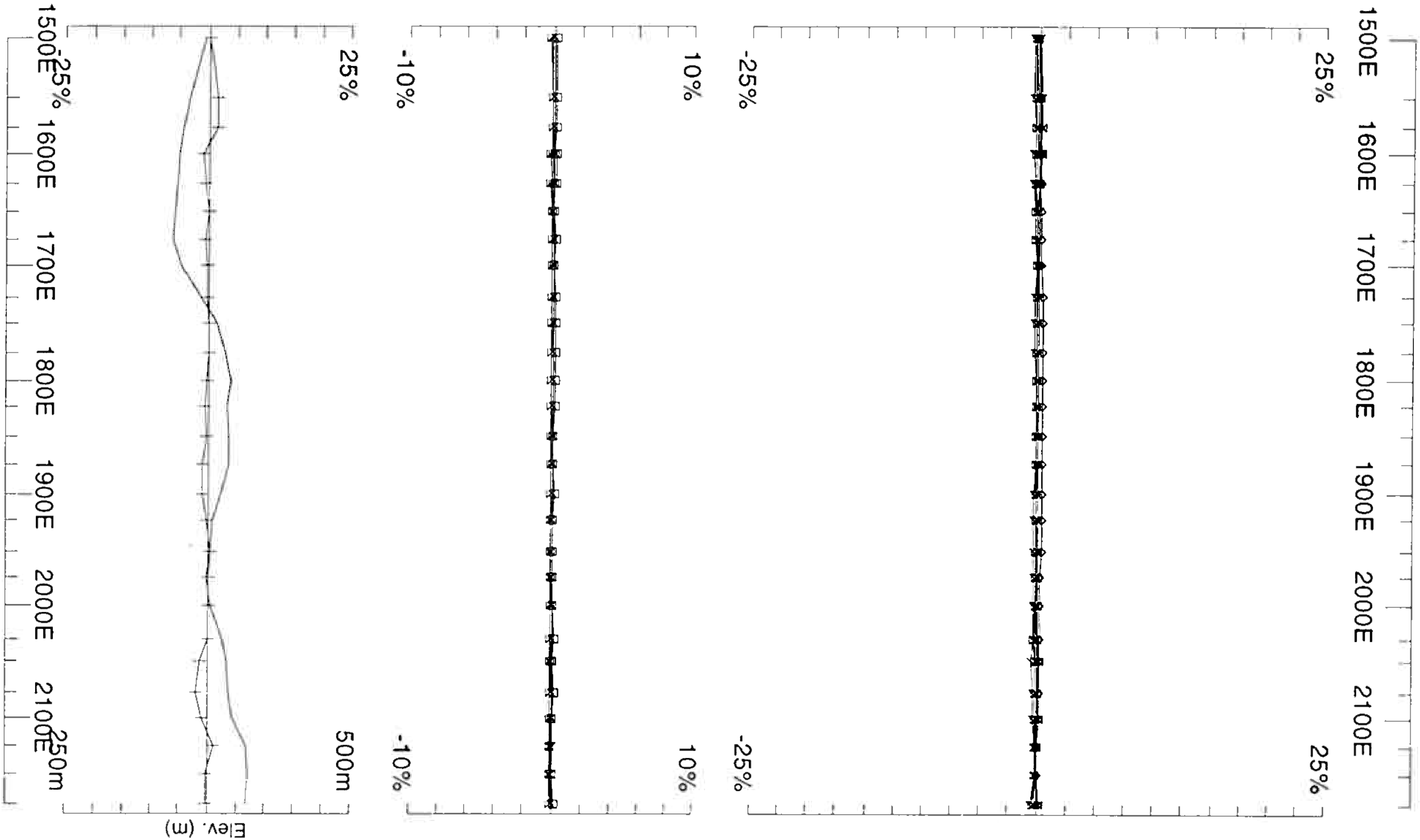
Surveyed : 31/3/6
Reduced : 29/5/6
Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5500N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6

Langedalen Grid

Loop 05: In-loop Profiles

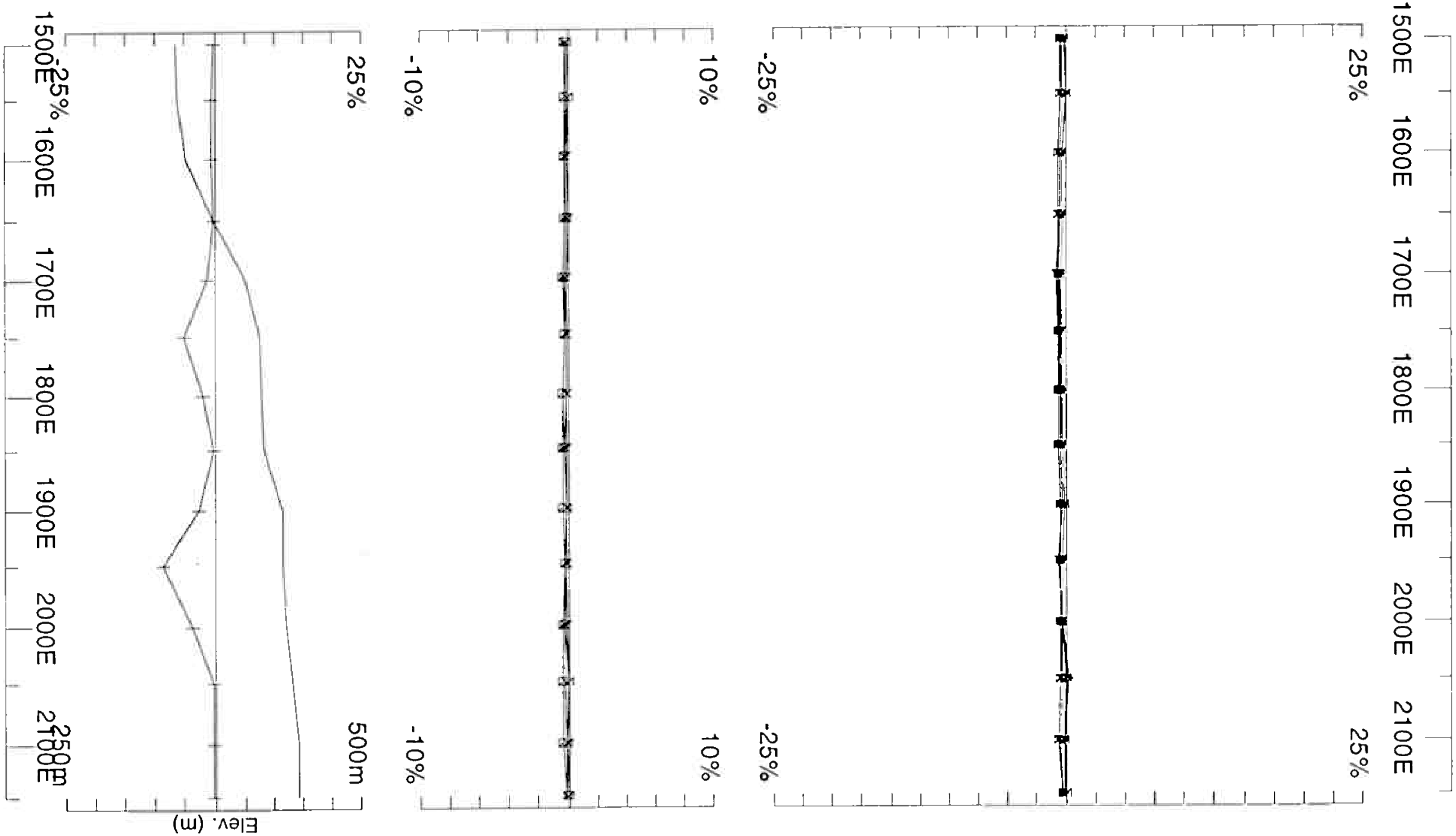
Hz
@3.251 Hz frequency

continuous norm

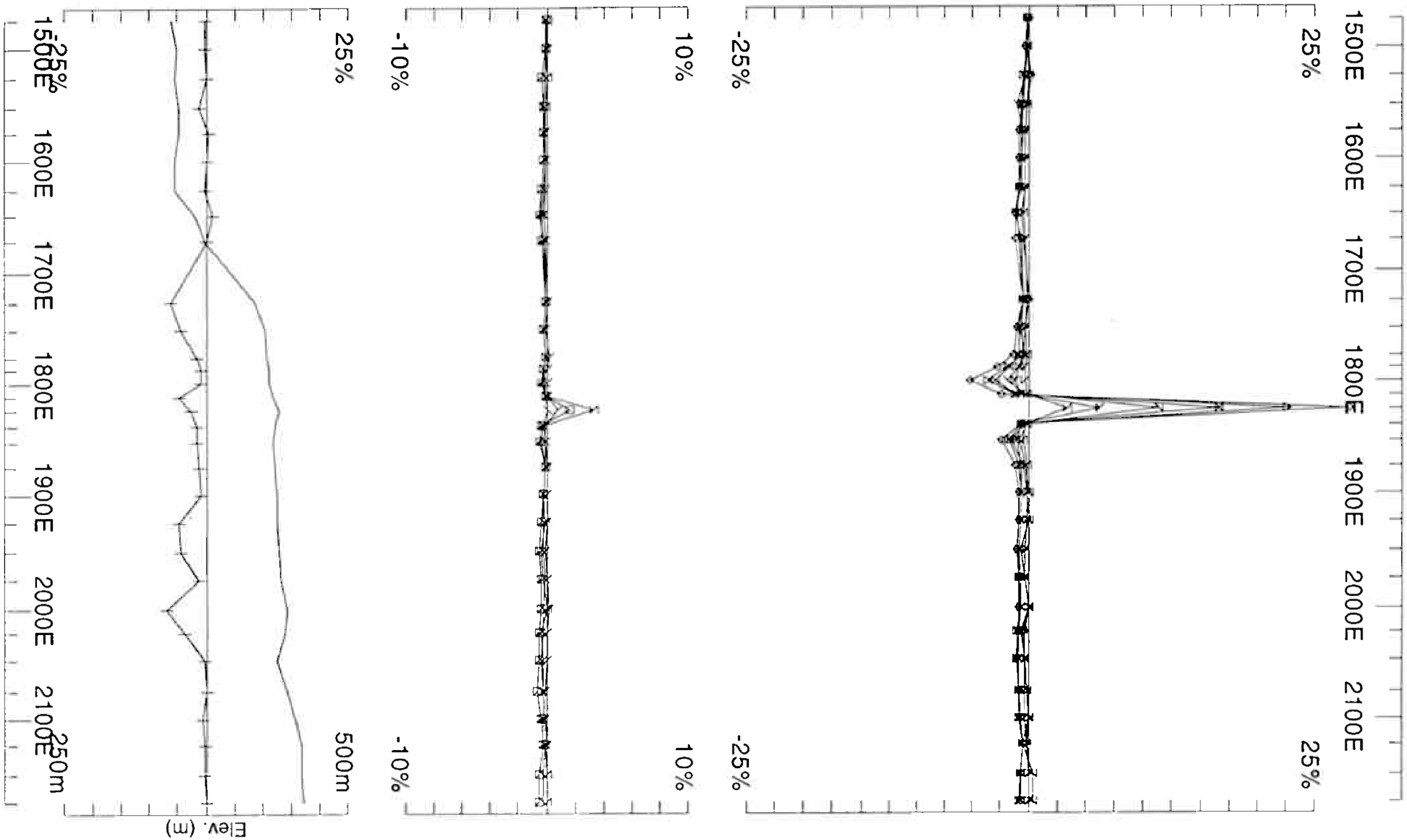
Ch1 reduced

In-Loop 05 Langedalen	Line 4600N	1500E - 2150E	650m	1:5000
	Line 4700N	1475E - 2175E	700m	1:5000
	Line 4750N	1650E - 2100E	450m	1:5000
	Line 4800N	1475E - 2175E	700m	1:5000
	Line 4900N	1475E - 2175E	700m	1:5000
	Line 5000N	1500E - 2175E	675m	1:5000
	Line 5100N	1475E - 2175E	700m	1:5000
	Line 5200N	1475E - 2175E	700m	1:5000
	Line 5250N	1475E - 2175E	700m	1:5000
	Line 5300N	1450E - 2175E	725m	1:5000
	Line 5400N	1475E - 2175E	700m	1:5000
	Line 5500N	1500E - 2175E	675m	1:5000
	Langedalen	In-Loop 05 Total	8075m	

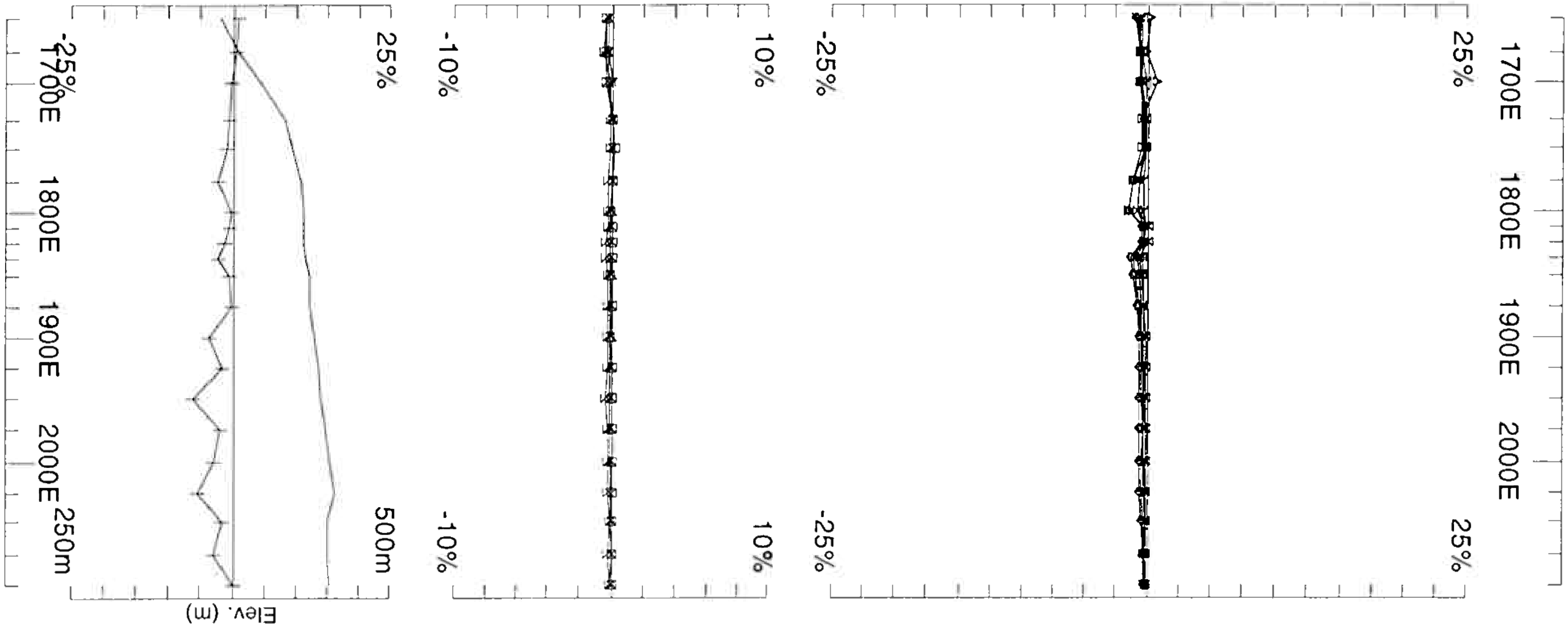
Loop 05 - continuous norm



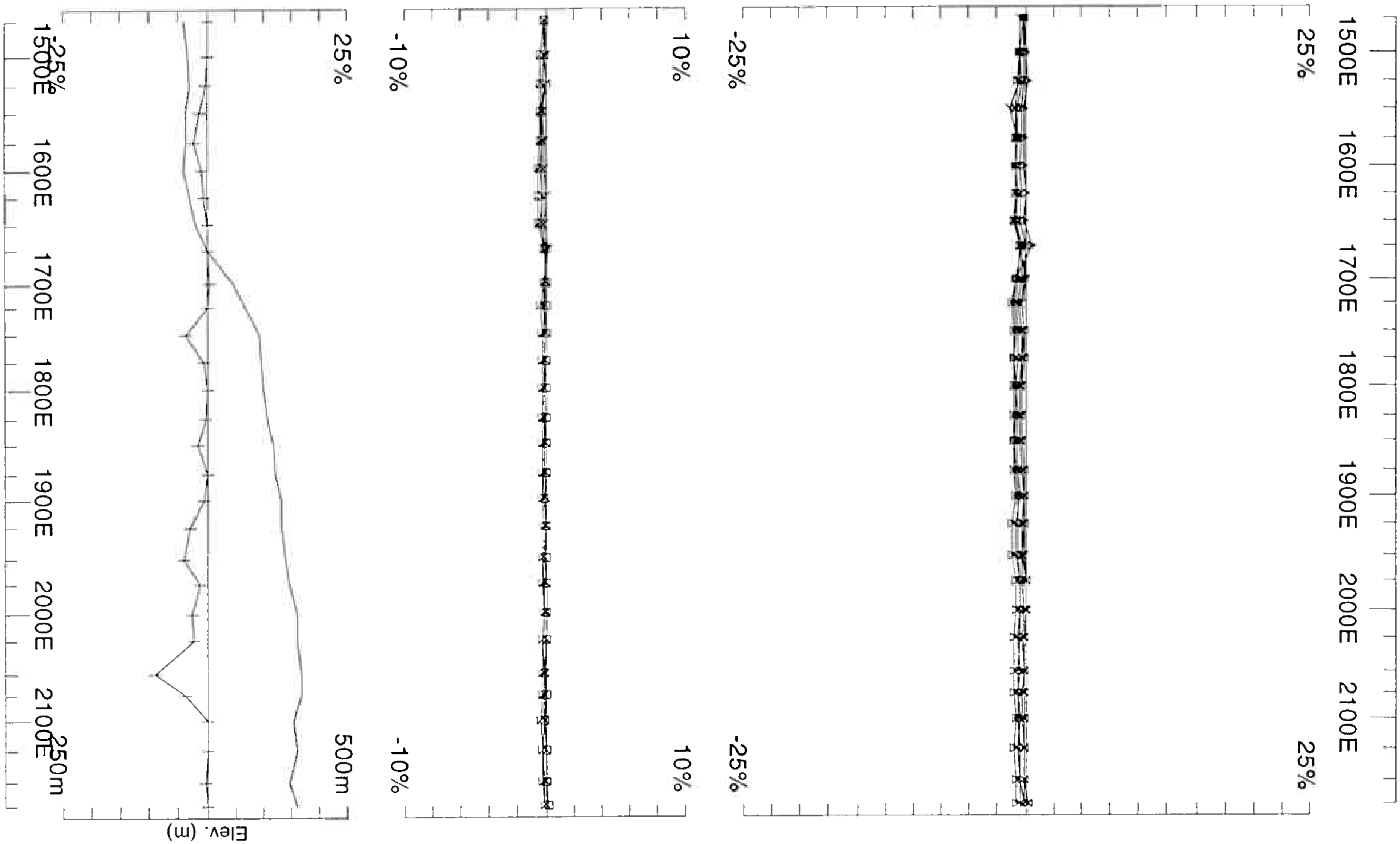
Loop: 05 Line: 4600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE — Job 0612 — Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4700N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4750N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6

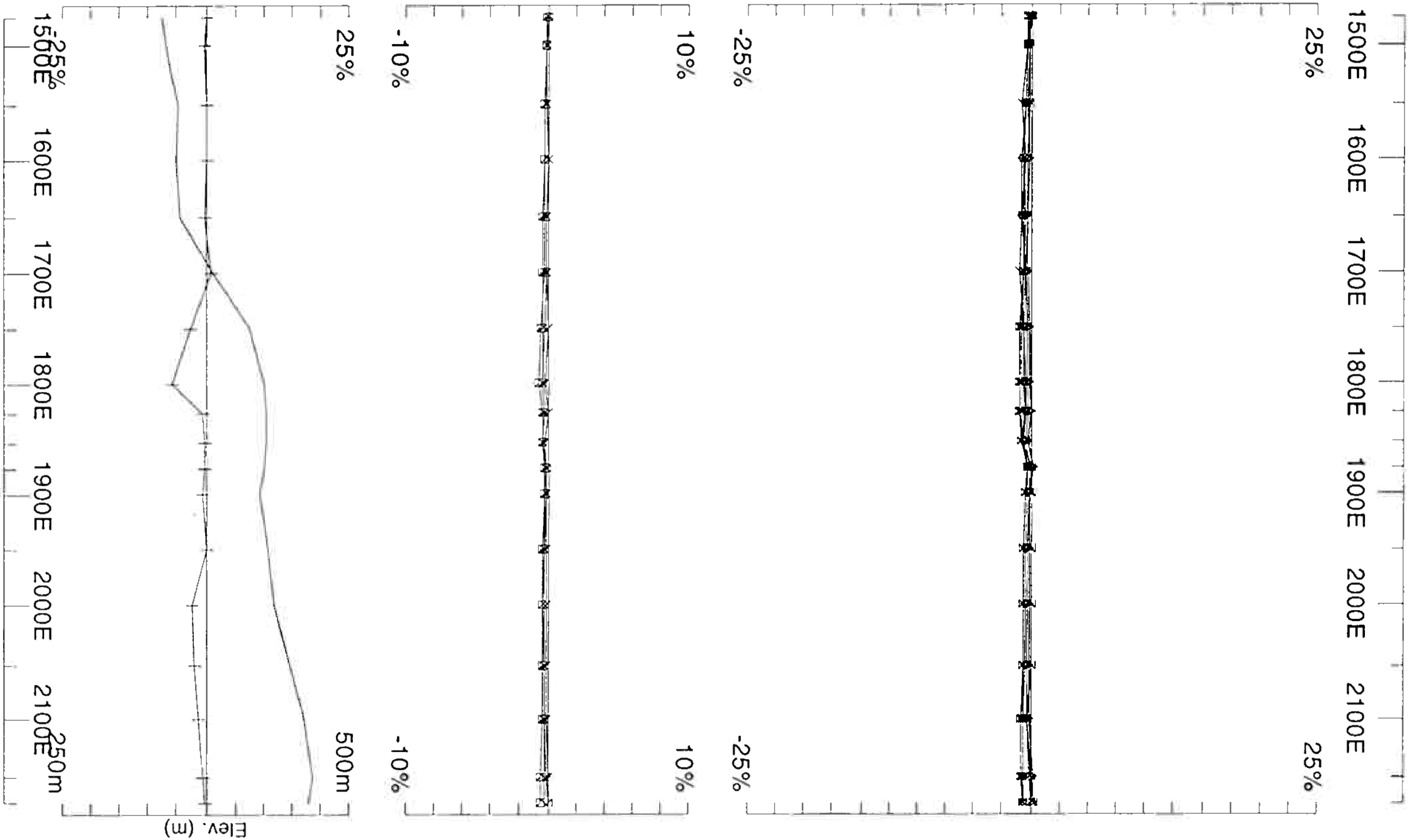


Loop: 05
Line: 4800N
Compt: Hz

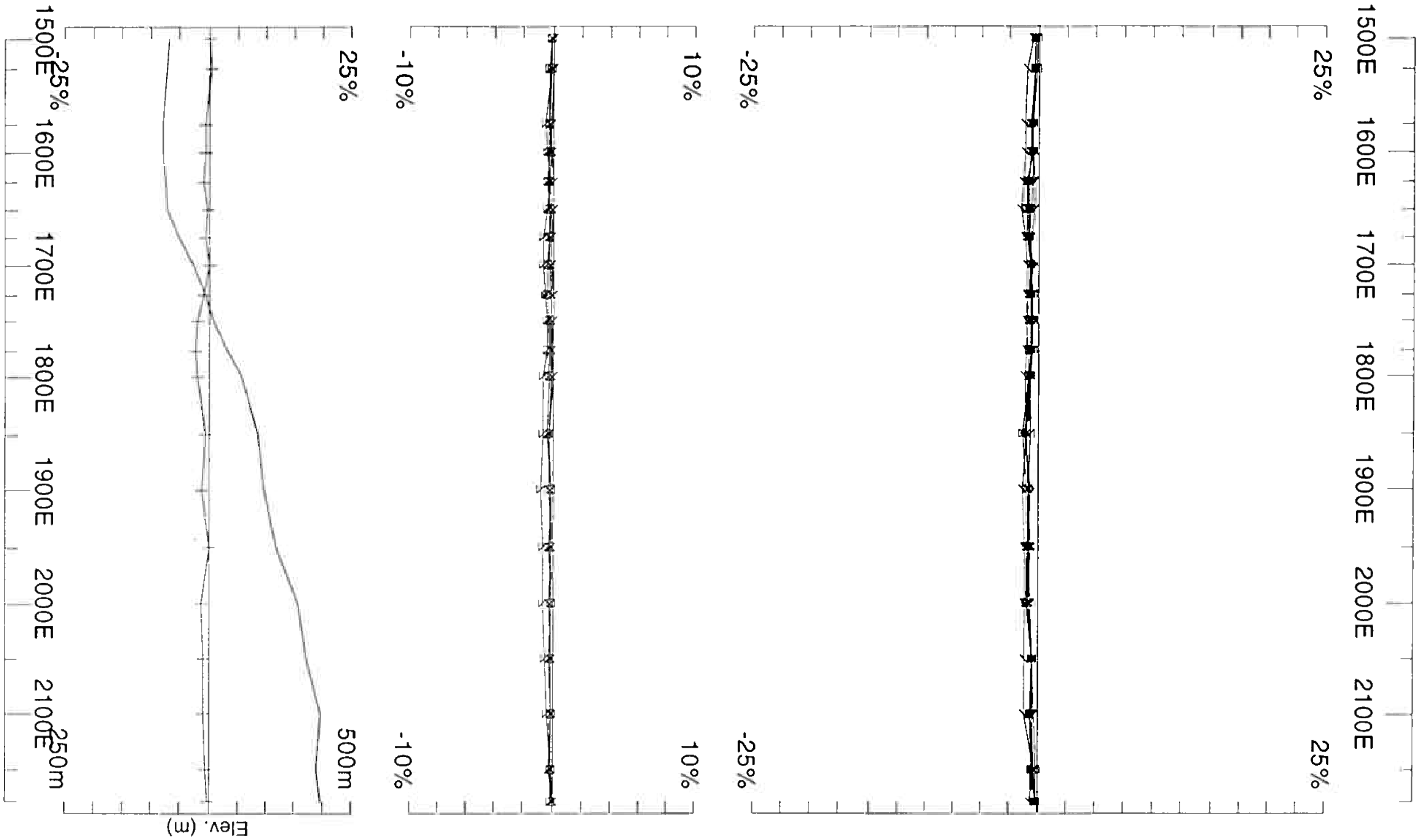
Secondary, (Chn - Ch1)/|Hp|
Contin. Norm at depth of 0 m
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

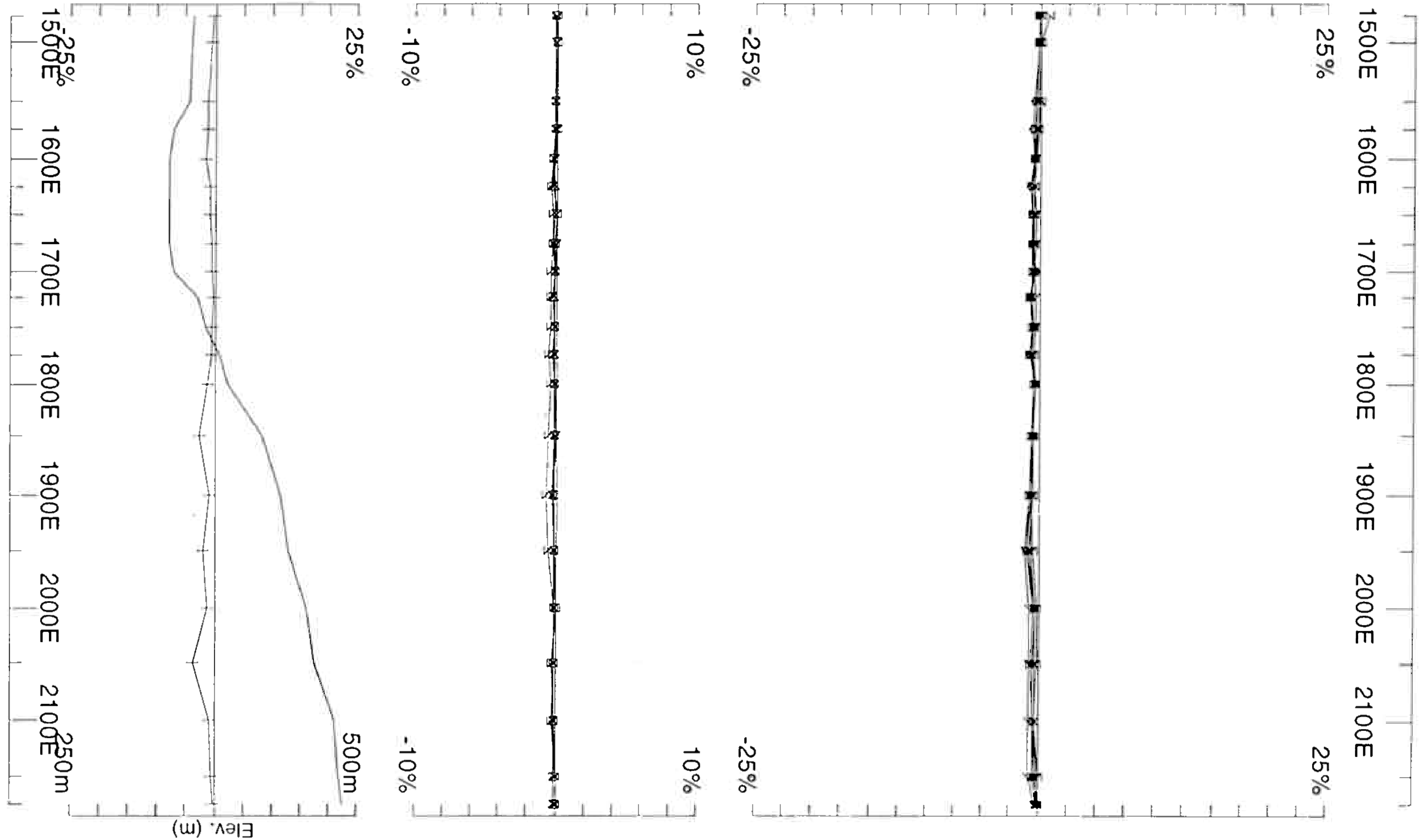
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE
Job 0612
Plotted : 13/6/6



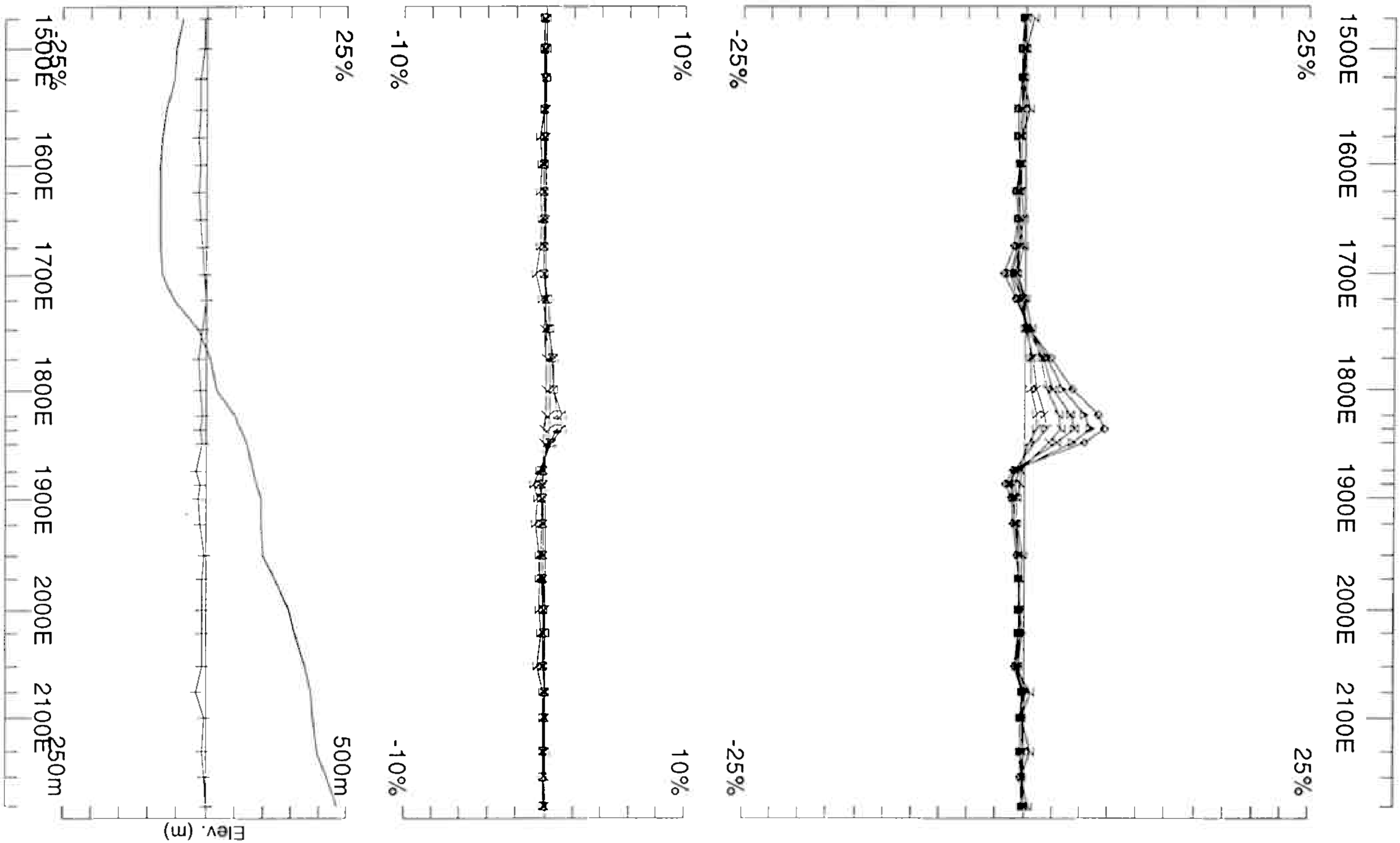
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 1/4/6 Reduced : 29/5/6 Plotted : 13/6/6



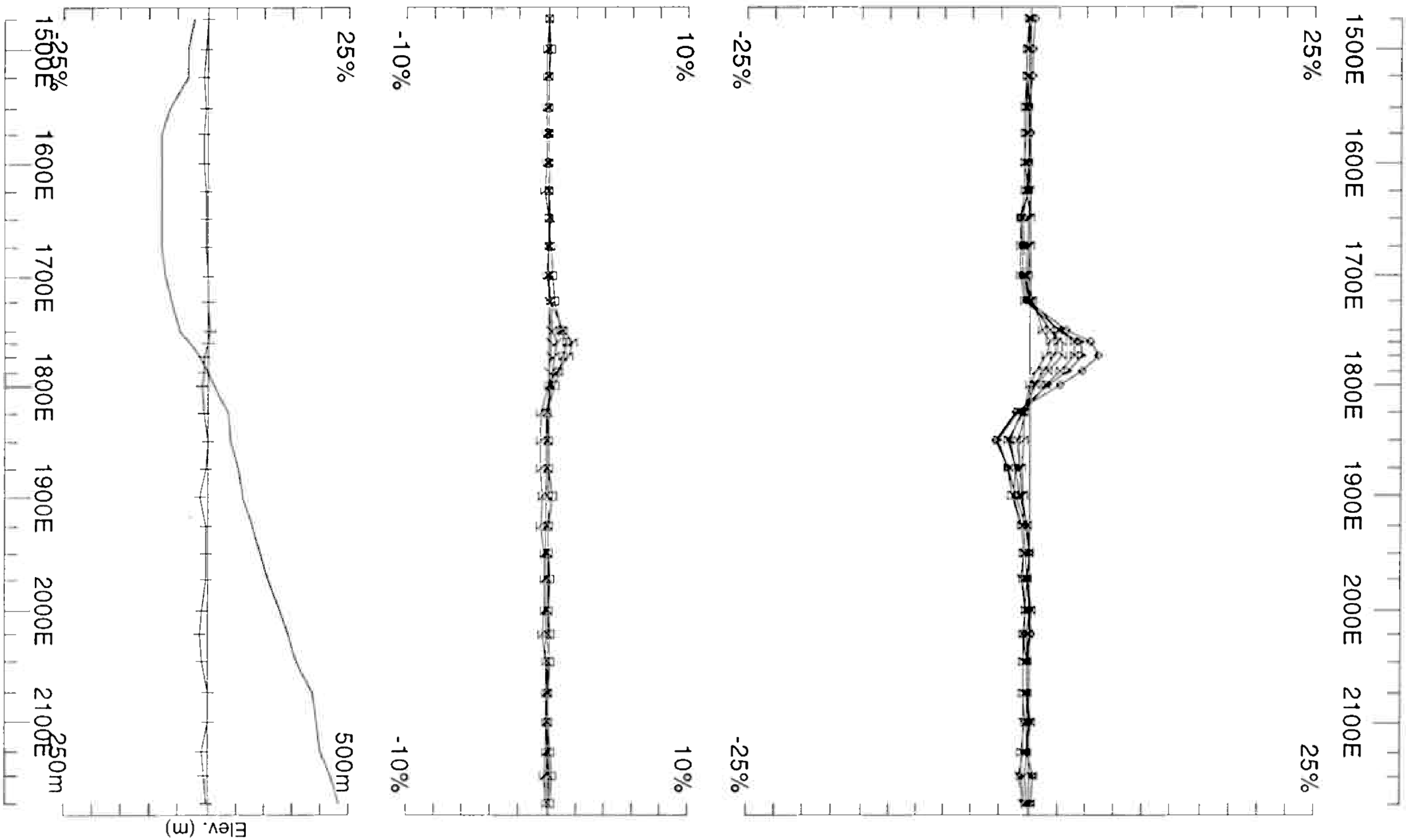
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



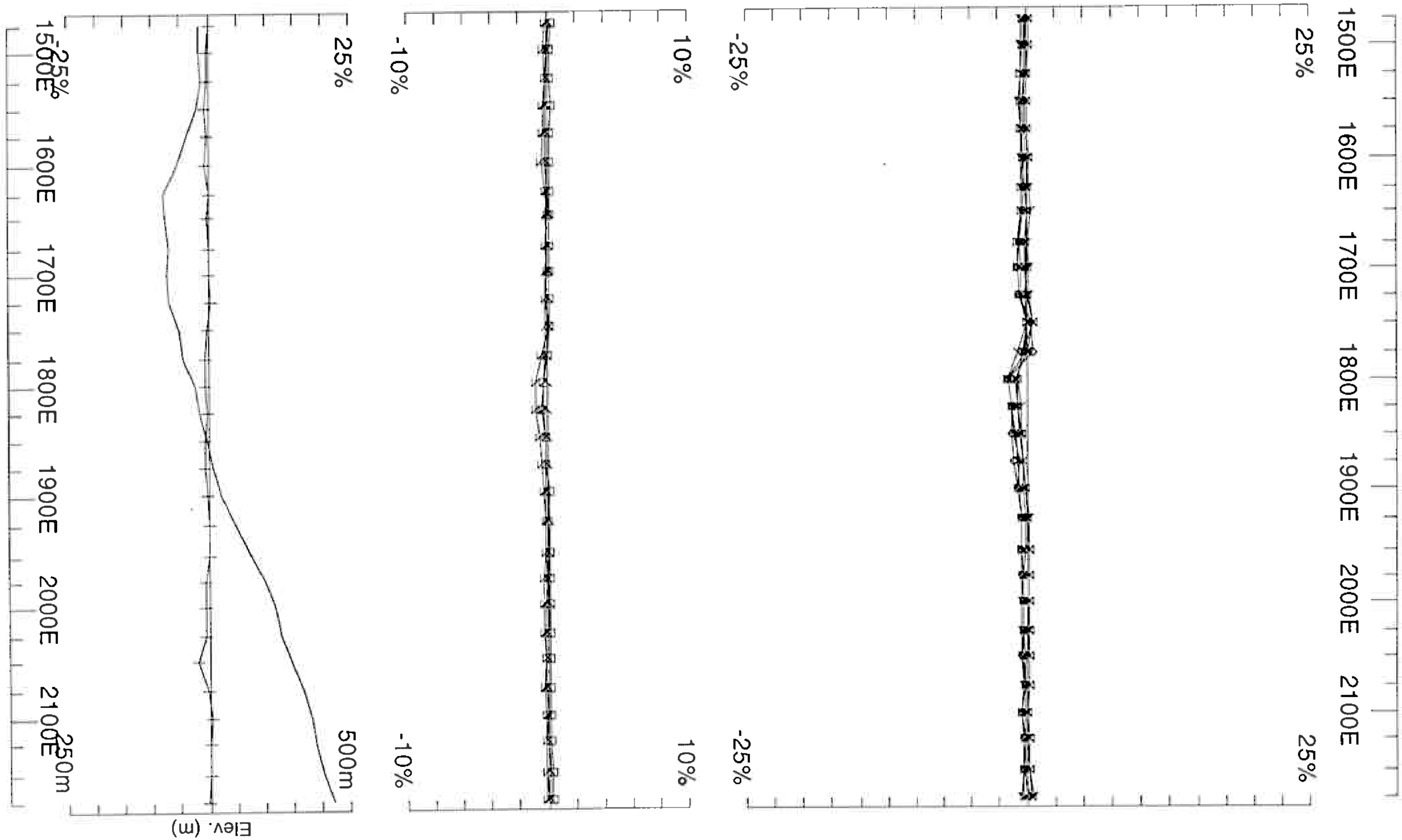
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



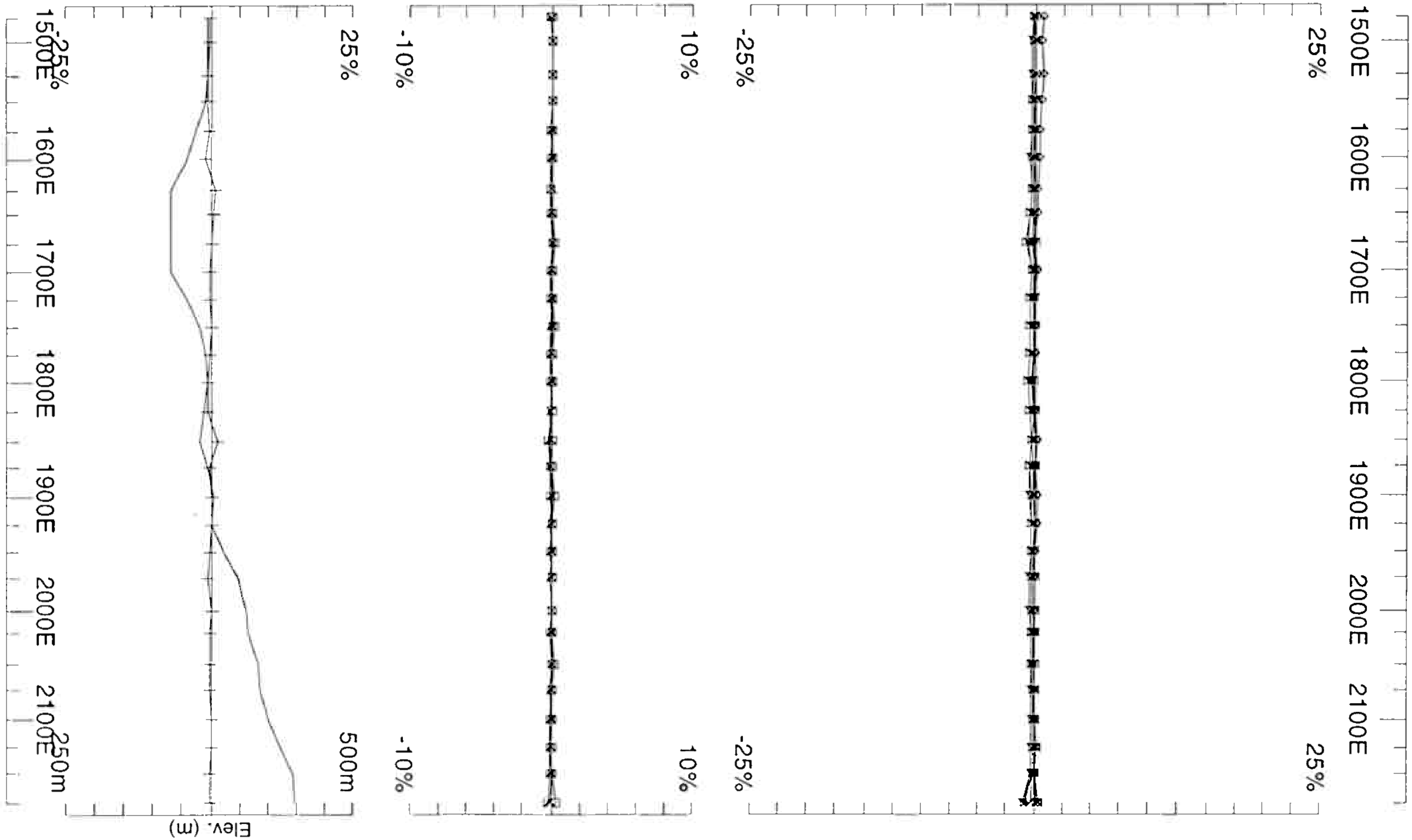
Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



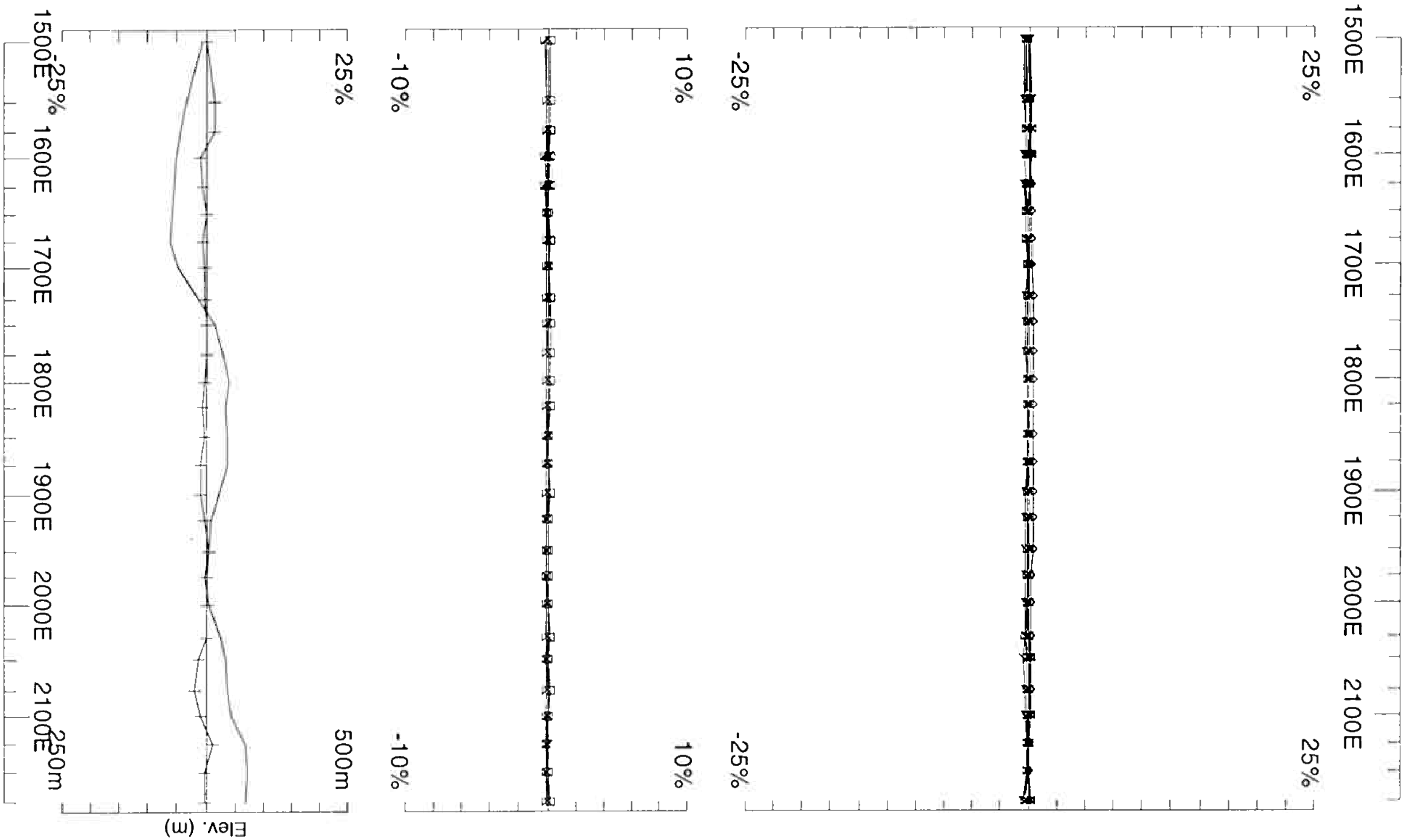
Loop: 05 Line: 5250N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5500N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6

Langedalen Grid

Loop 05: Off-loop Profiles

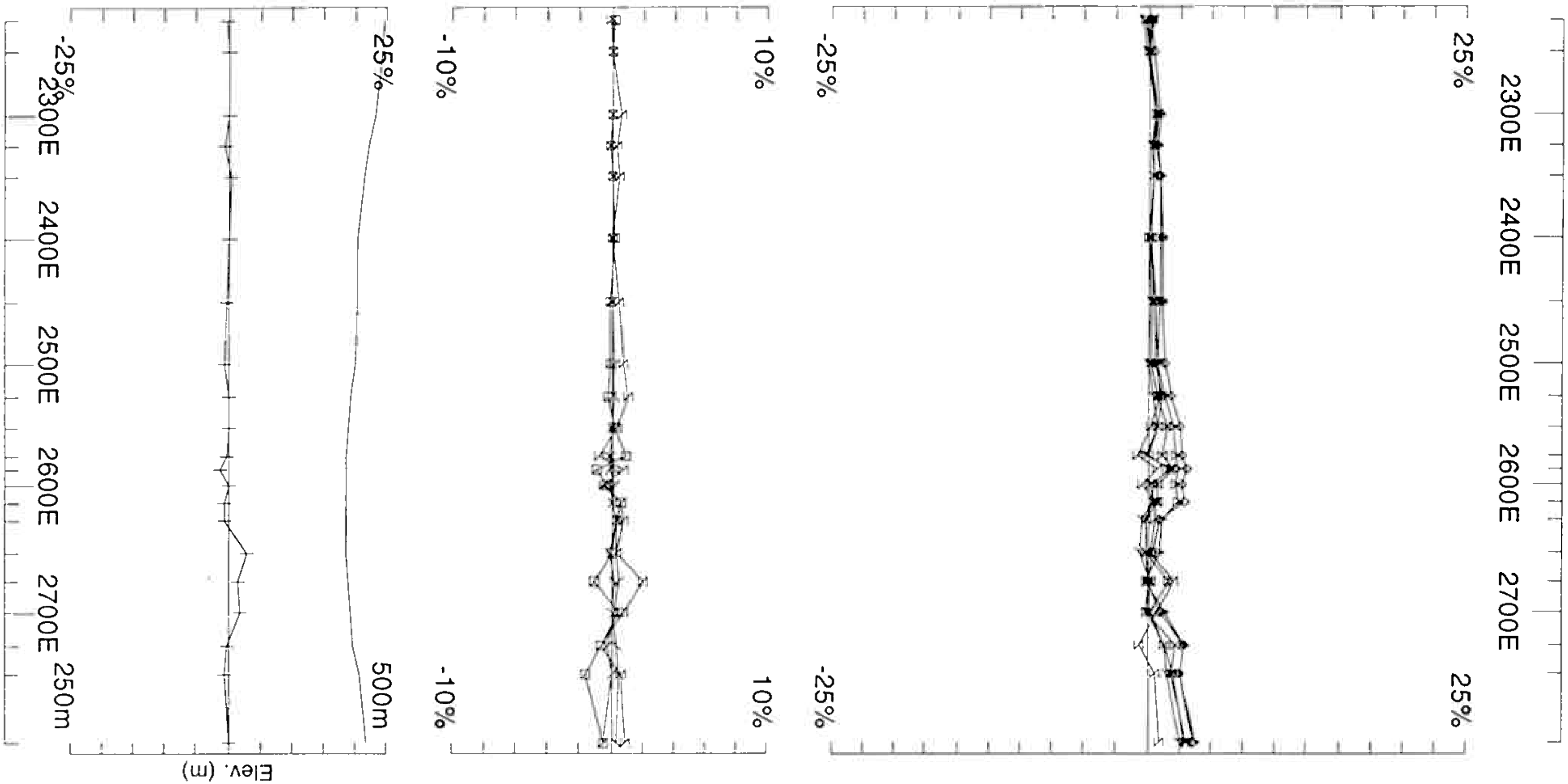
Hz
@3.251 Hz frequency

continuous norm

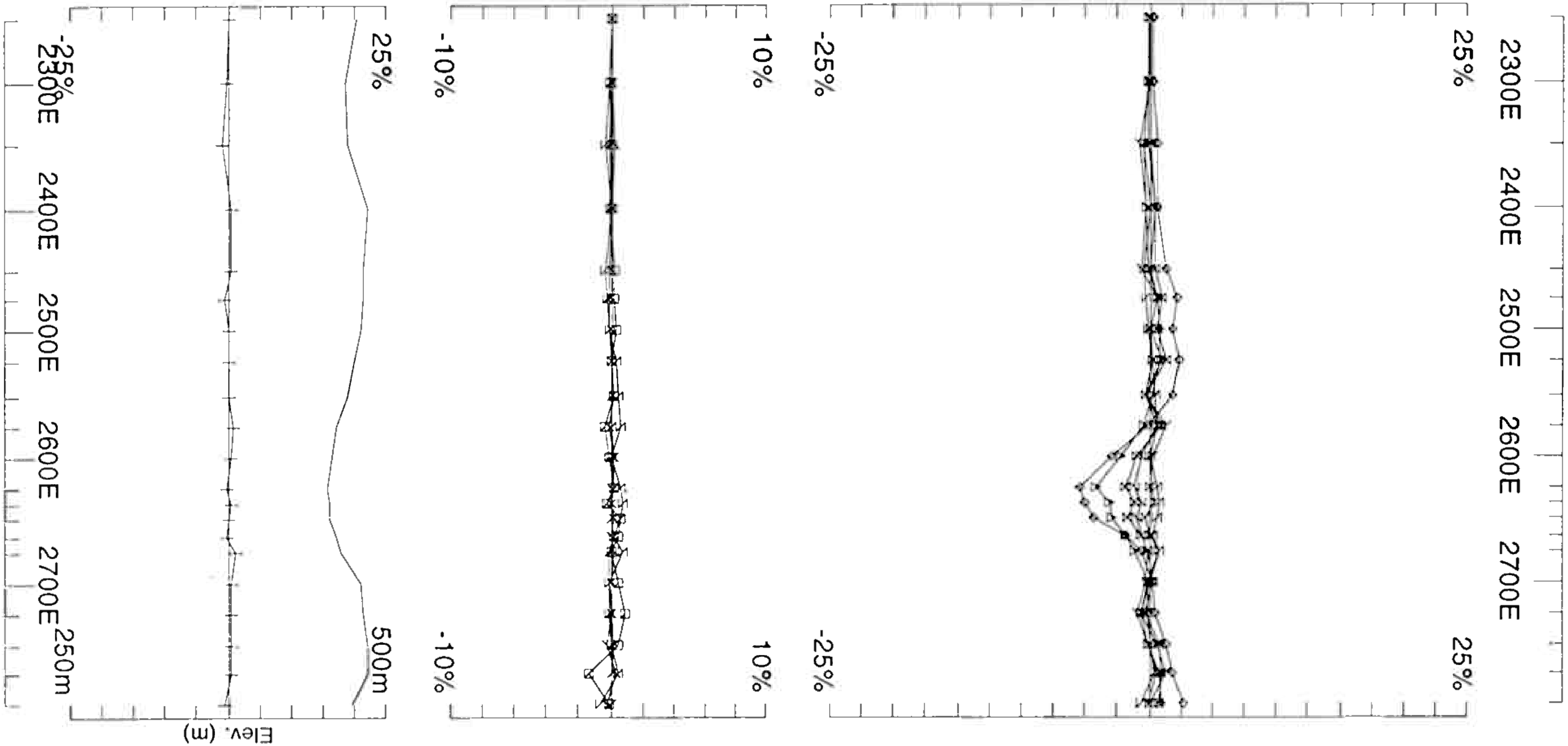
Ch1 reduced

Off-Loop 05 Langedalen	Line 5200N	2225E - 2800E	575m	1:5000
	Line 5300N	2250E - 2800E	550m	1:5000
	Line 5400N	2225E - 2800E	575m	1:5000
	Langedalen	Off-Loop 05 Total	1700m	

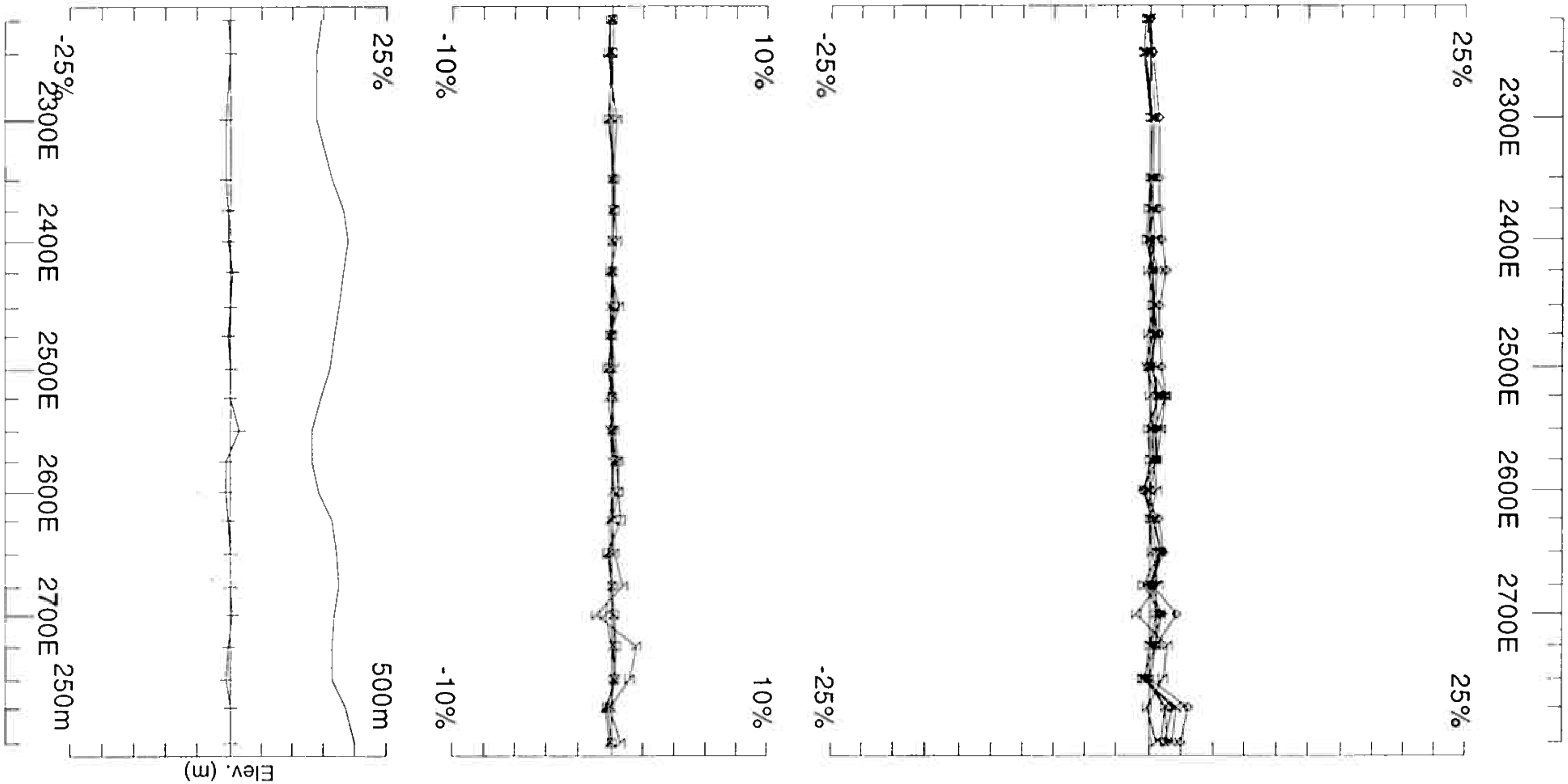
Loop 05 - continuous norm



Loop: 05 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 5400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: Full Profiles

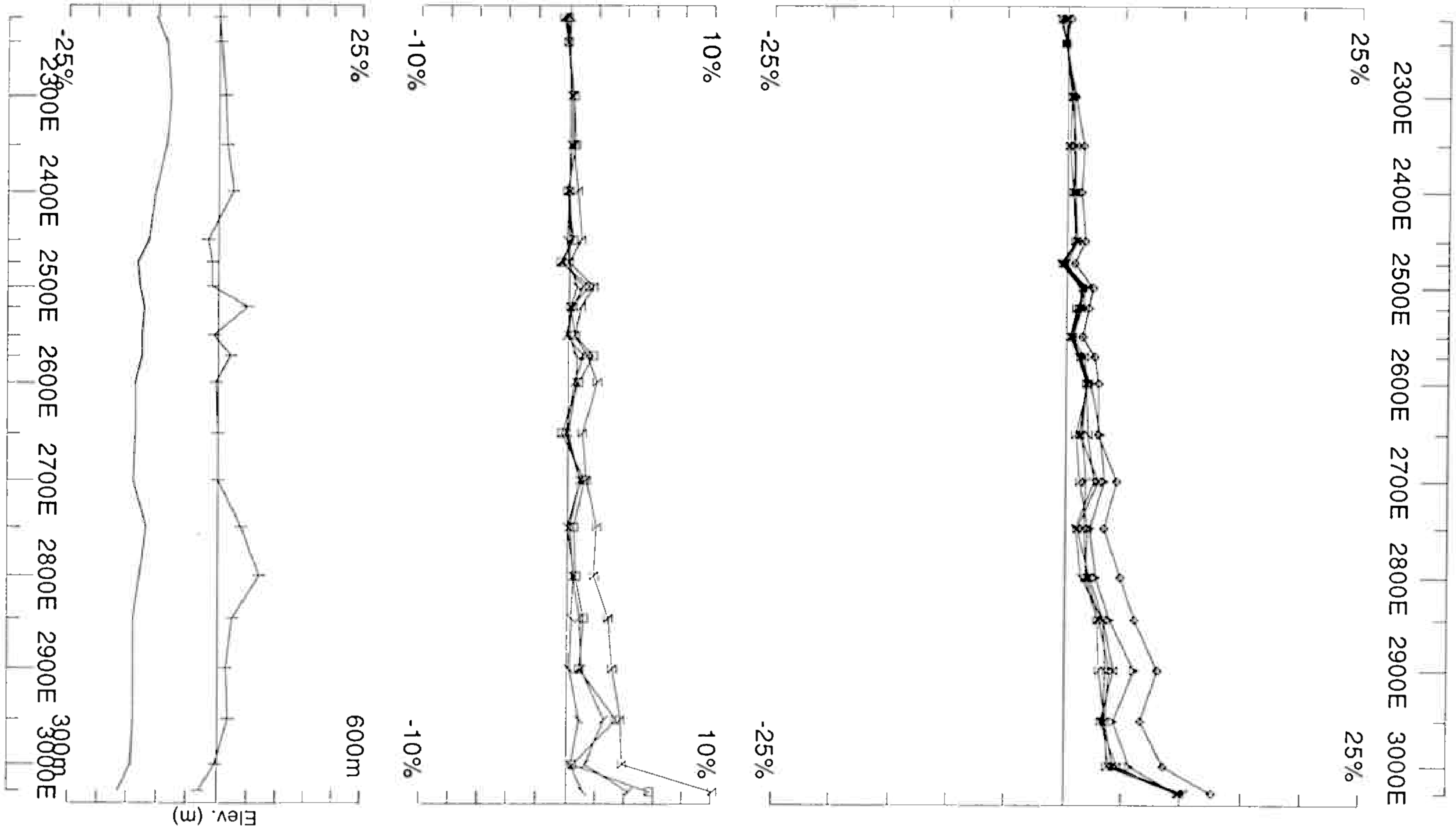
Hz
@3.251 Hz frequency

continuous norm

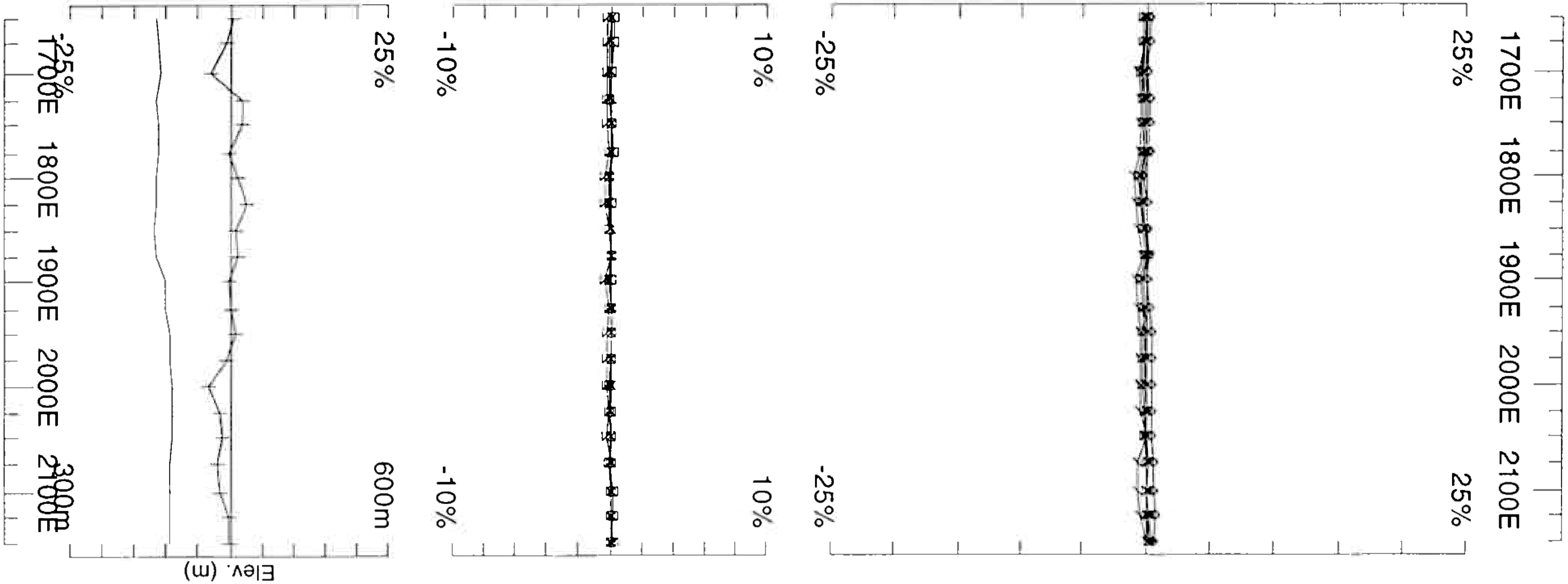
Ch1 reduced

Loop 06 Langedalen	Line 3600N	2225E - 3025E	800m	1:6000
	Line 3700N	1650E - 2150E	500m	1:6000
	Line 3800N	1475E - 2175E	700m	1:11000
		2225E - 3025E	800m	
	Line 3900N	1650E - 2150E	500m	1:6000
	Line 4000N	1475E - 2175E	700m	1:11000
		2250E - 3025E	775m	
	Line 4100N	1500E - 2150E	650m	1:11000
		2250E - 2900E	650m	
	Line 4200N	1500E - 2150E	650m	1:11000
		2250E - 2750E	500m	
	Line 4300N	1475E - 2150E	675m	1:11000
		2250E - 2575E	325m	
	Line 4400N	1475E - 2175E	700m	1:6000
	Line 4500N	1500E - 2150E	650m	1:6000
	Langedalen	Loop 06 Total	9575m	

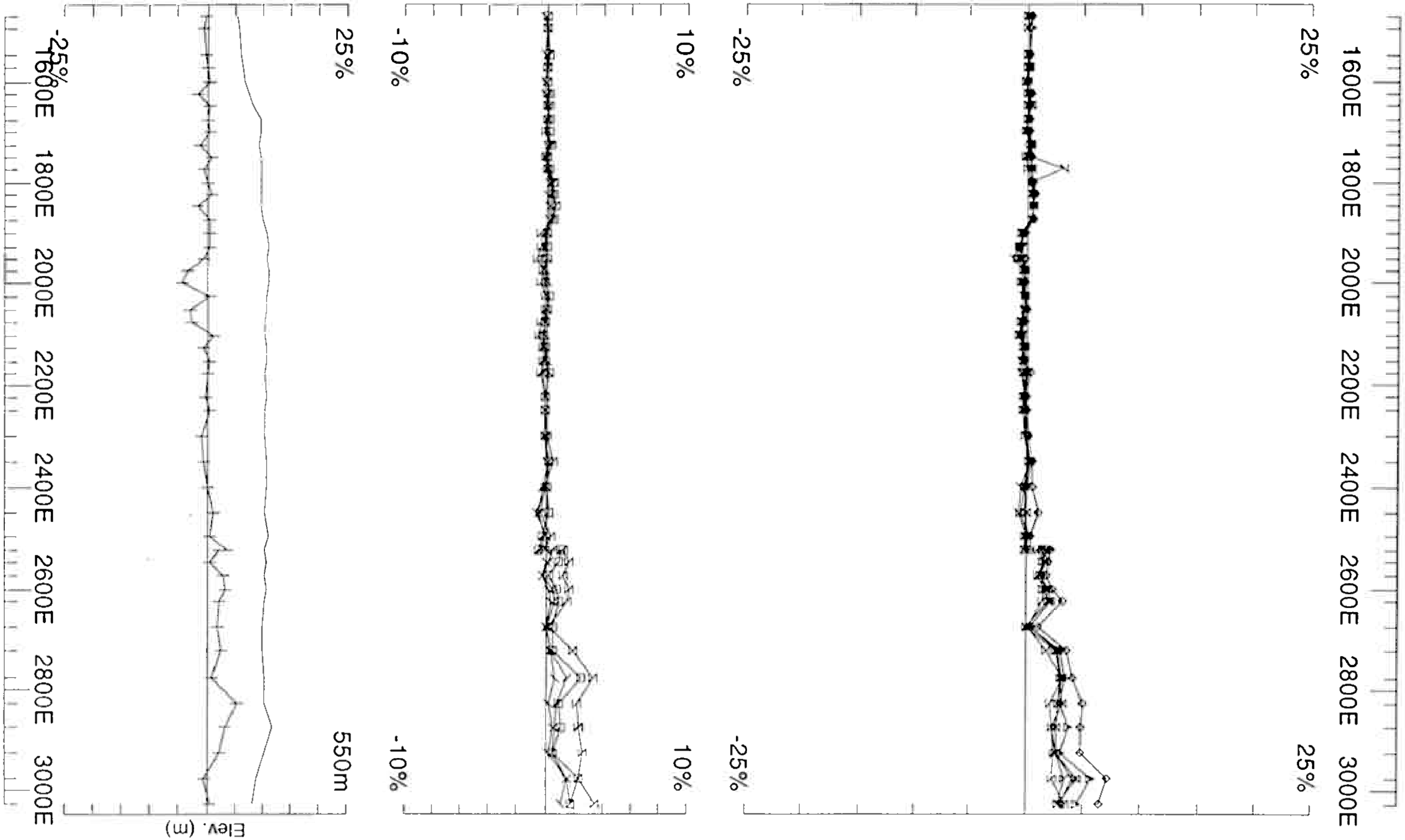
Loop 06 - continuous norm



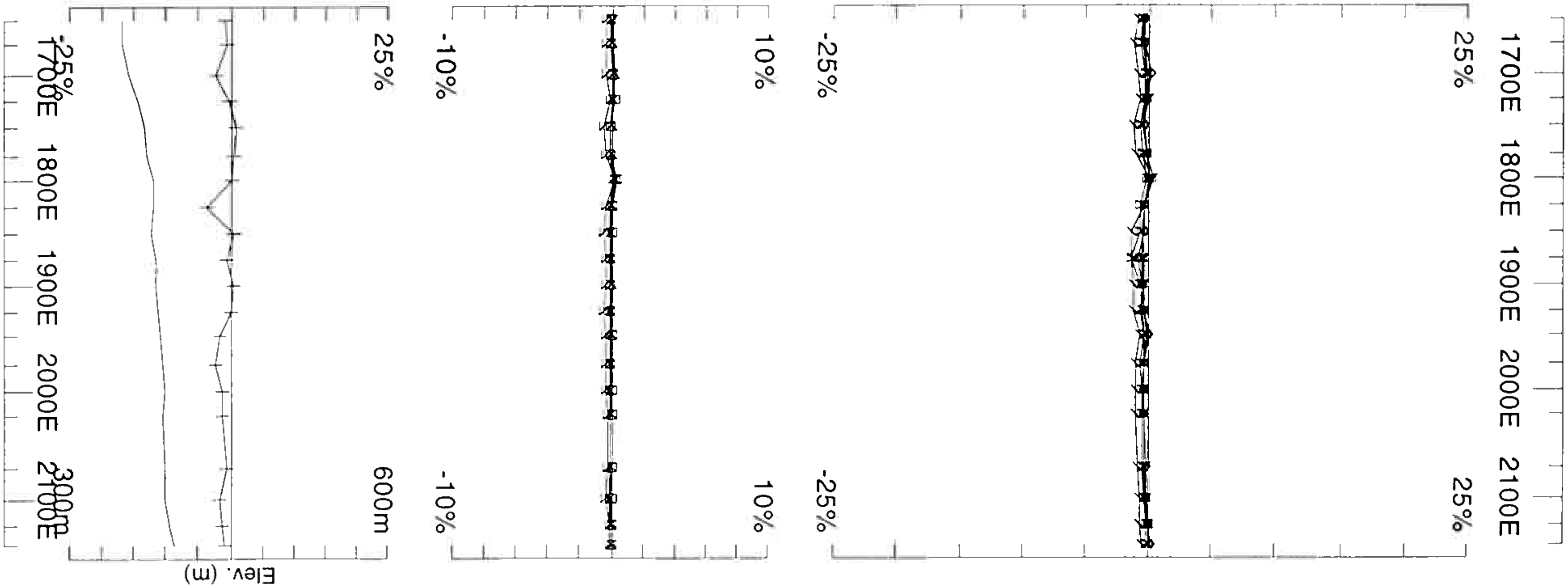
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 29/5/6 Plotted : 13/6/6



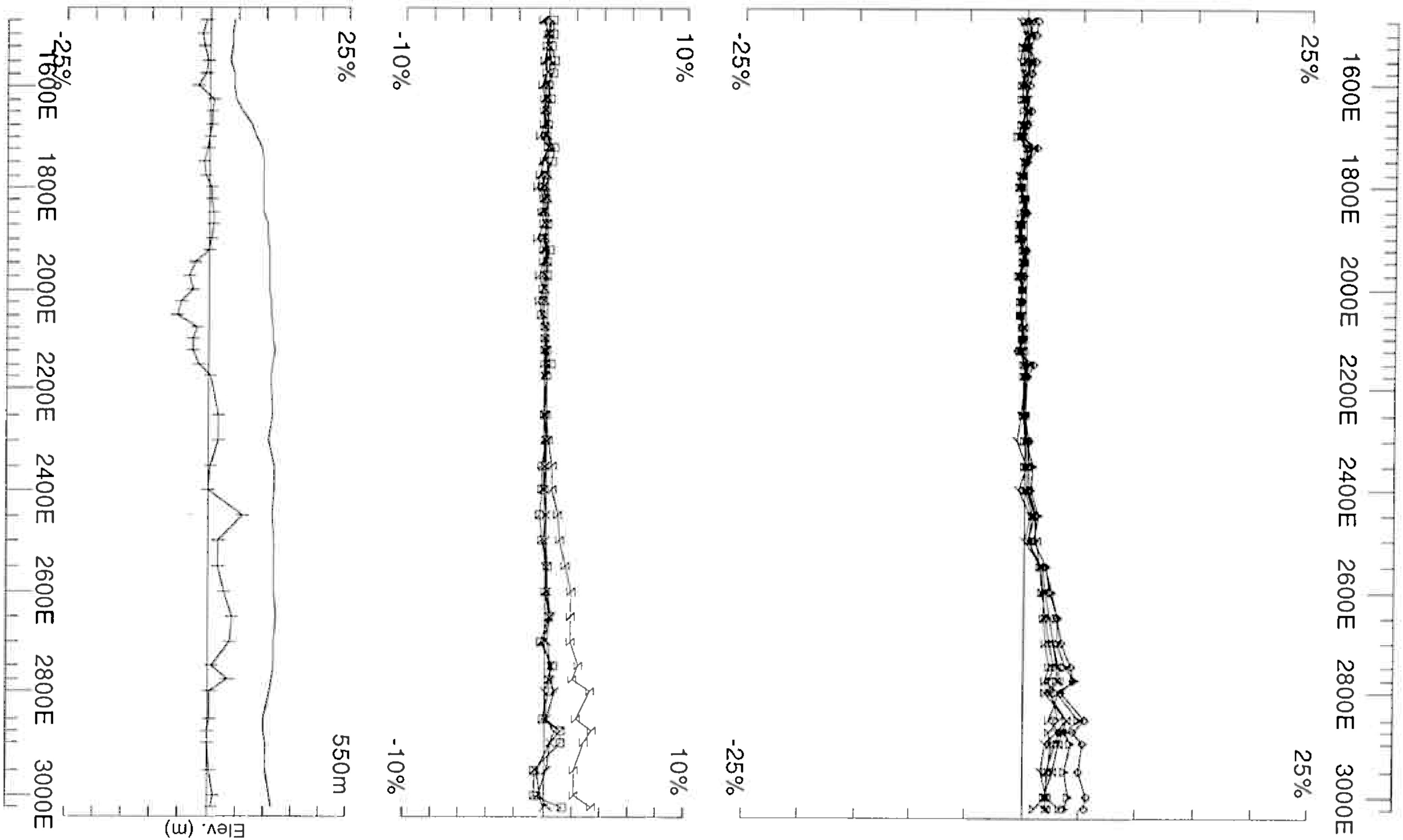
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3700N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6



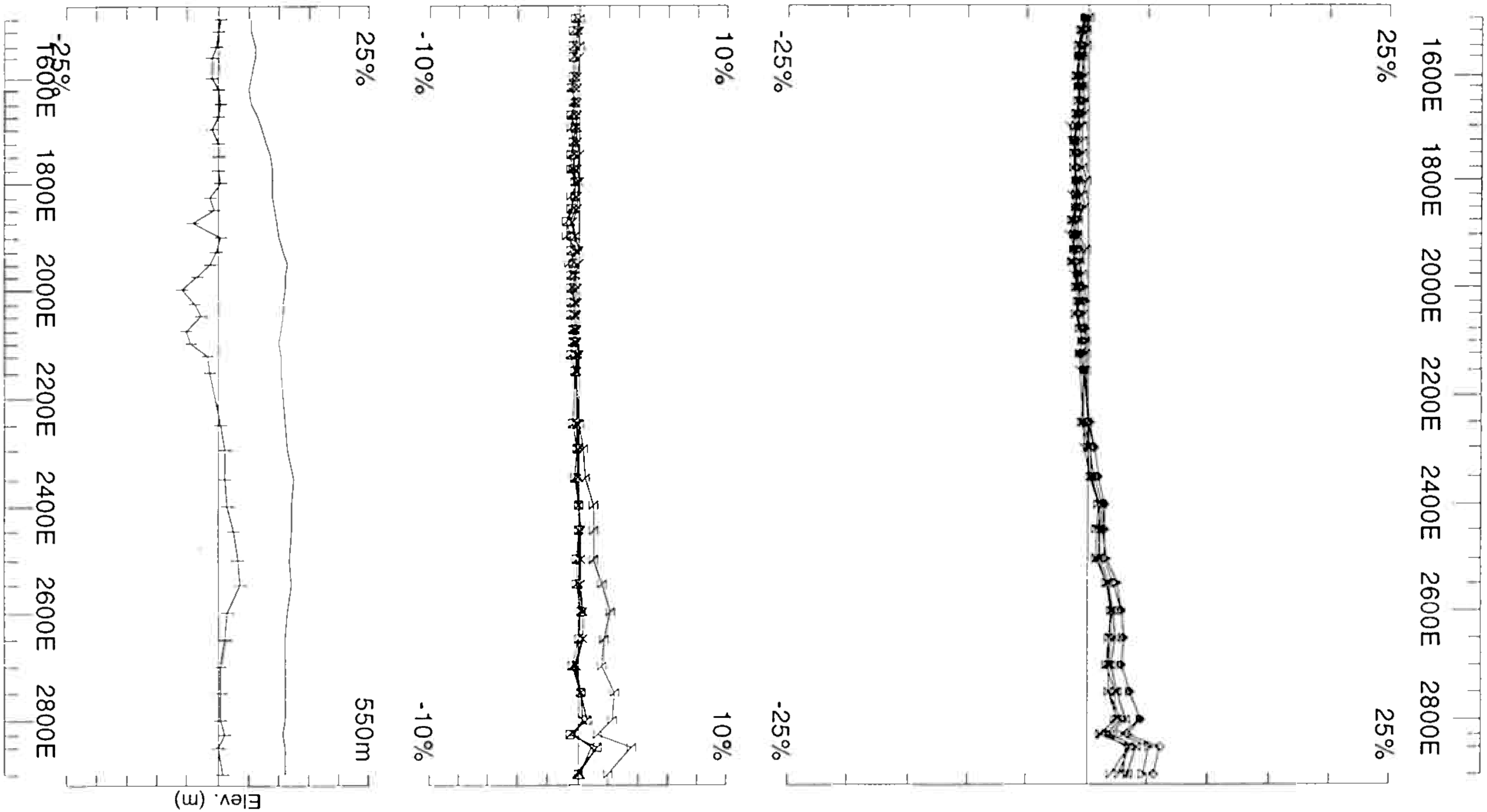
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



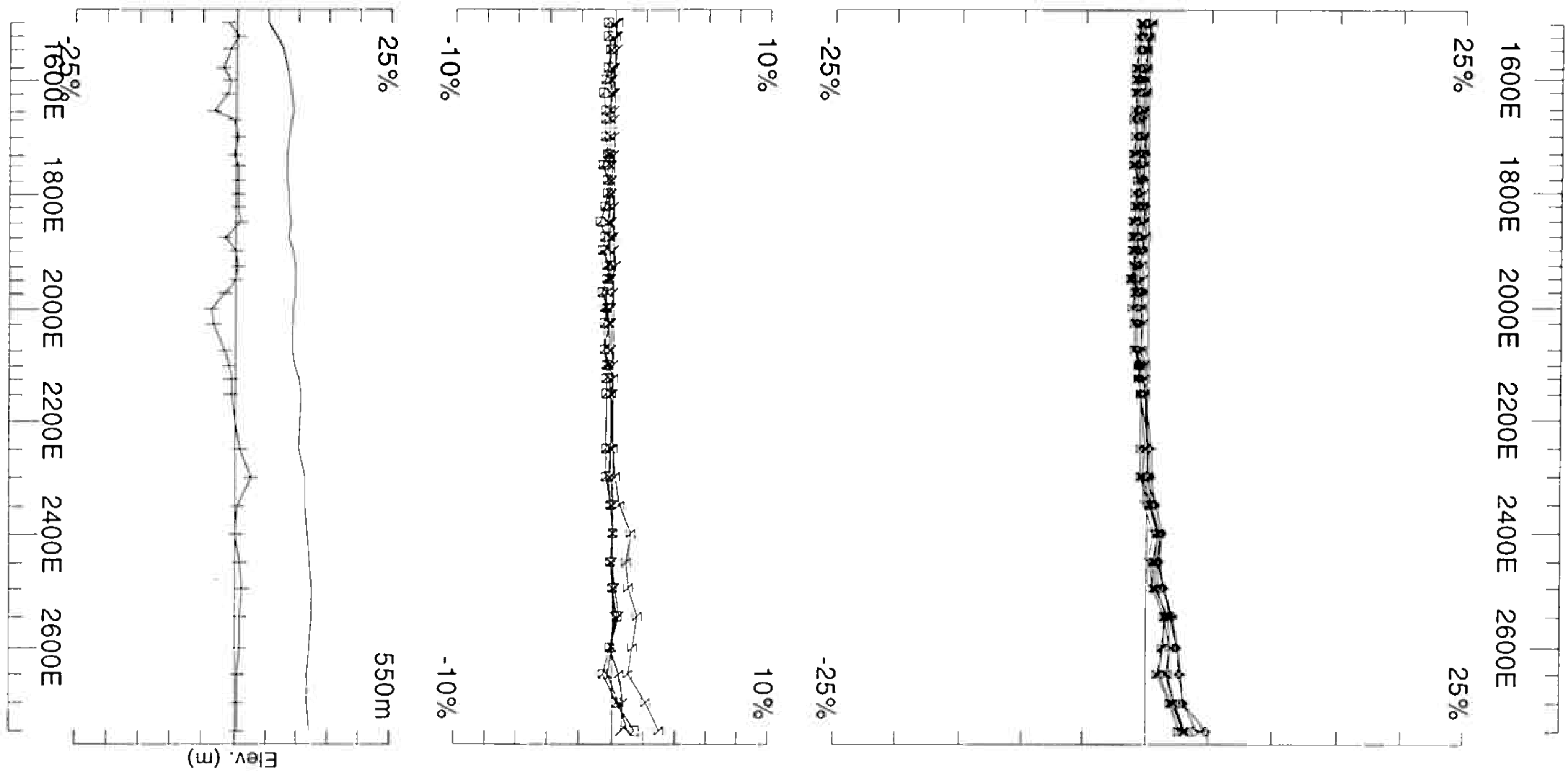
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6



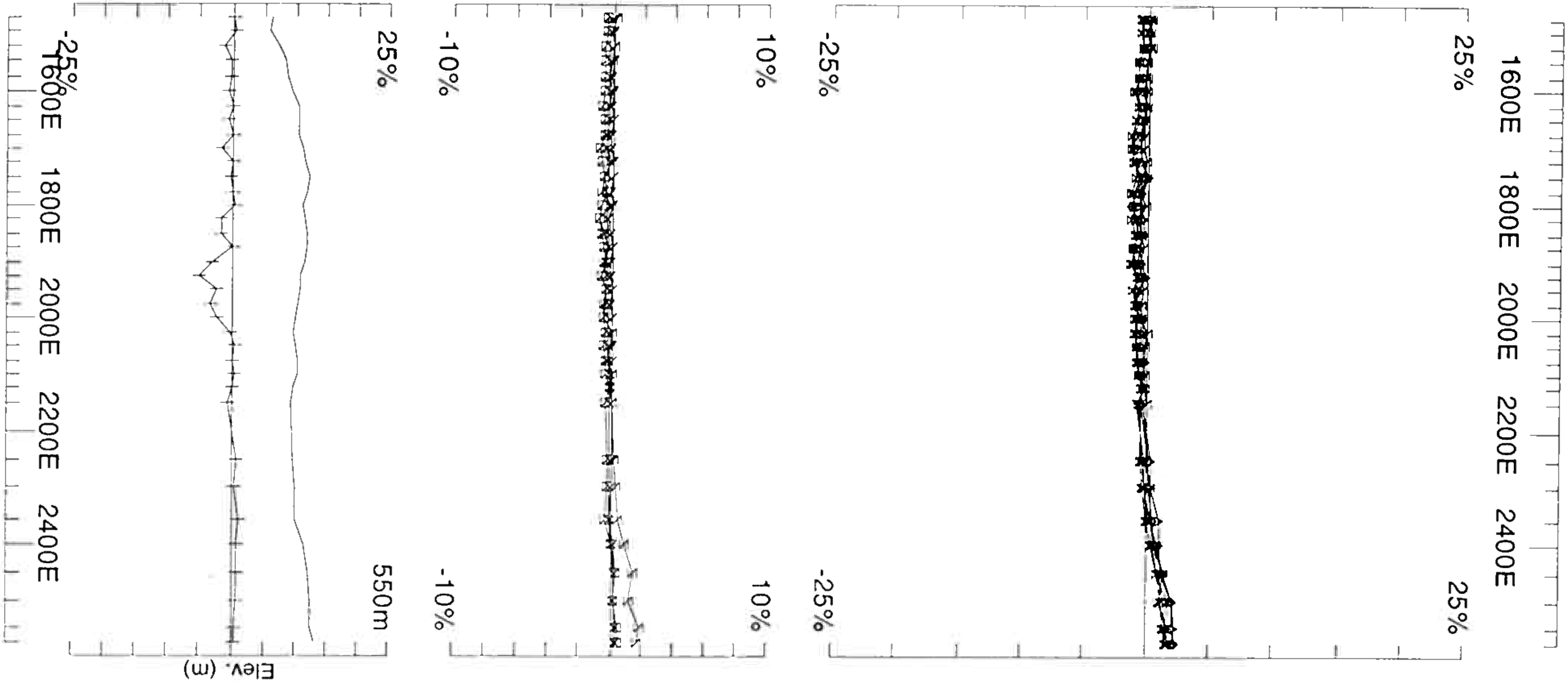
Loop: 06 Line: 4000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



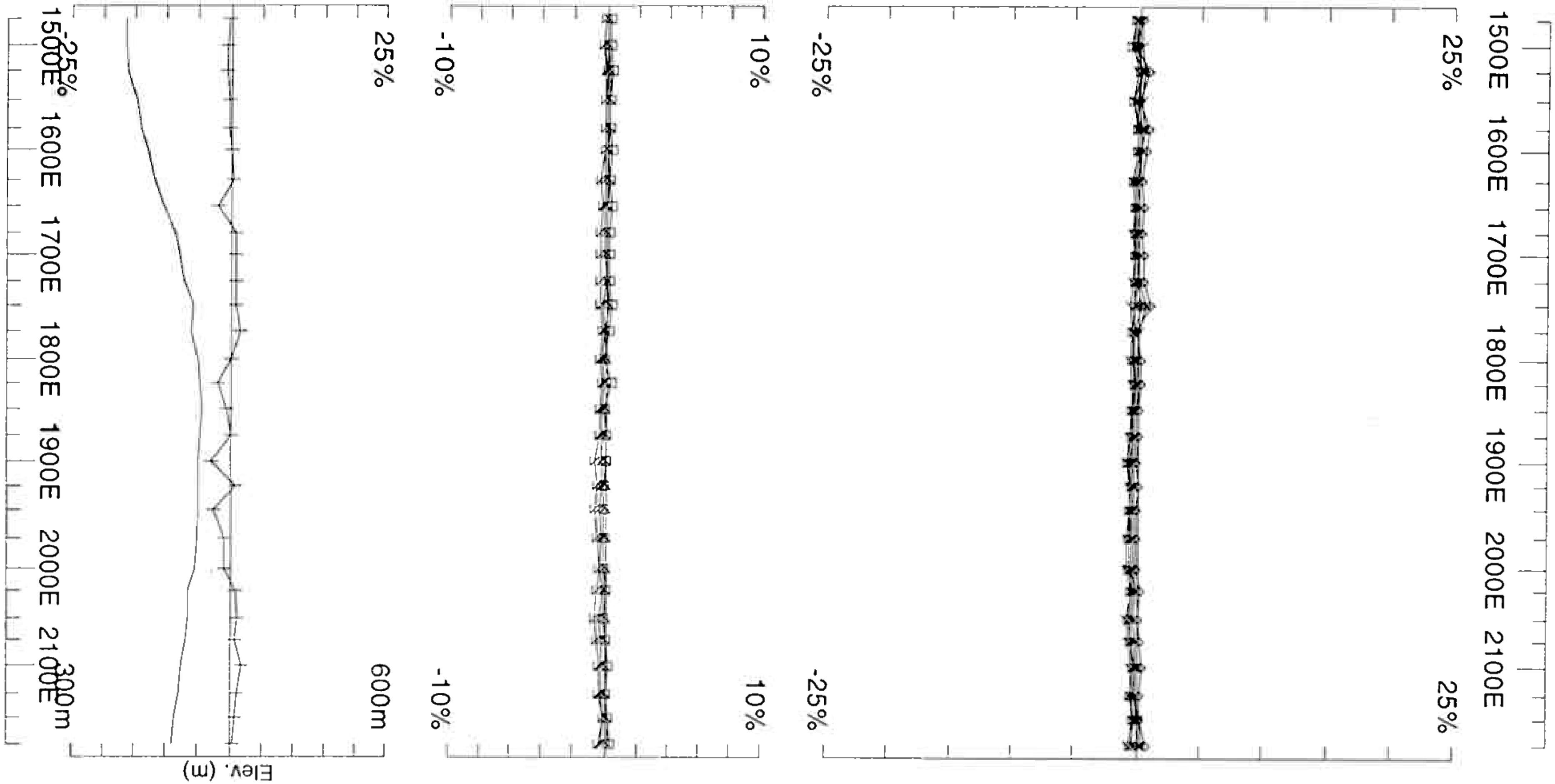
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



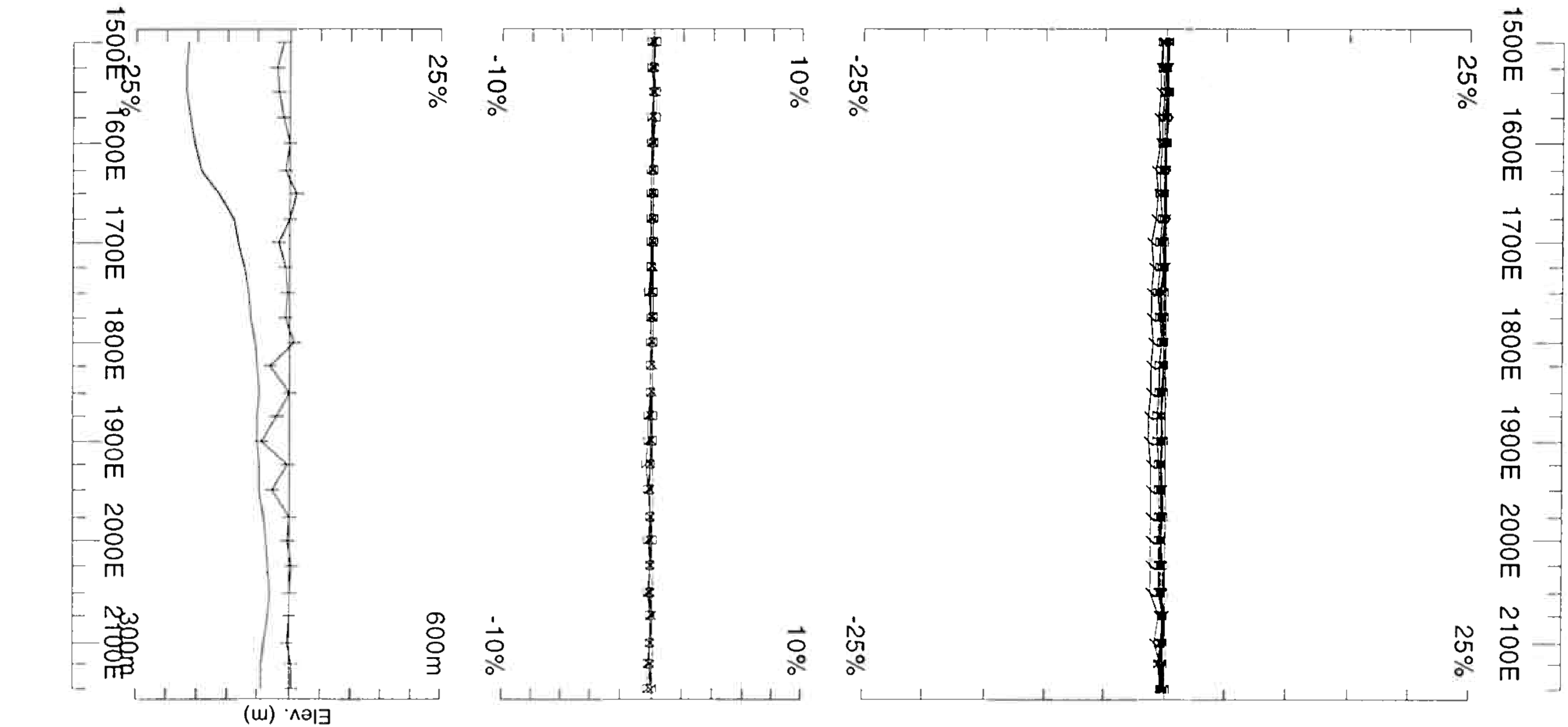
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4500N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: In-loop Profiles

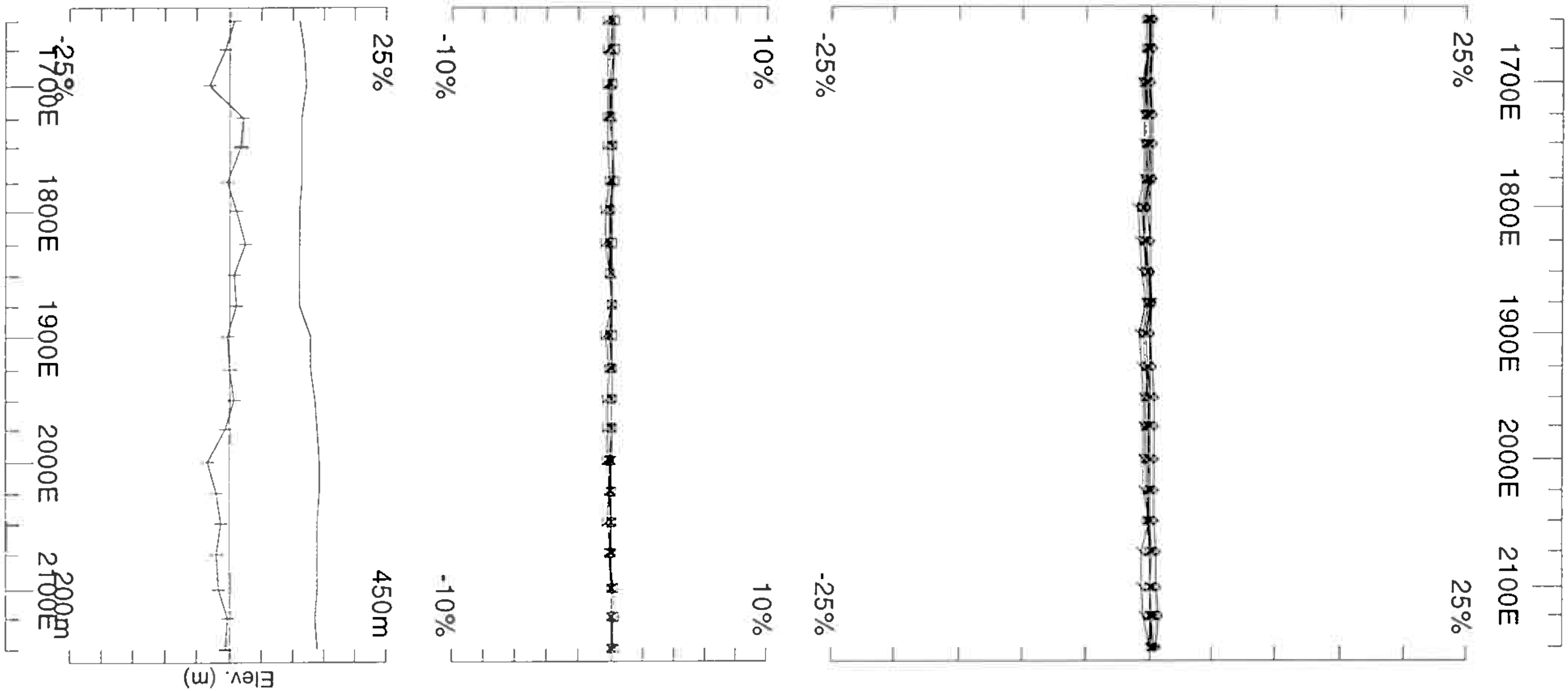
Hz
@3.251 Hz frequency

continuous norm

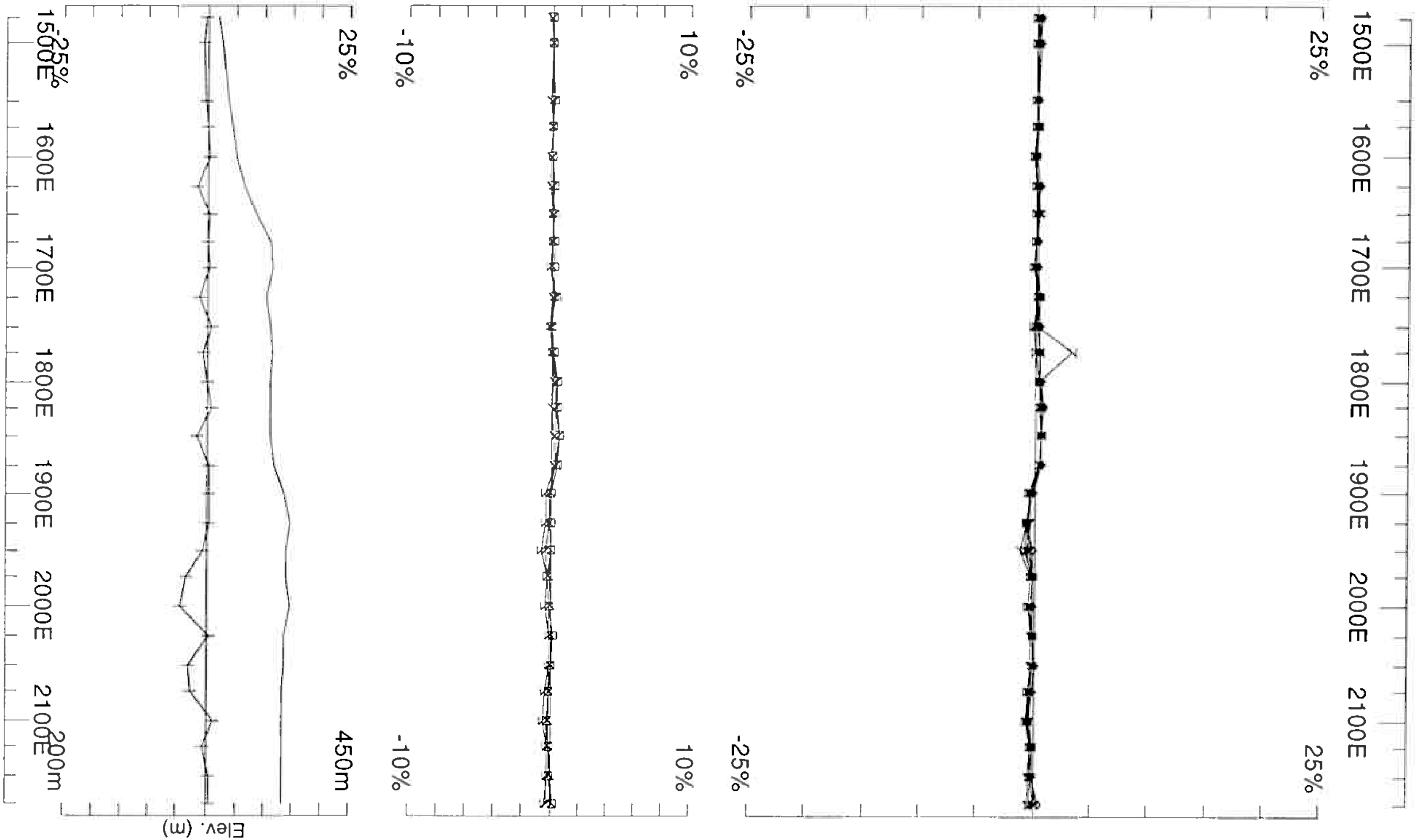
Ch1 reduced

In-Loop 06 Langedalen	Line 3600N	2225E - 3025E	800m	1:5000
	Line 3700N	1650E - 2150E	500m	1:5000
	Line 3800N	1475E - 2175E	700m	1:5000
	Line 3900N	1650E - 2150E	500m	1:5000
	Line 4000N	1475E - 2175E	700m	1:5000
	Line 4100N	1500E - 2150E	650m	1:5000
	Line 4200N	1500E - 2150E	650m	1:5000
	Line 4300N	1475E - 2150E	675m	1:5000
	Line 4400N	1475E - 2175E	700m	1:5000
	Line 4500N	1500E - 2150E	650m	1:5000
	Langedalen	In-Loop 06 Total	6525m	

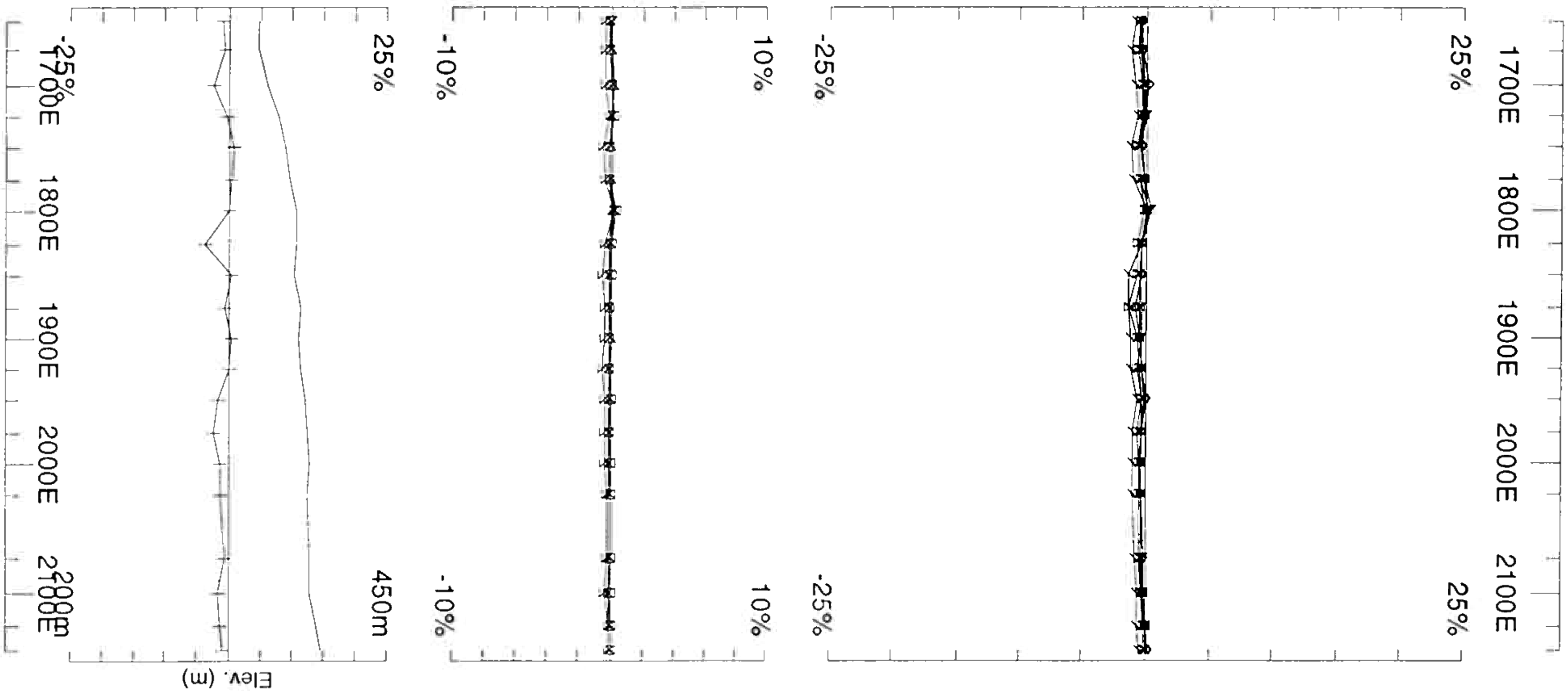
Loop 06 - continuous norm



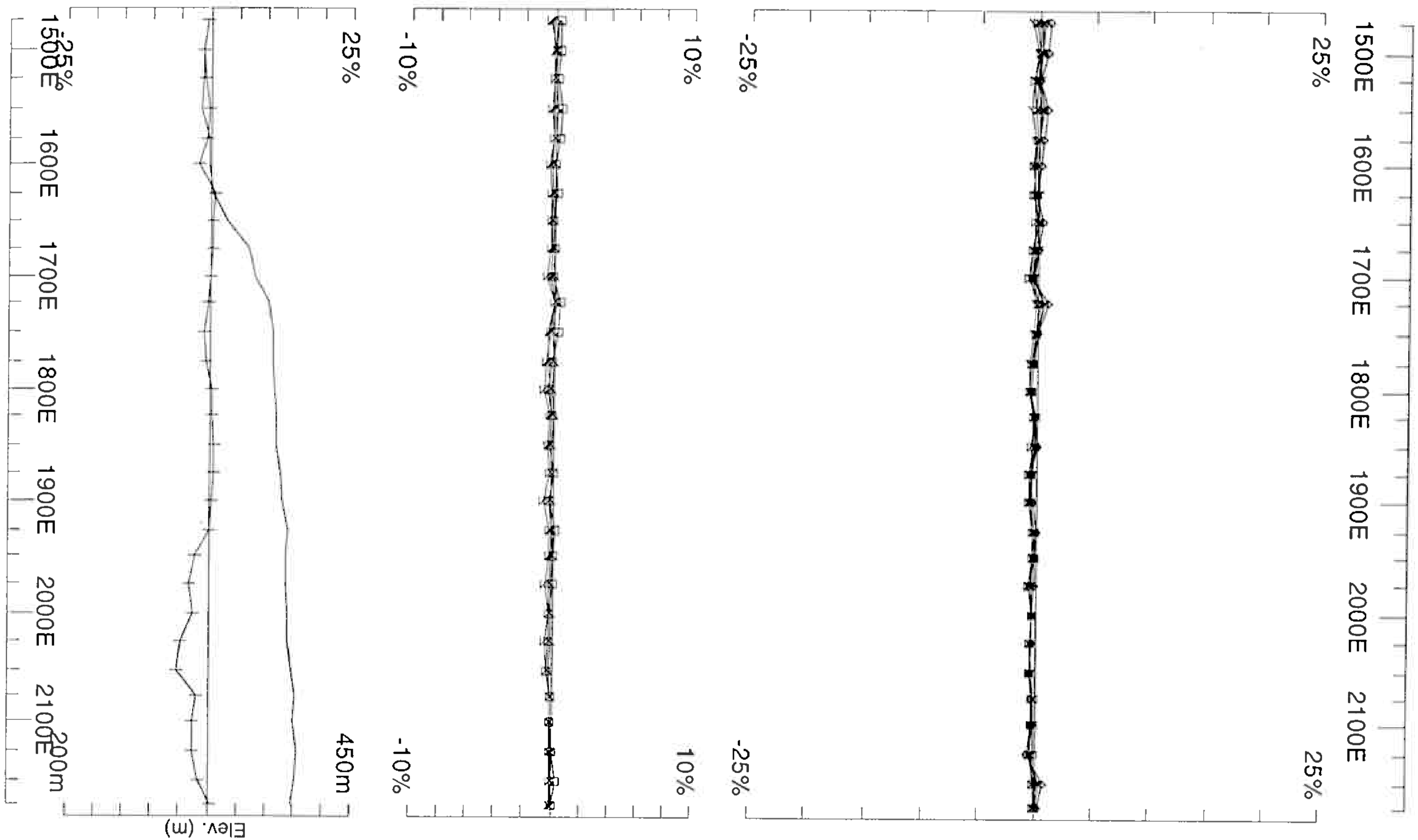
Loop: 06 Line: 3700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6



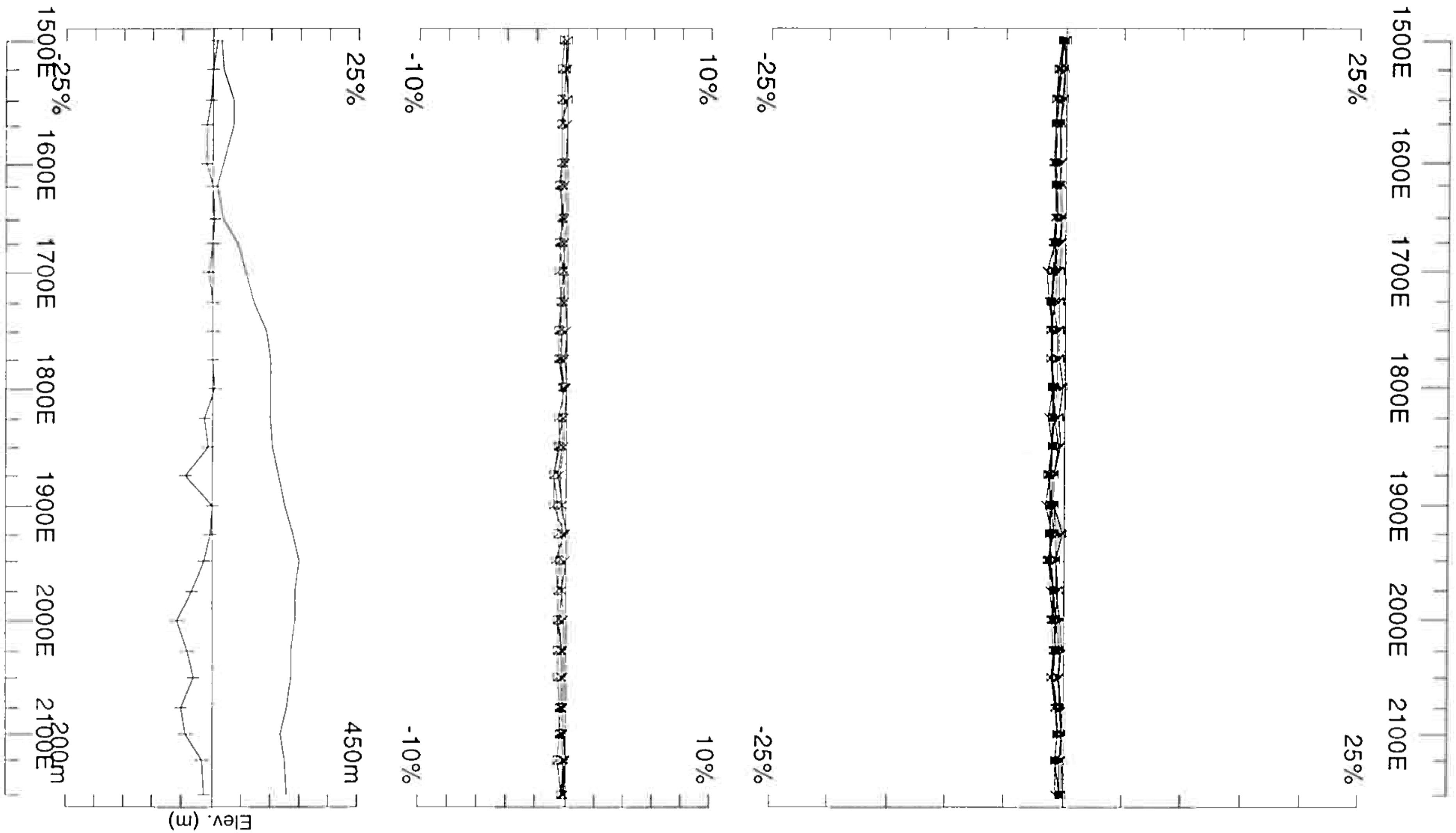
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



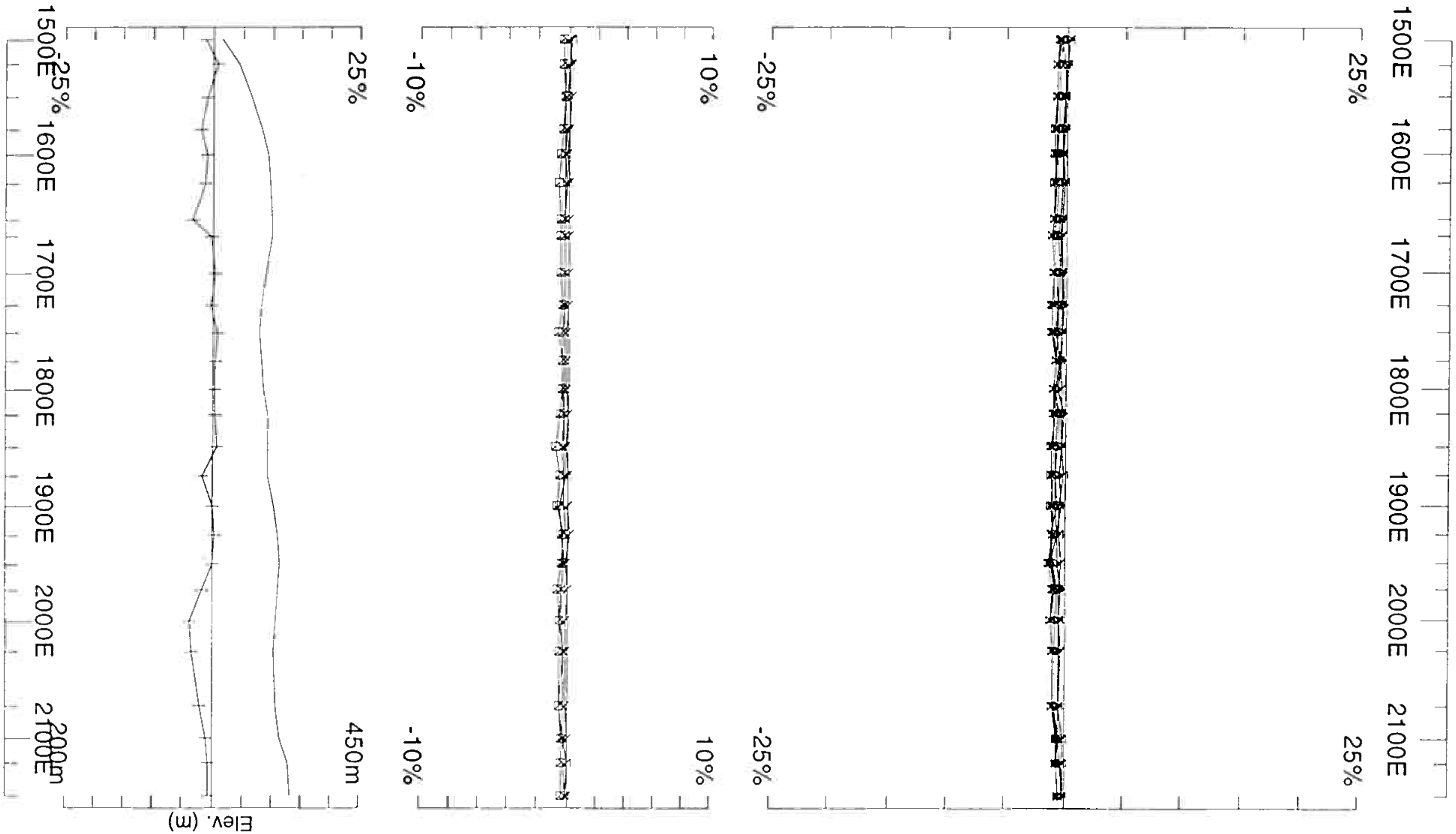
Loop: 06 Line: 3900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6



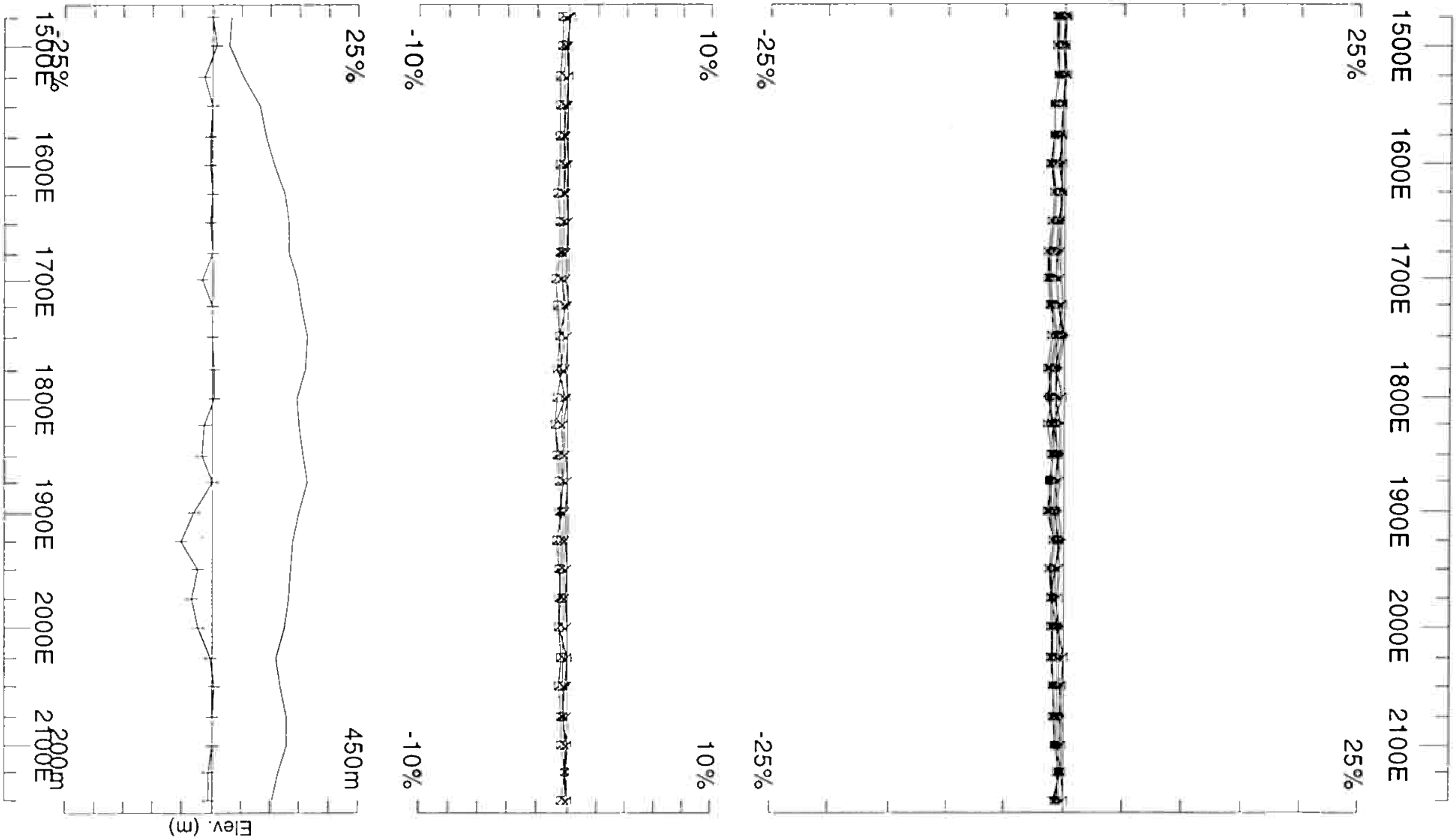
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



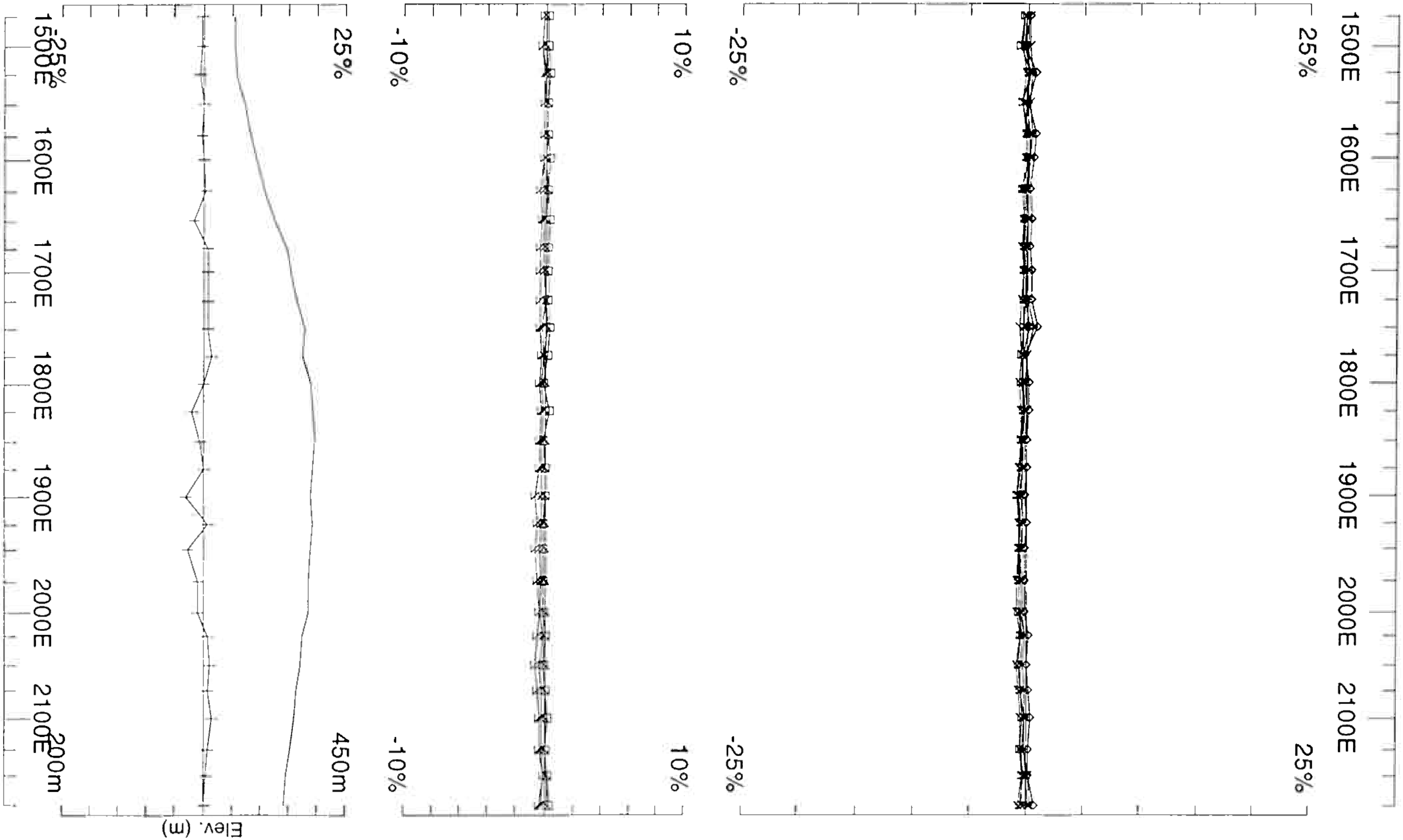
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



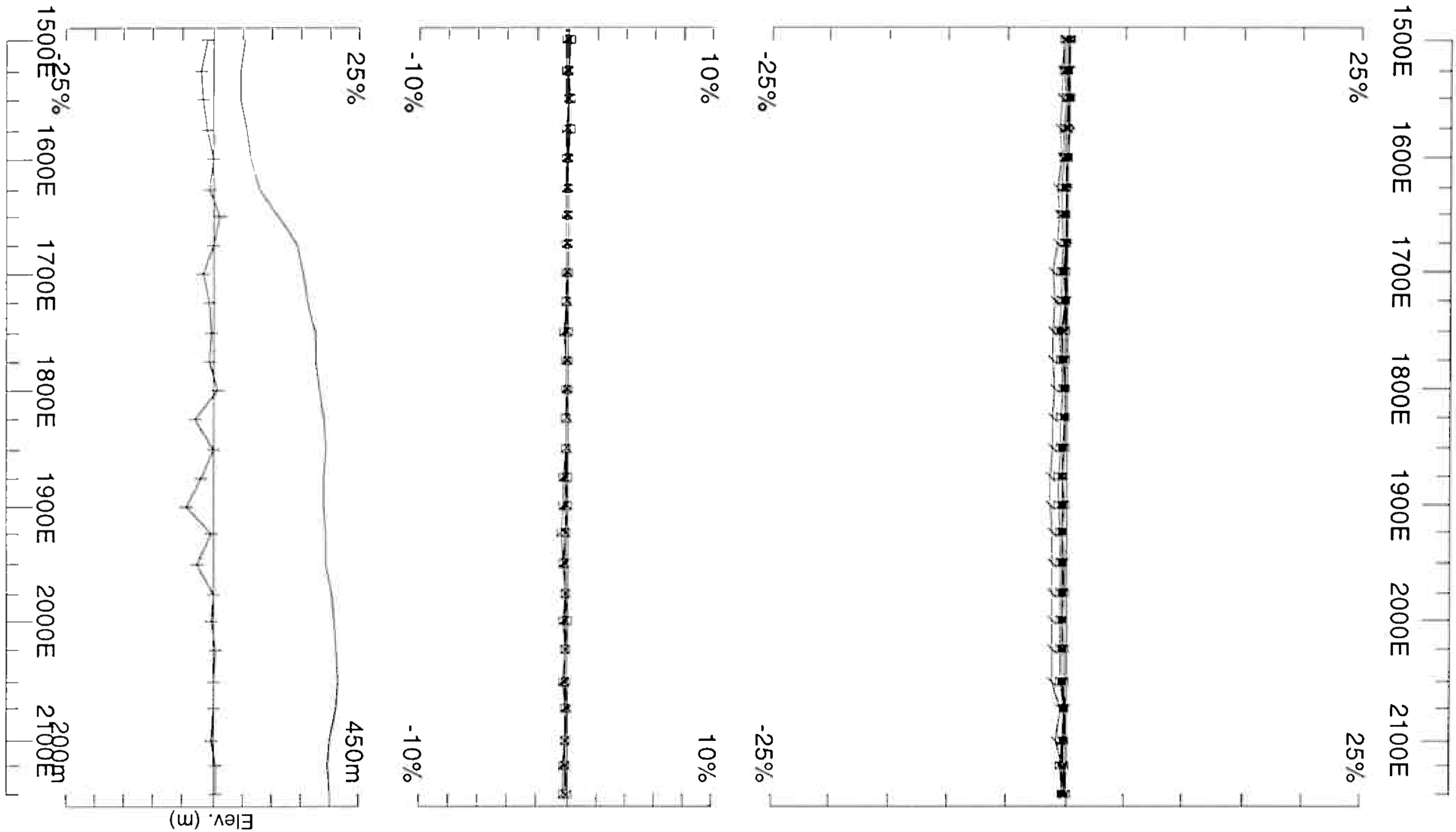
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4500N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: Off-loop Profiles

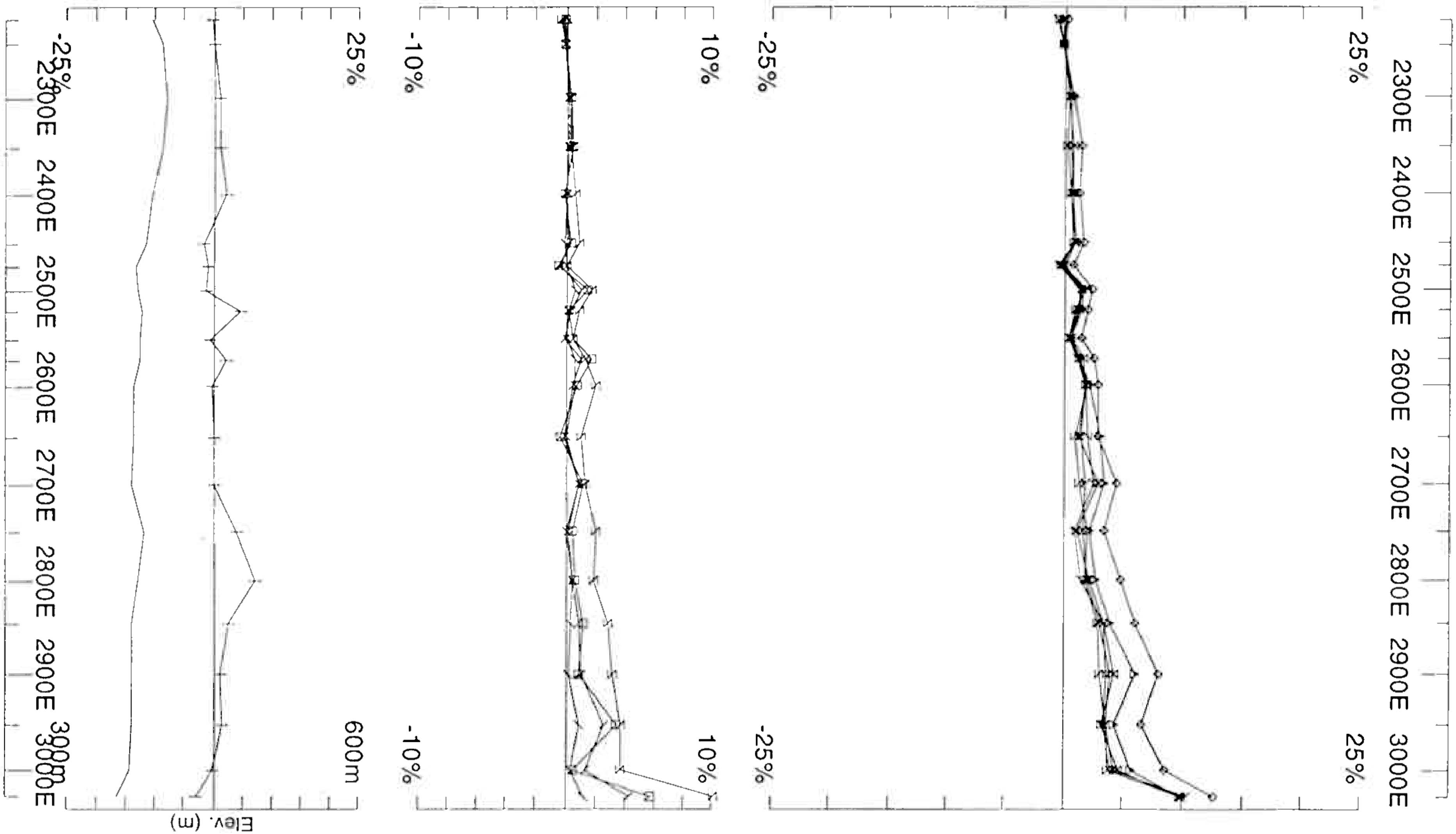
Hz
@3.251 Hz frequency

continuous norm

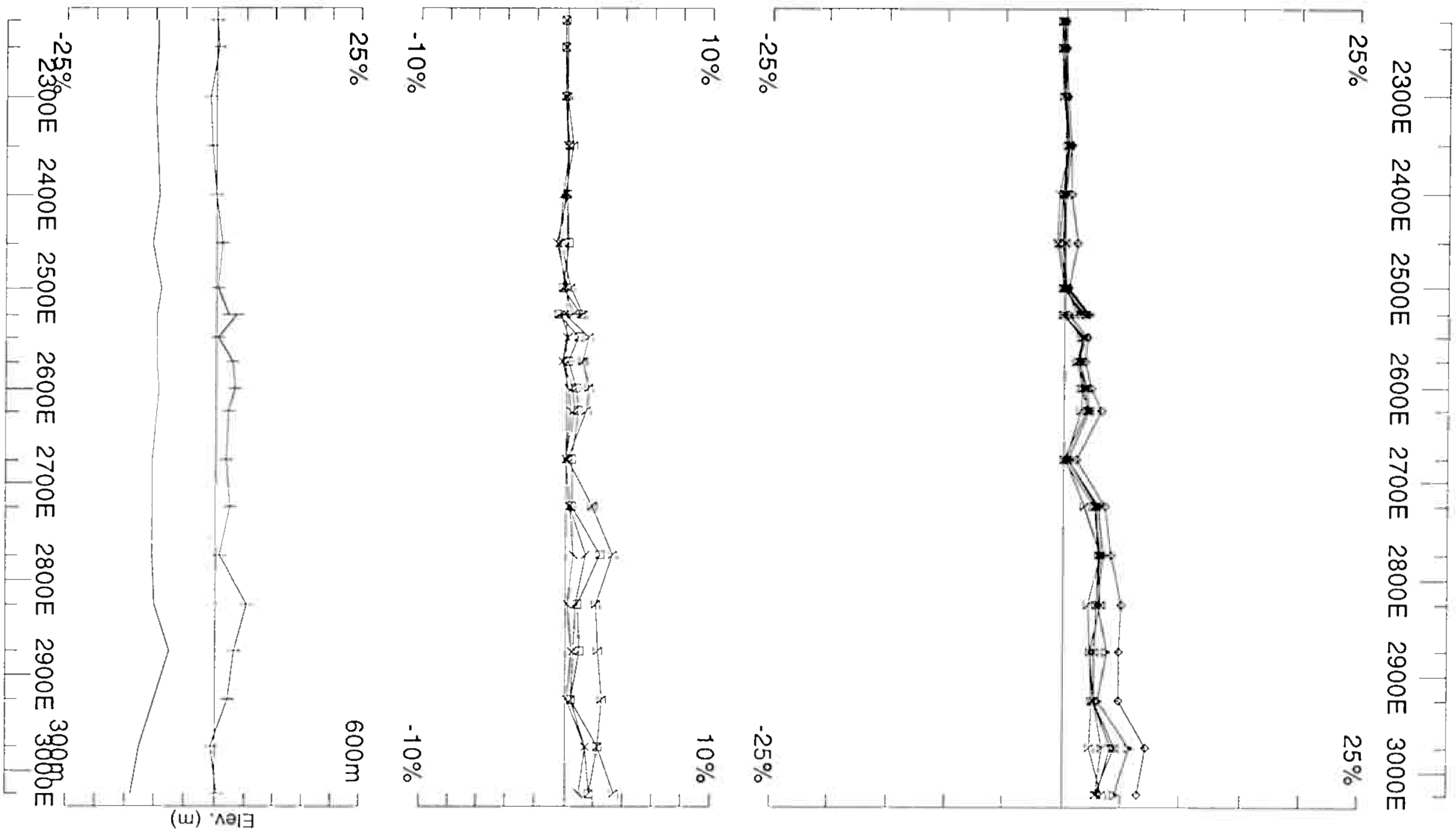
Ch1 reduced

Off-Loop 06 Langedalen	Line 3800N	2225E - 3025E	800m	1:6000
	Line 4000N	2250E - 3025E	775m	1:6000
	Line 4100N	2250E - 2900E	650m	1:6000
	Line 4200N	2250E - 2750E	500m	1:6000
	Line 4300N	2250E - 2575E	325m	1:6000
	Langedalen	Off-Loop 06 Total	3050m	

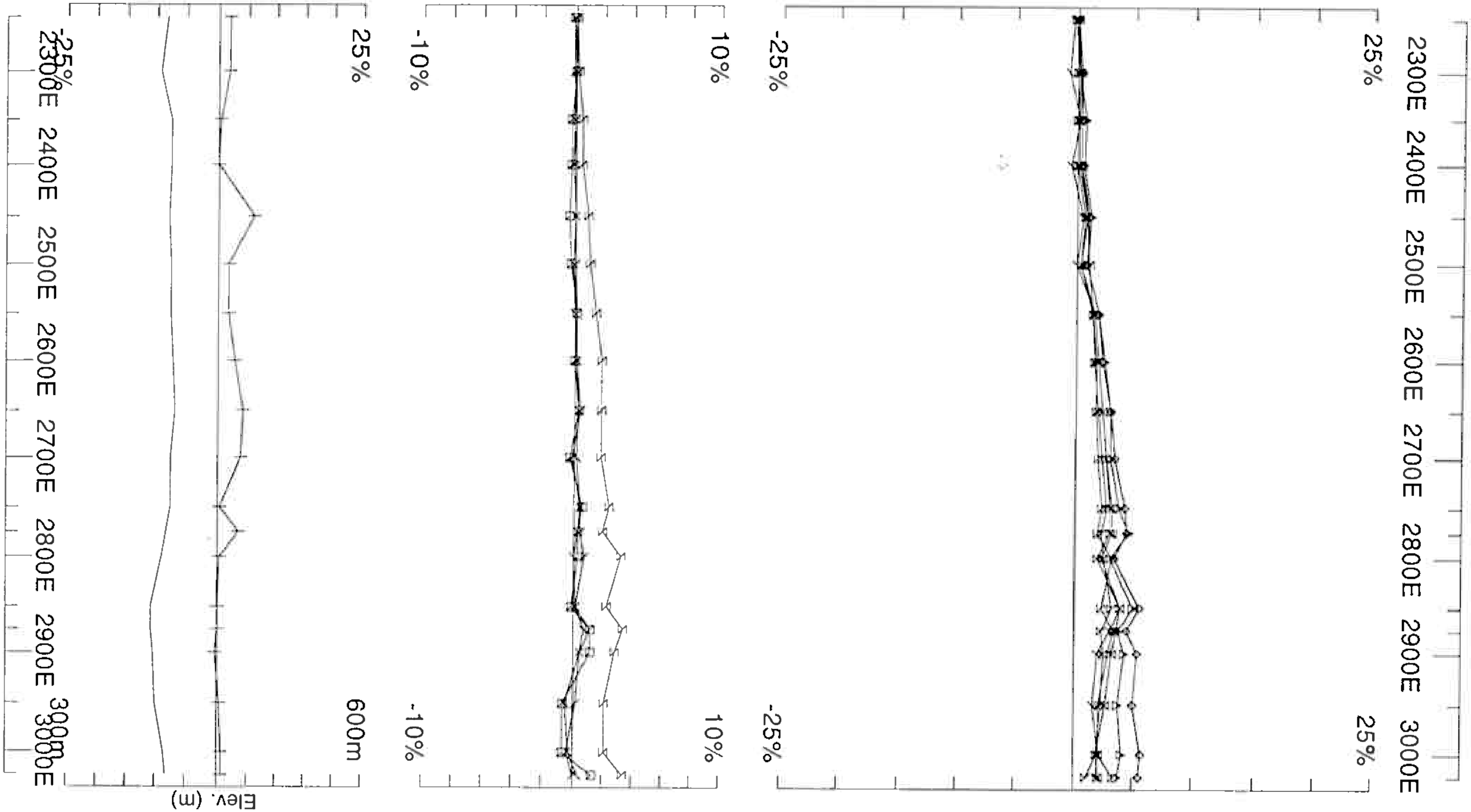
Loop 06 - continuous norm



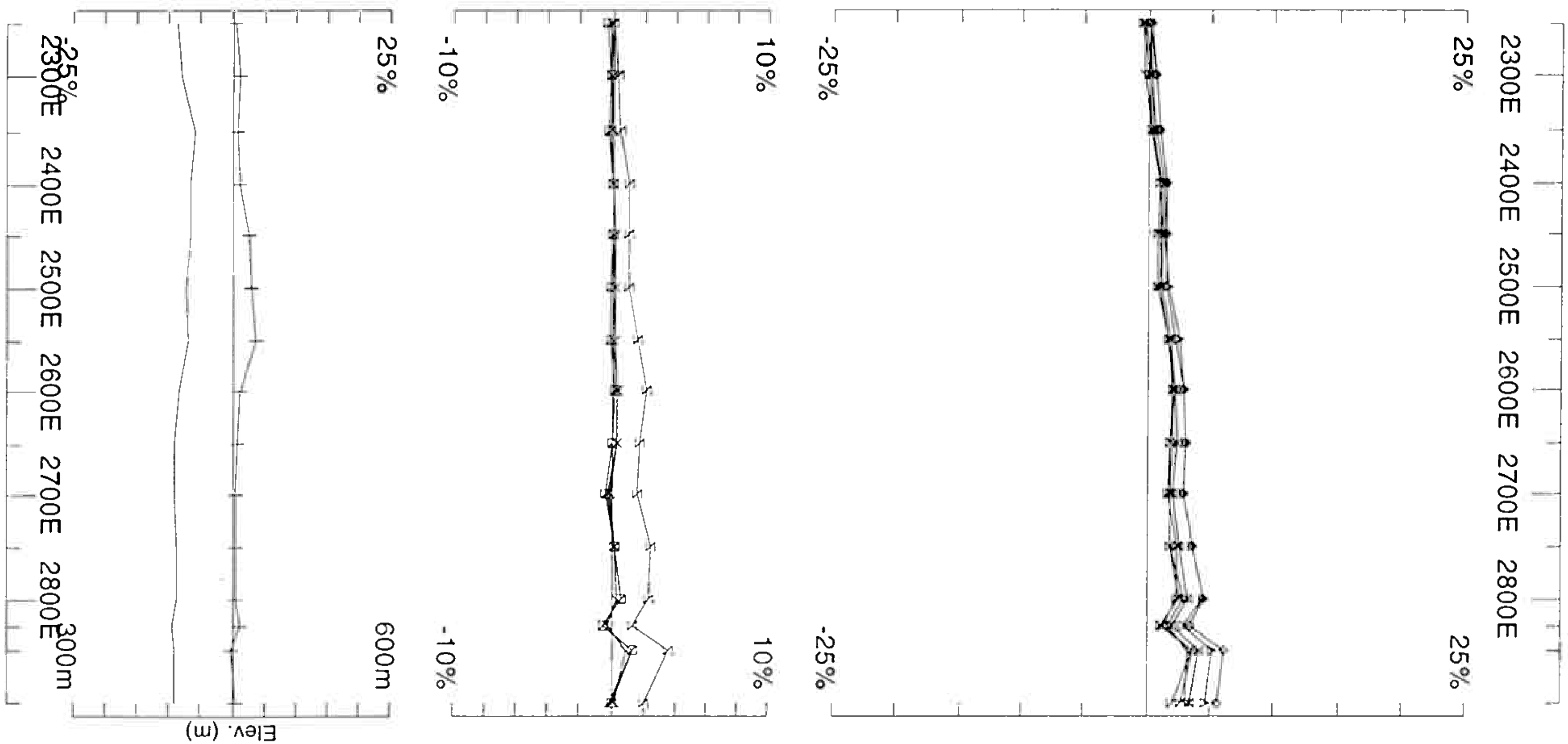
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3600N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



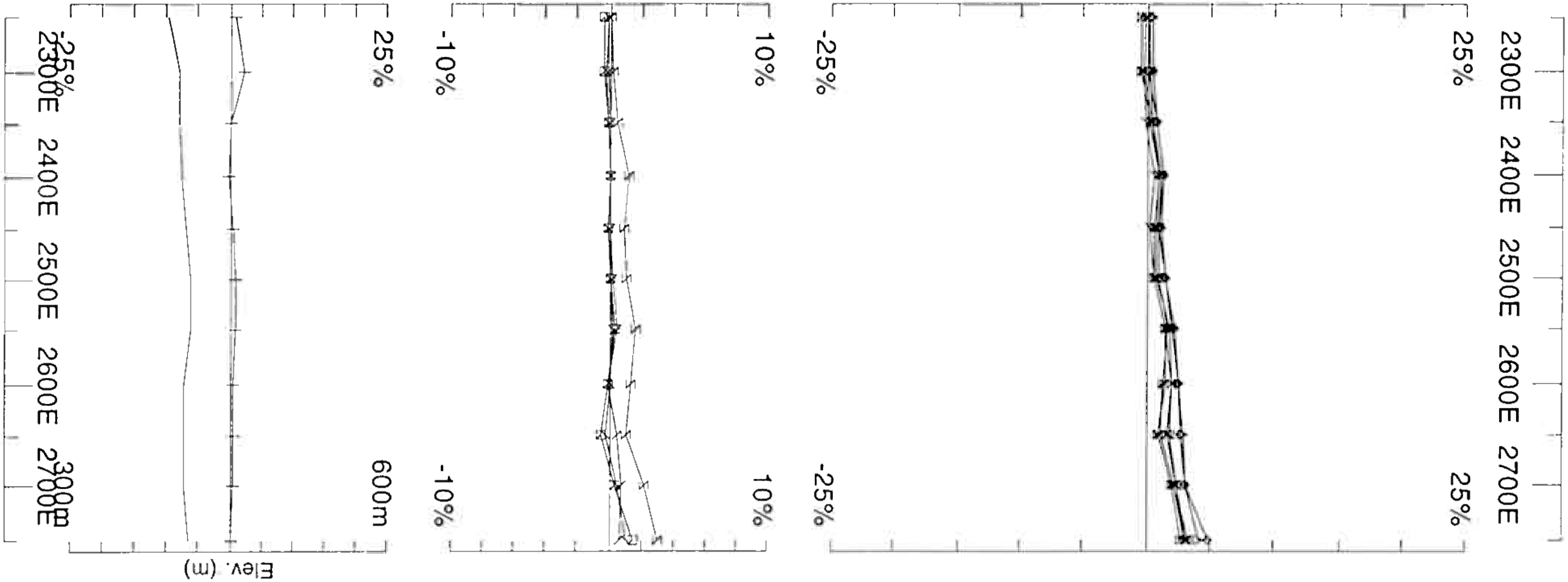
Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 3800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



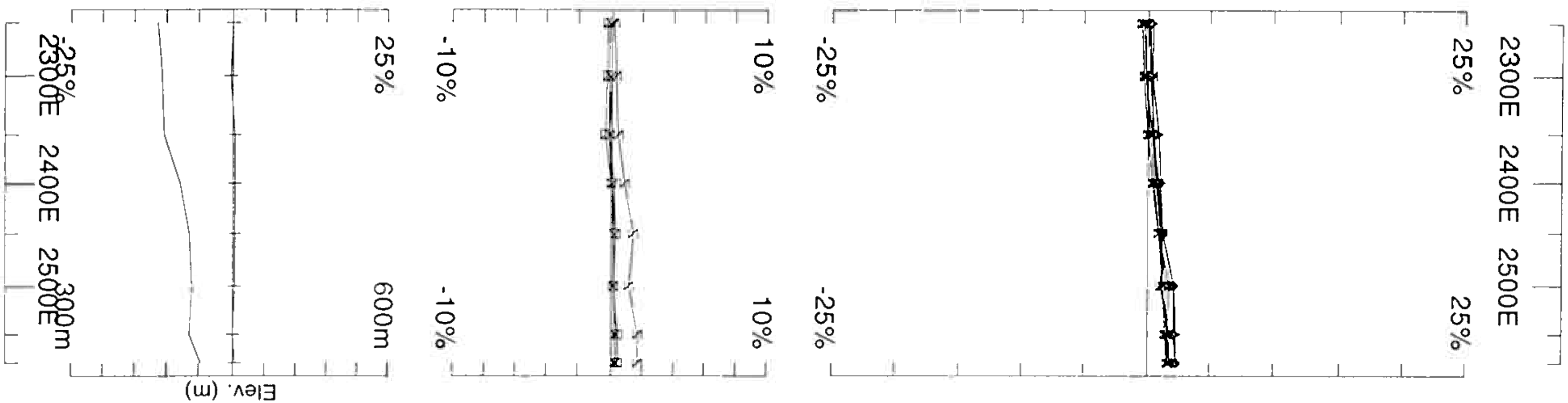
Loop: 06 Line: 4000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4100N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Langedalen Grid
Line: 4200N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6

Storebraten Grid

Loop 07

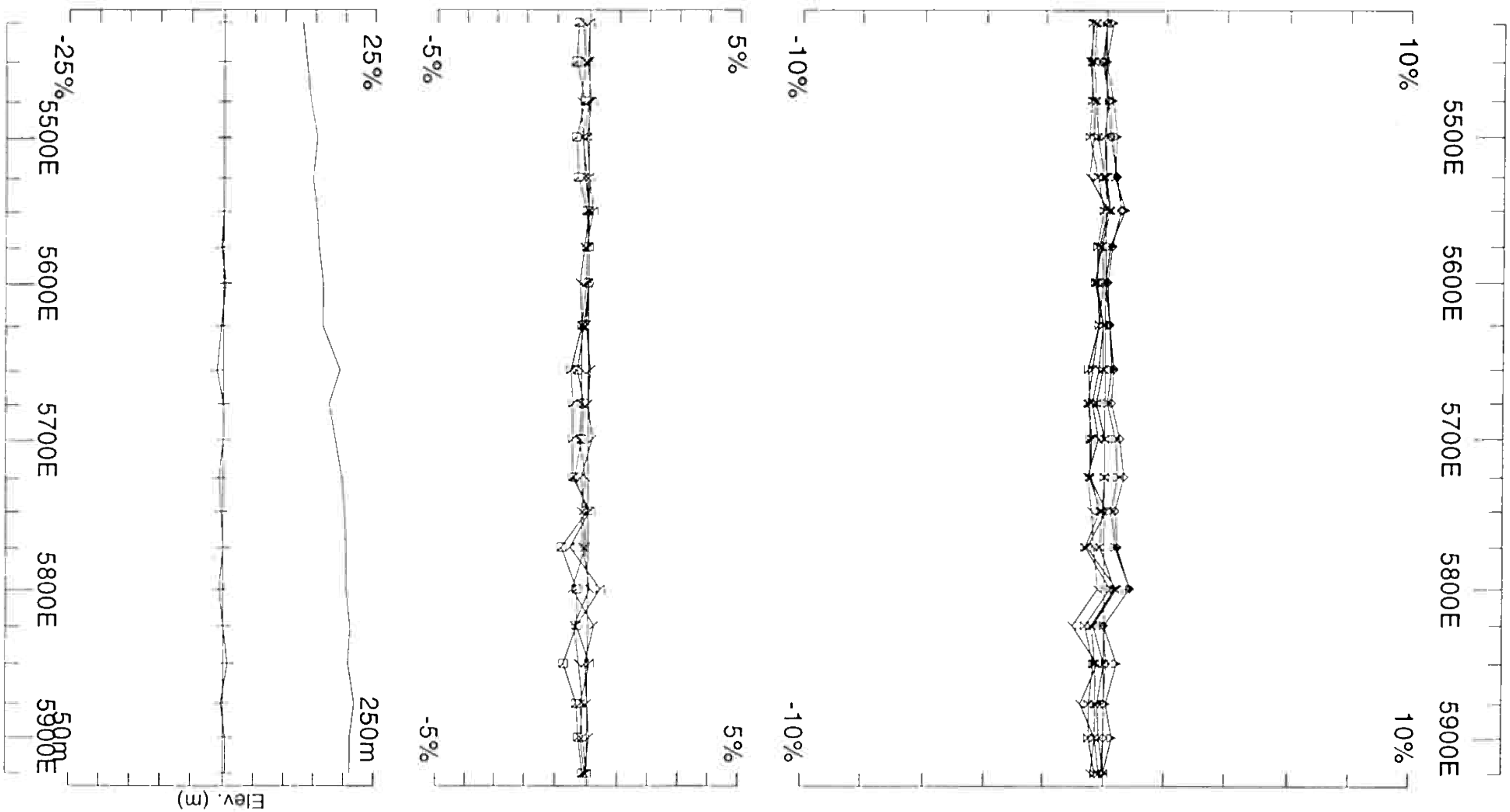
Hz
@3.251 Hz frequency

continuous norm

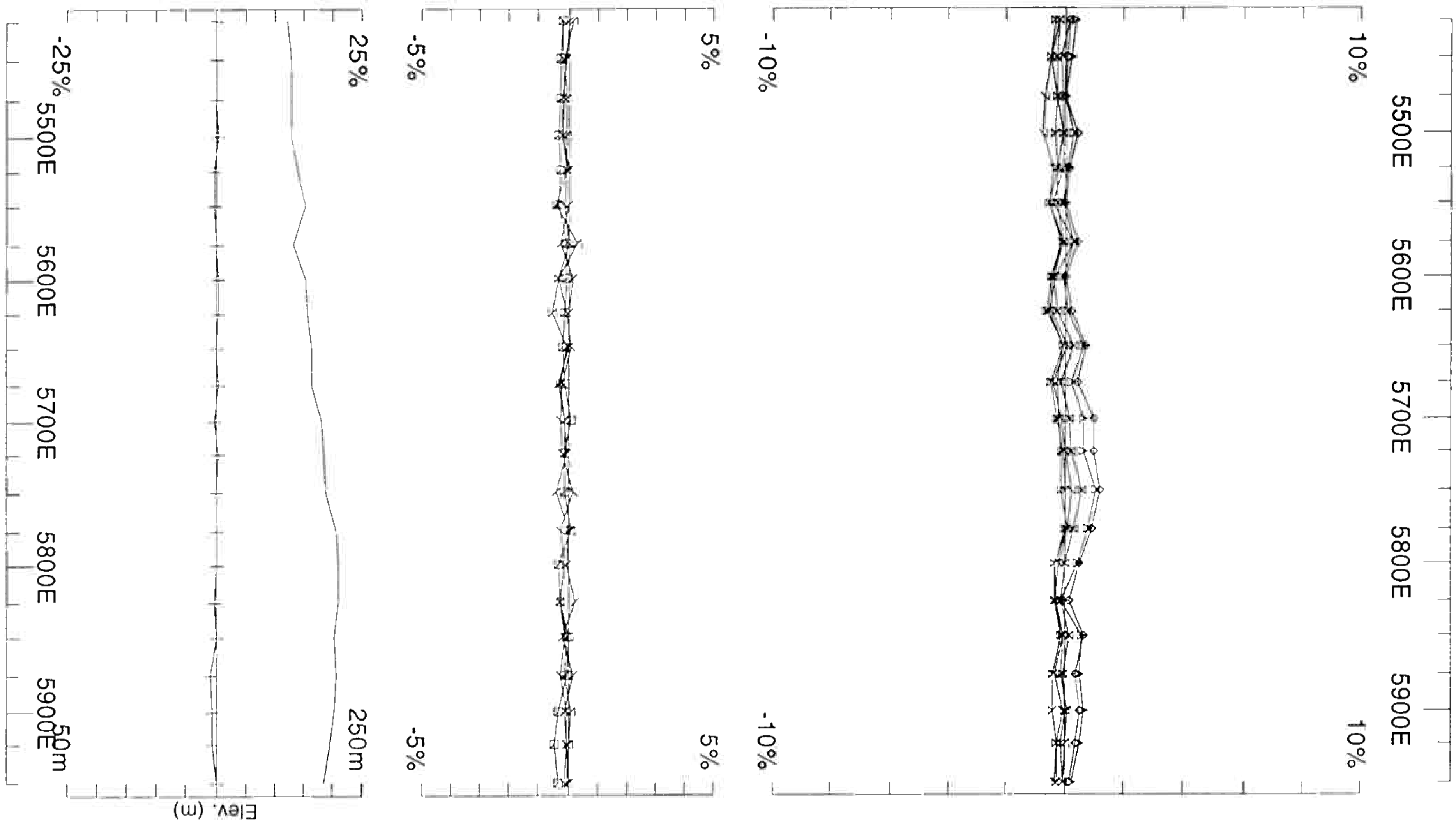
Ch1 reduced

Loop 07 Storebraten	Line 5800N	5425E - 5925E	500m	1:4000
	Line 5900N	5425E - 5950E	525m	1:4000
	Line 5950N	5425E - 5950E	525m	1:4000
	Line 6000N	5450E - 5950E	500m	1:4000
	Line 6050N	5425E - 5975E	550m	1:4000
	Line 6100N	5425E - 5950E	525m	1:4000
	Line 6200N	5425E - 5950E	525m	1:4000
	Storebraten	Loop 07 Total	3650m	

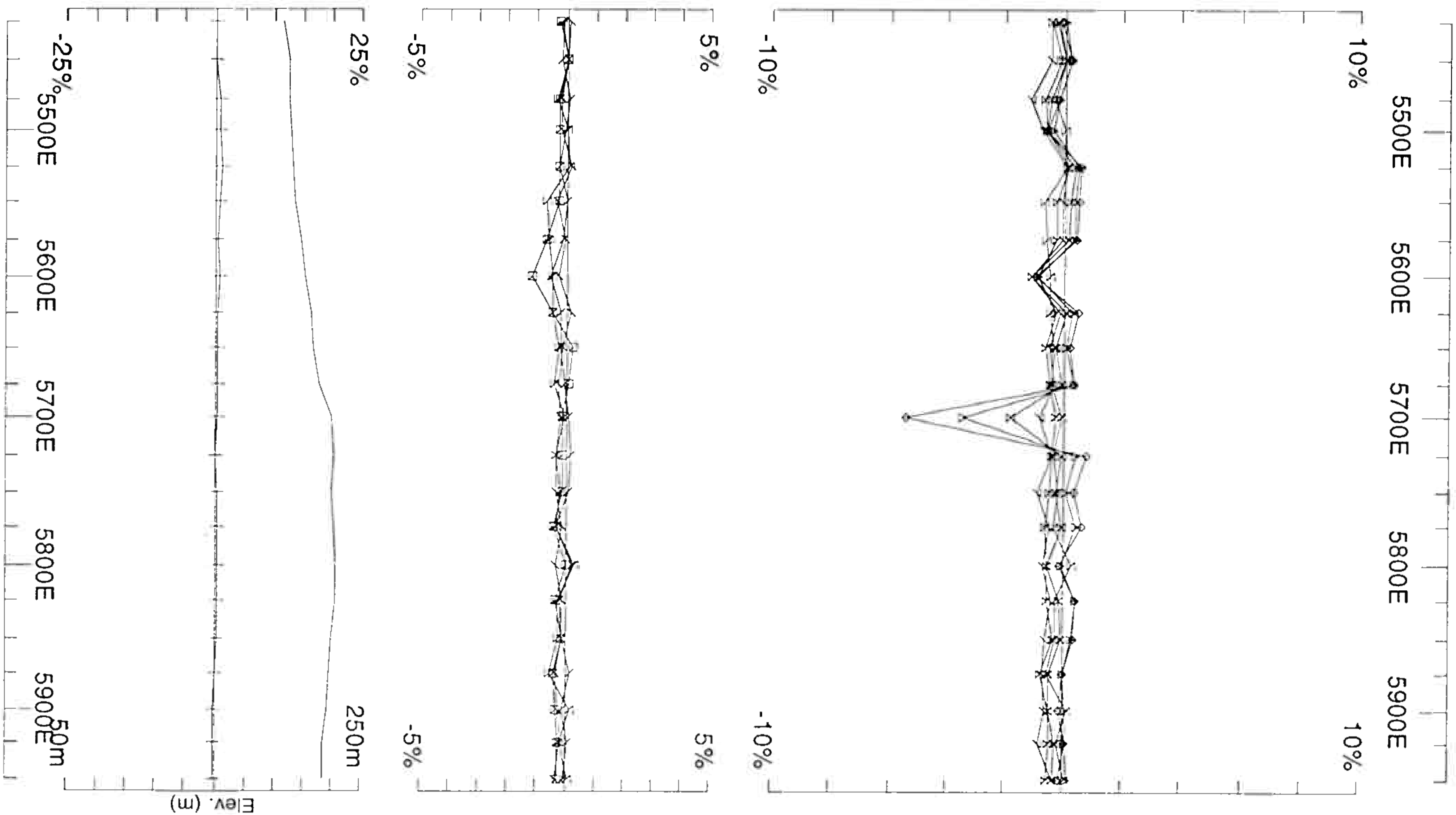
Loop 07 - continuous norm



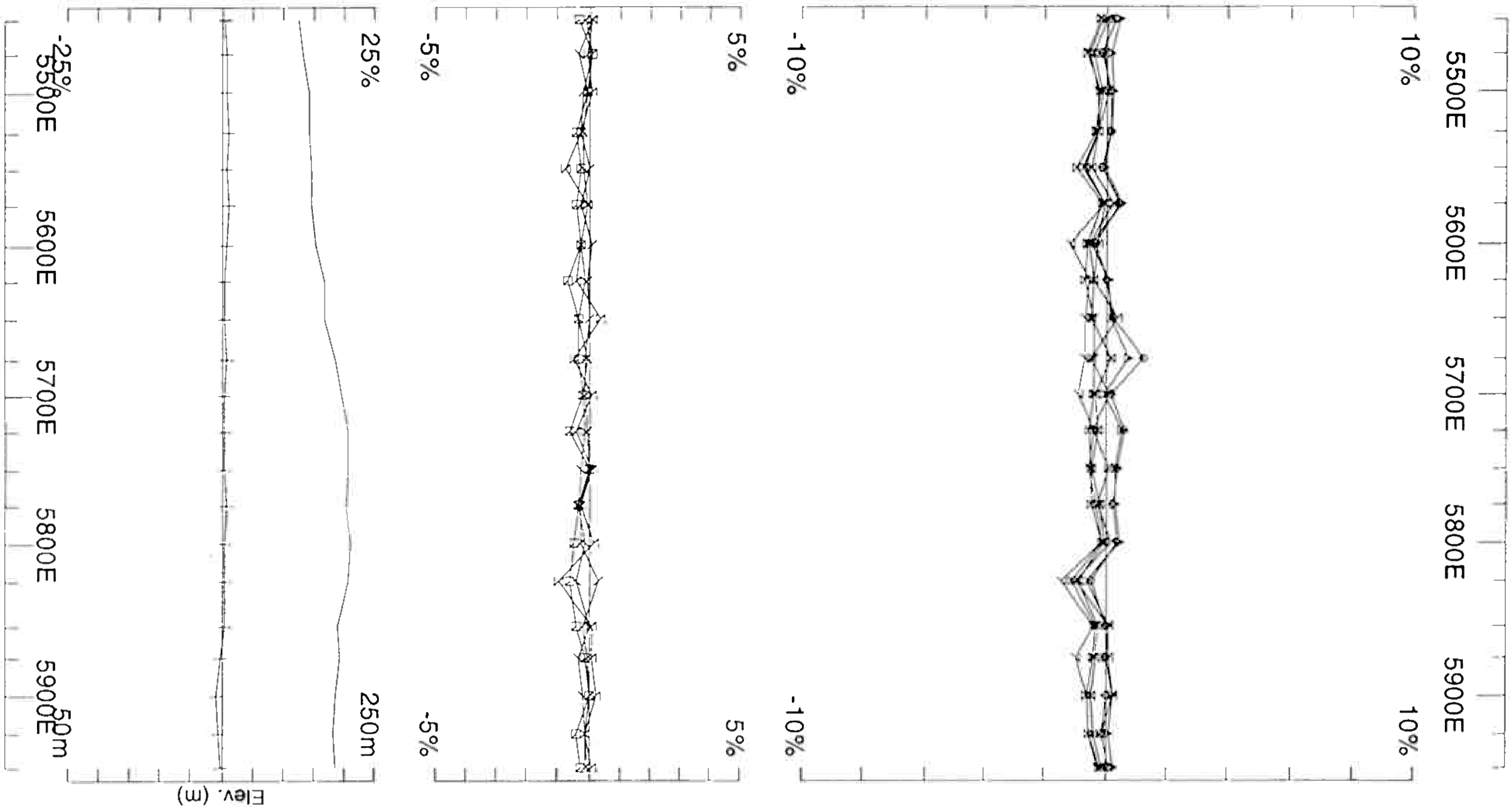
Loop: 07	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Storebraten Grid
Line: 5800N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



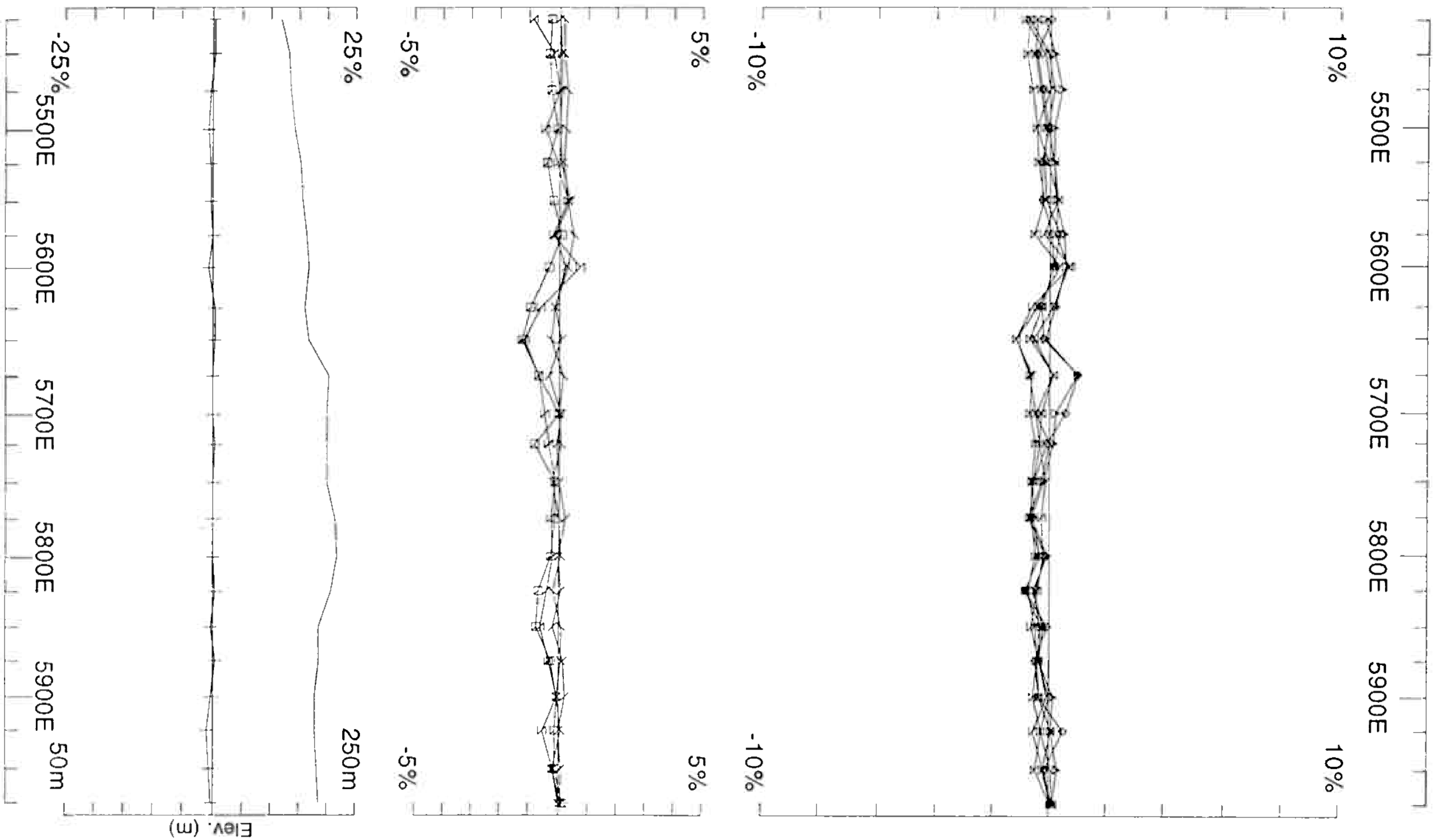
Loop: 07	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Storebraten Grid
Line: 5900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



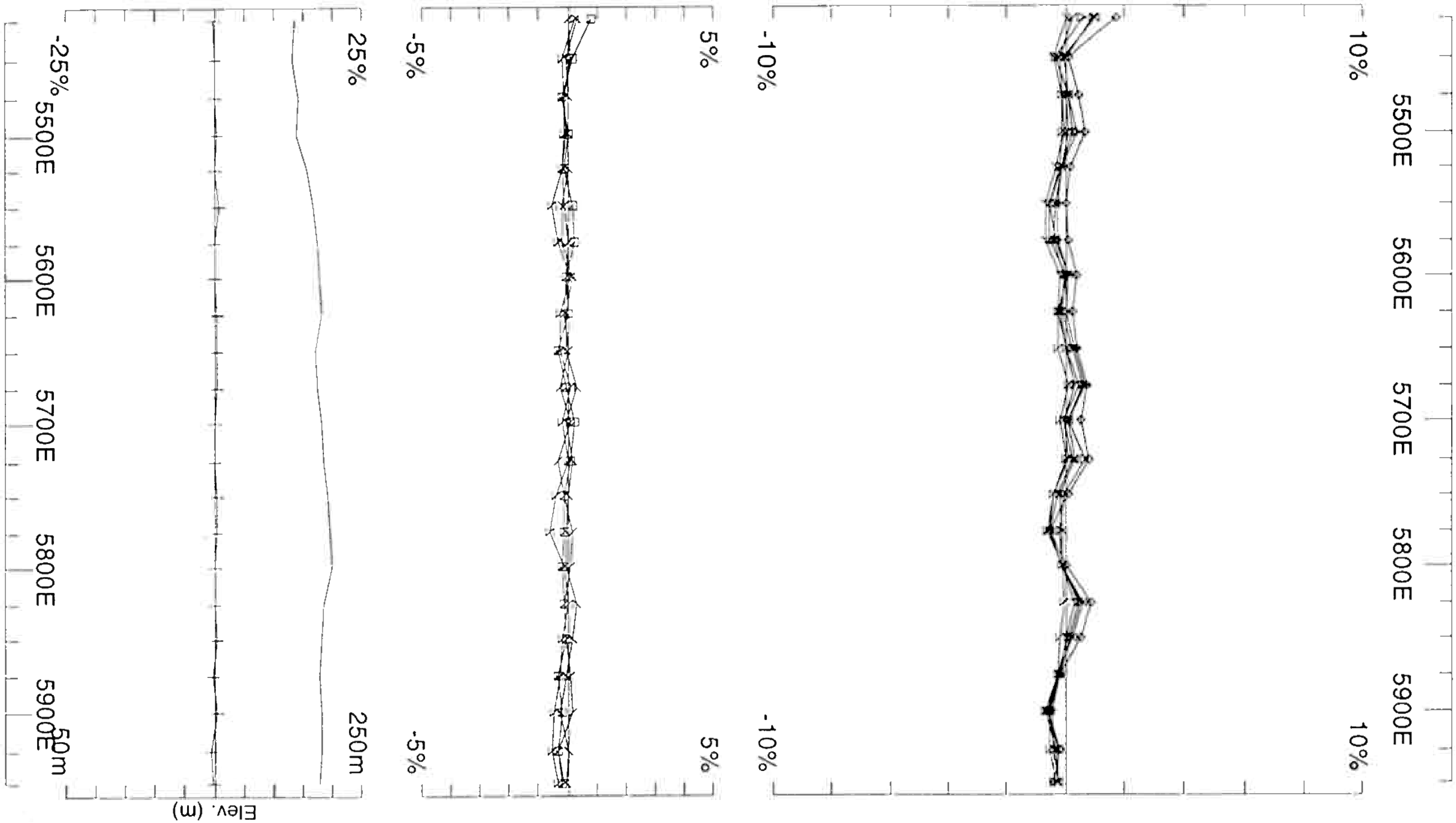
Loop: 07	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Storebraten Grid
Line: 5950N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



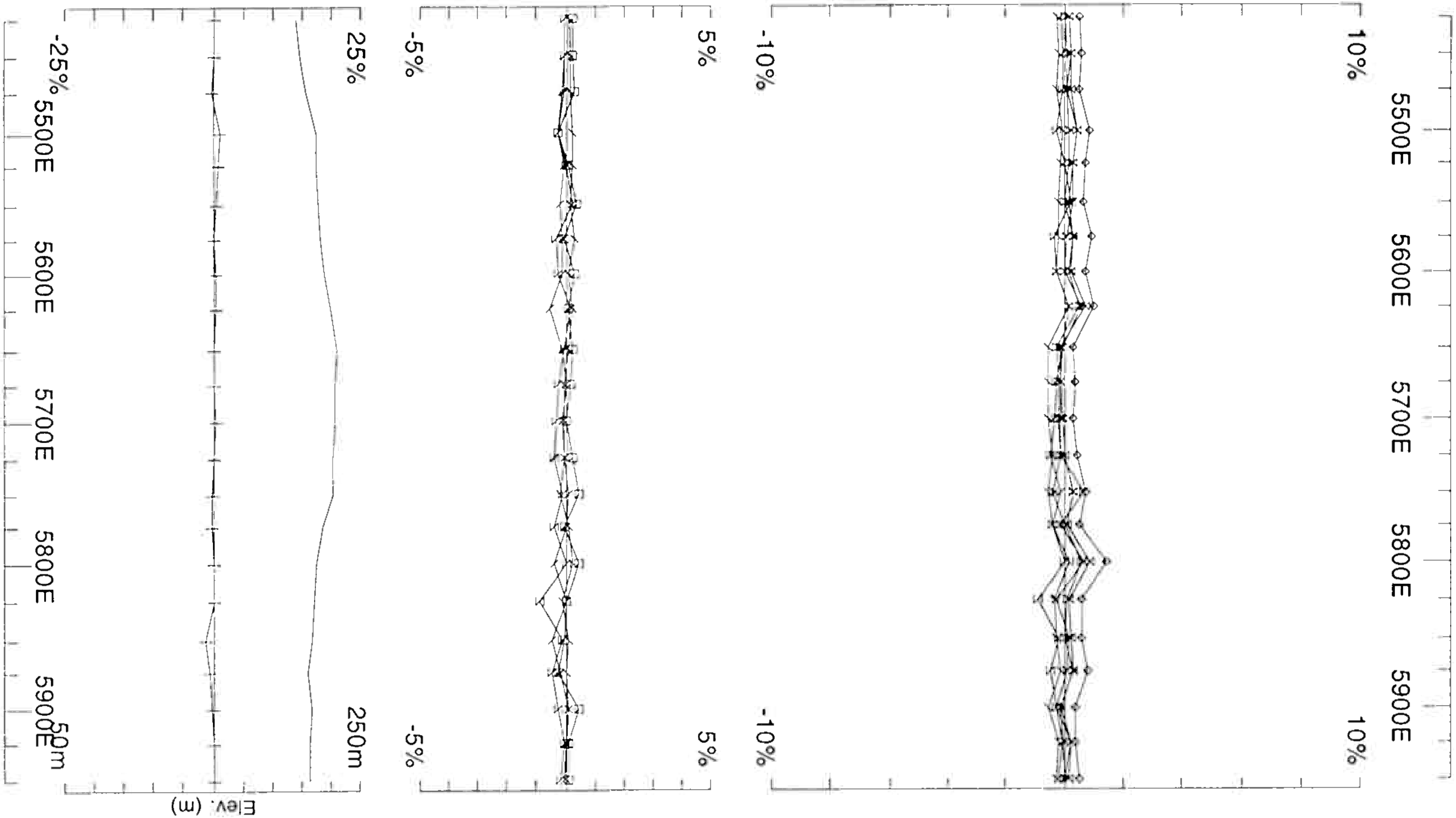
Loop: 07	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Storebraten Grid
Line: 6000N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Storebraten Grid
Line: 6050N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 6100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 6200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE — Job 0612 — Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6

Soknadalen Grid

Loop 08

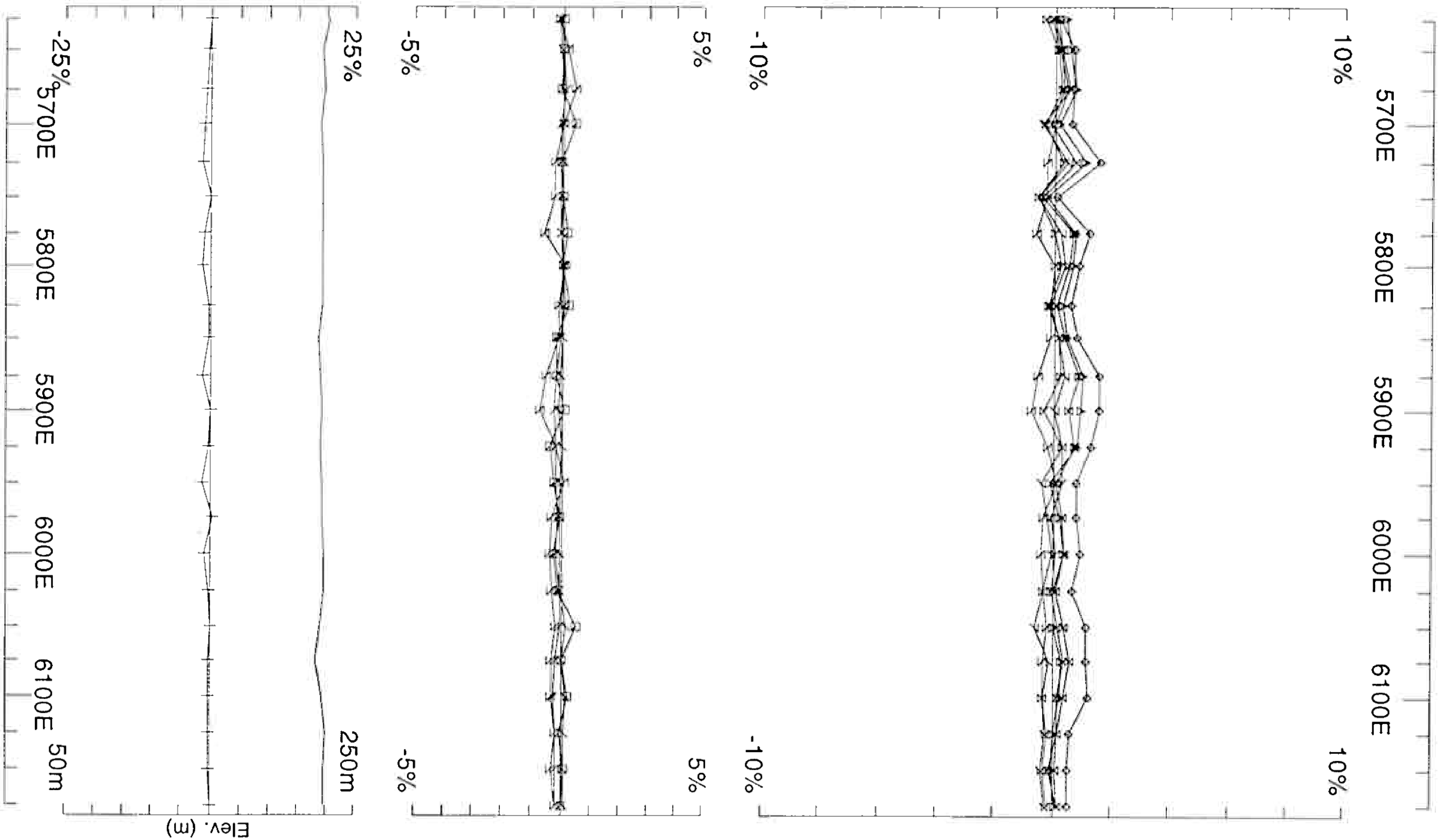
Hz
@3.251 Hz frequency

continuous norm

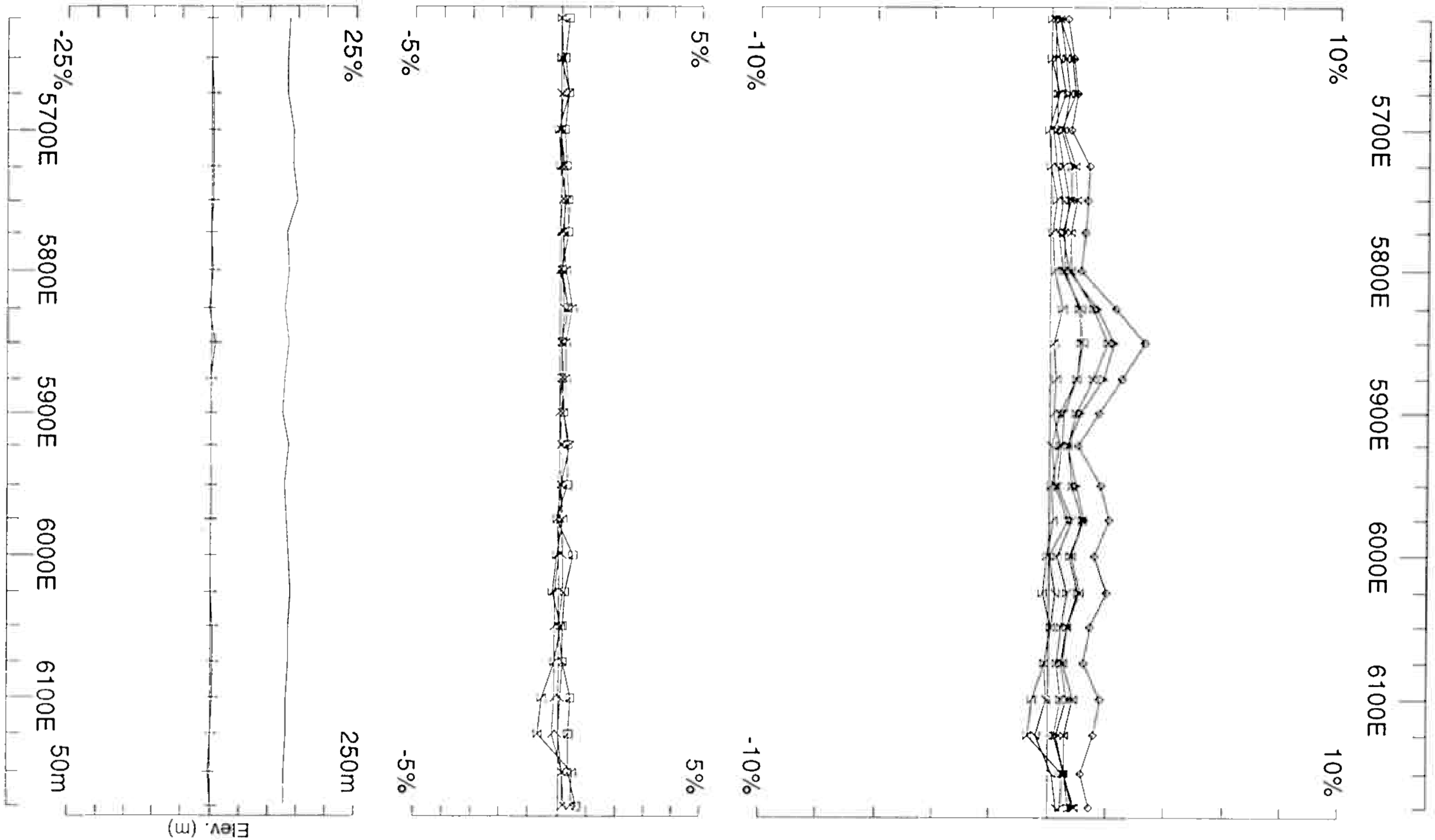
Ch1 reduced

Loop 08 Soknadalen	Line 4200N	5625E - 6175E	550m	1:4000
	Line 4300N	5625E - 6175E	550m	1:4000
	Line 4350N	5625E - 6200E	575m	1:4000
	Line 4400N	5650E - 6150E	500m	1:4000
	Line 4450N	5650E - 6175E	525m	1:4000
	Soknadalen	Loop 08 Total	2700m	

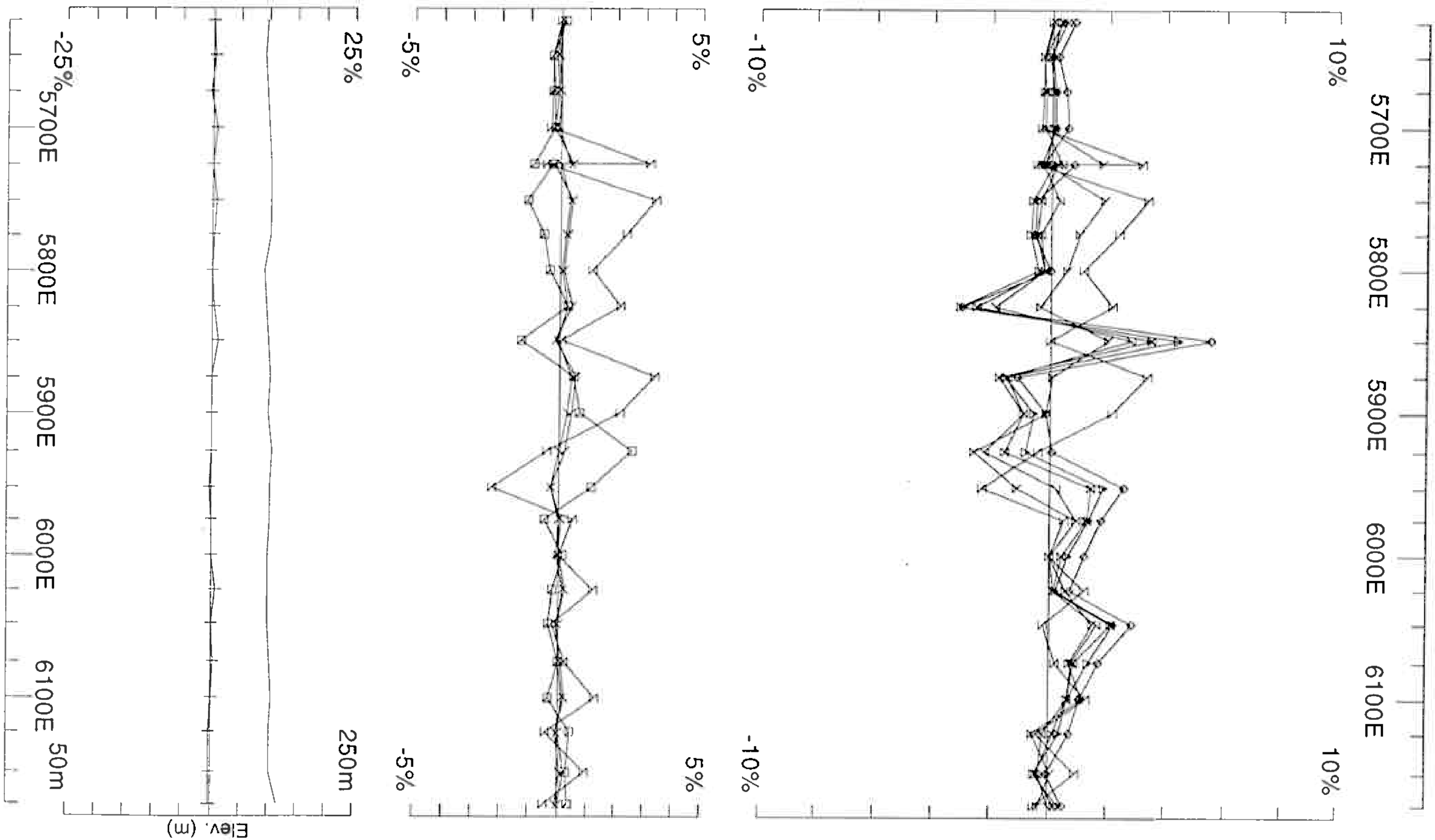
Loop 08 - continuous norm



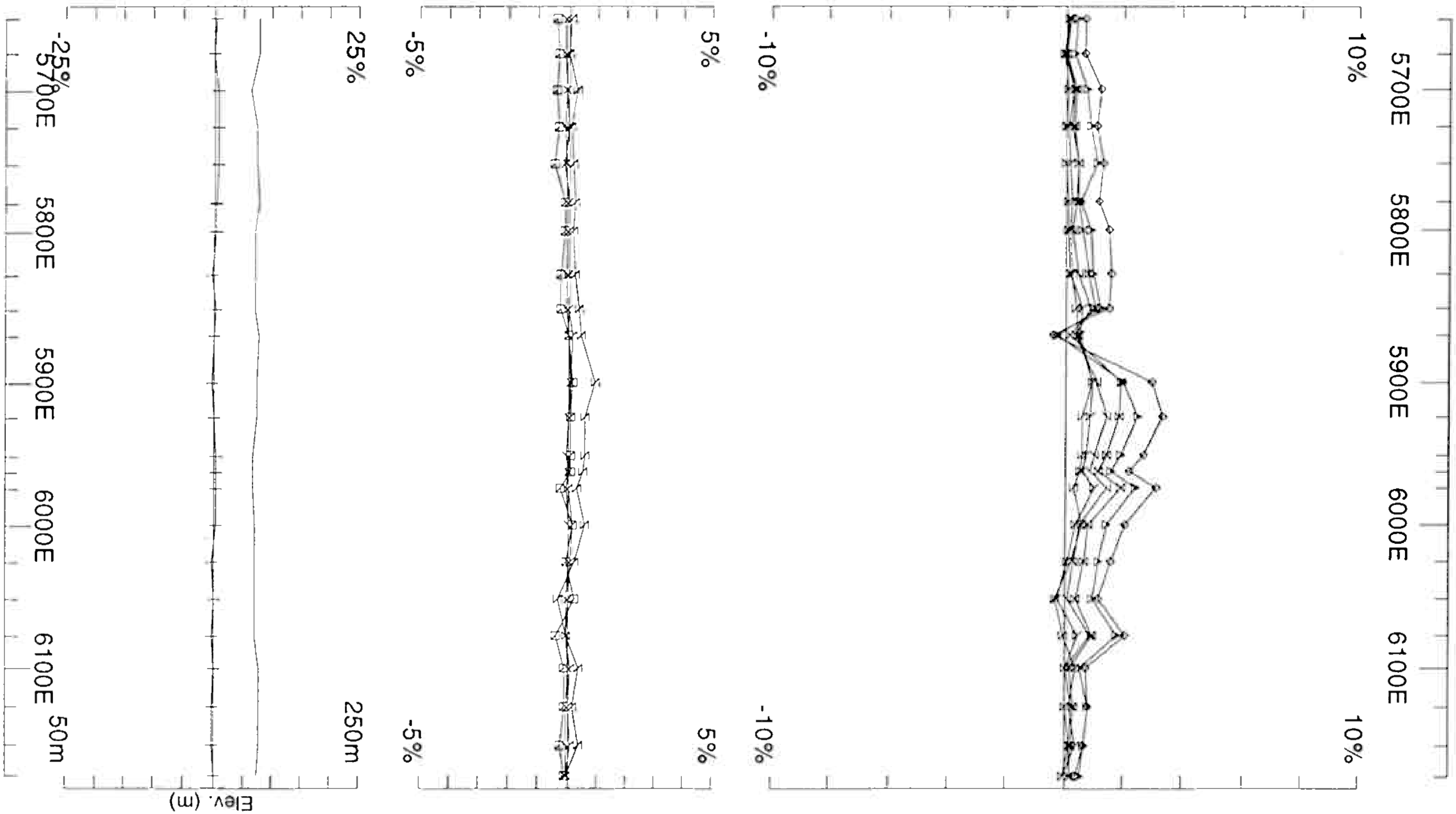
Loop: 08 Line: 4200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



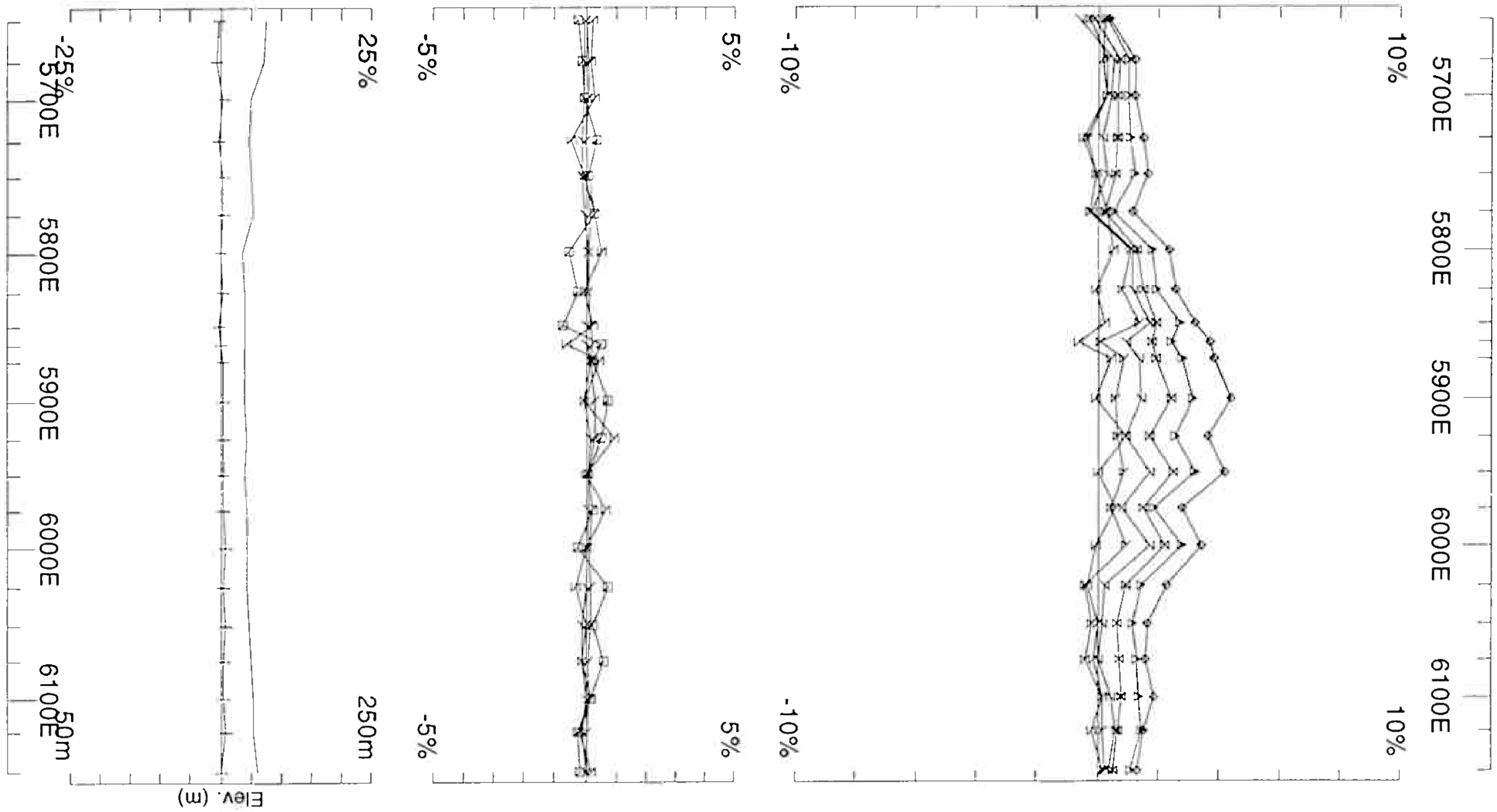
Loop: 08	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Soknadalen Grid
Line: 4300N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 08 Line: 4350N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Contin. Norm at depth of 0 m Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 7/4/6 Reduced : 7/4/6 Plotted : 13/6/6



Loop: 08	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Soknadalen Grid
Line: 4400N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 08	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Soknadalen Grid
Line: 4450N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6

Sigdal Grid

Loop 01

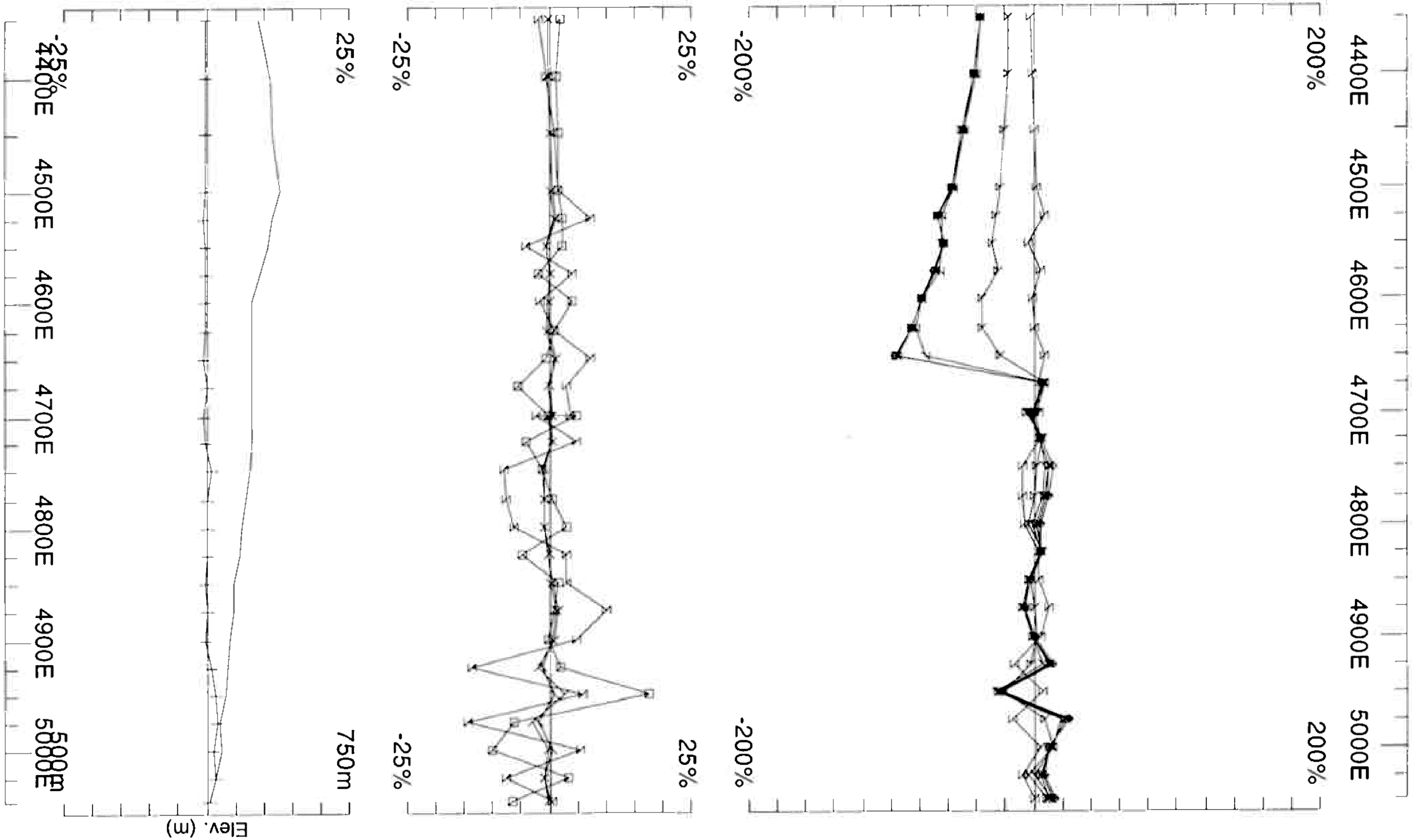
Hz
@3.251 Hz frequency

point norm
@ ~300m outside the loop centre
(x,y,z) = (4800E,9750N, 670 m.a.s.l.)

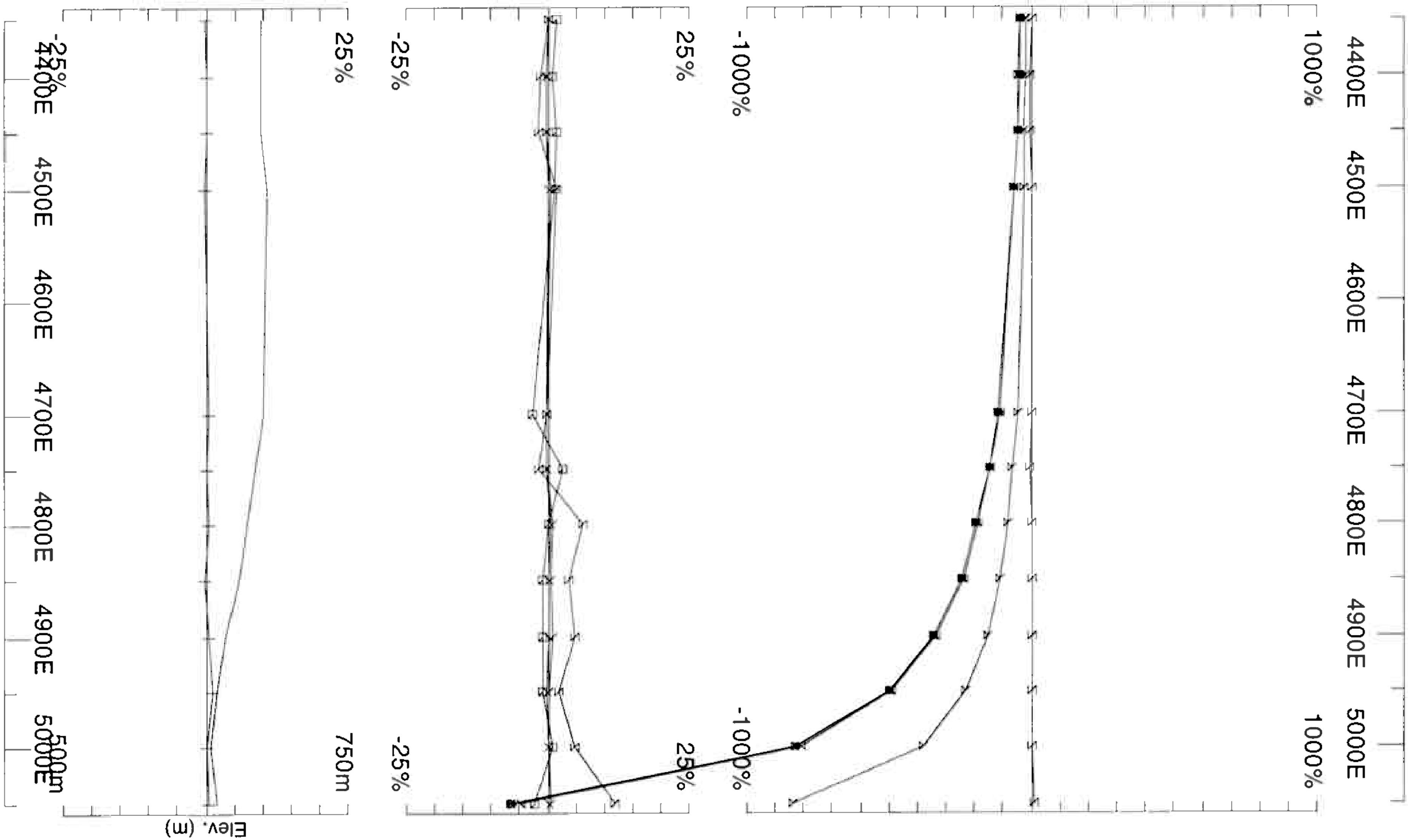
Ch1 reduced

Loop 01 Sigdal	Line 9400N	4350E - 5050E	700m	1:5000
	Line 9500N	4350E - 4500E	150m	1:5000
		4700E - 5050E	350m	
	Line 9600N	4350E - 5050E	700m	1:5000
	Line 9650N	4350E - 5050E	700m	1:5000
	Line 9700N	4350E - 5050E	700m	1:5000
	Line 9750N	4350E - 5050E	700m	1:5000
	Line 9800N	4350E - 5050E	700m	1:5000
	Line 9850N	4350E - 5050E	700m	1:5000
	Line 9900N	4350E - 5050E	700m	1:5000
	Line 10100N	4350E - 5050E	700m	1:5000
	Sigdal Grid	Loop 01 Total	6800m	

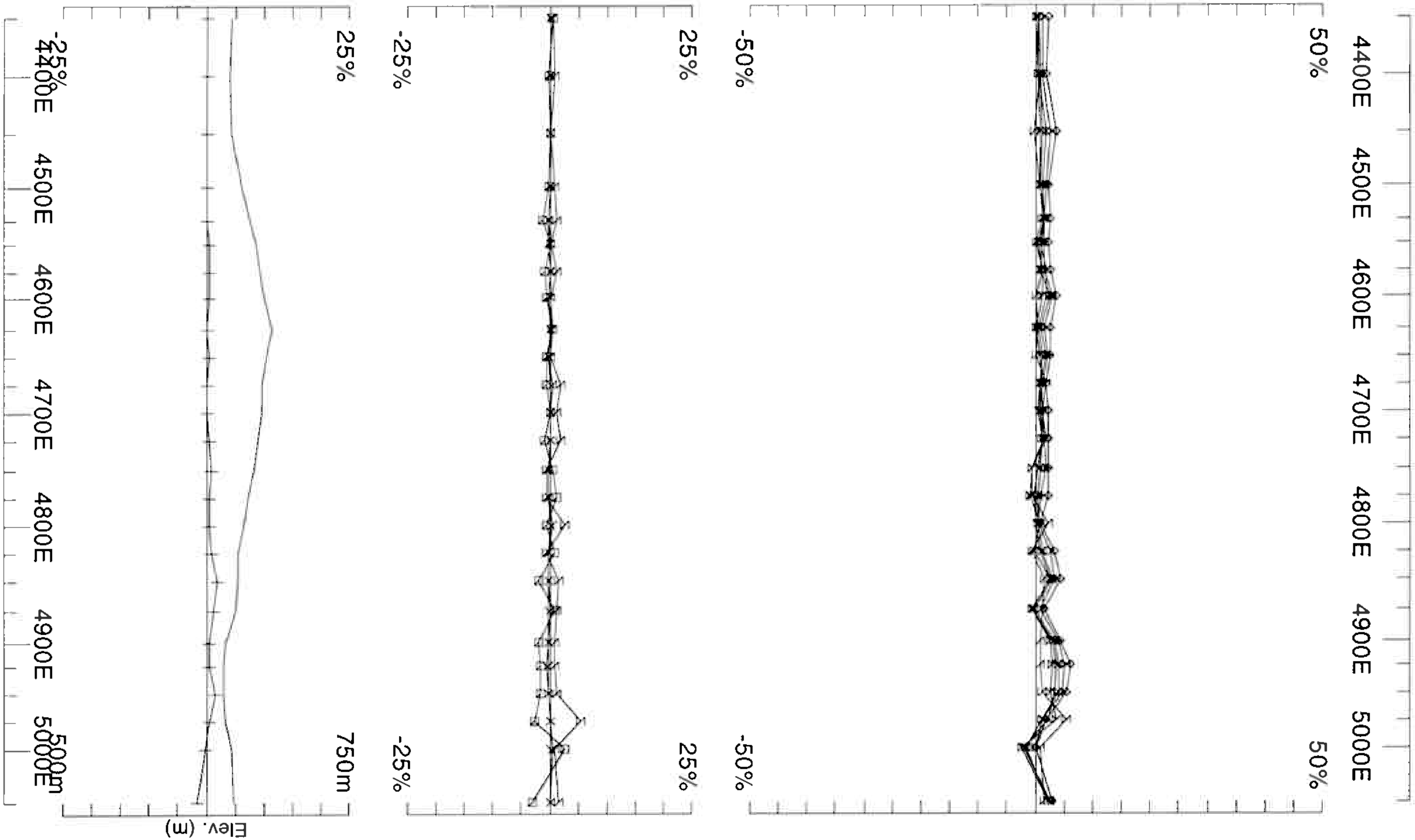
Loop 01 - point norm



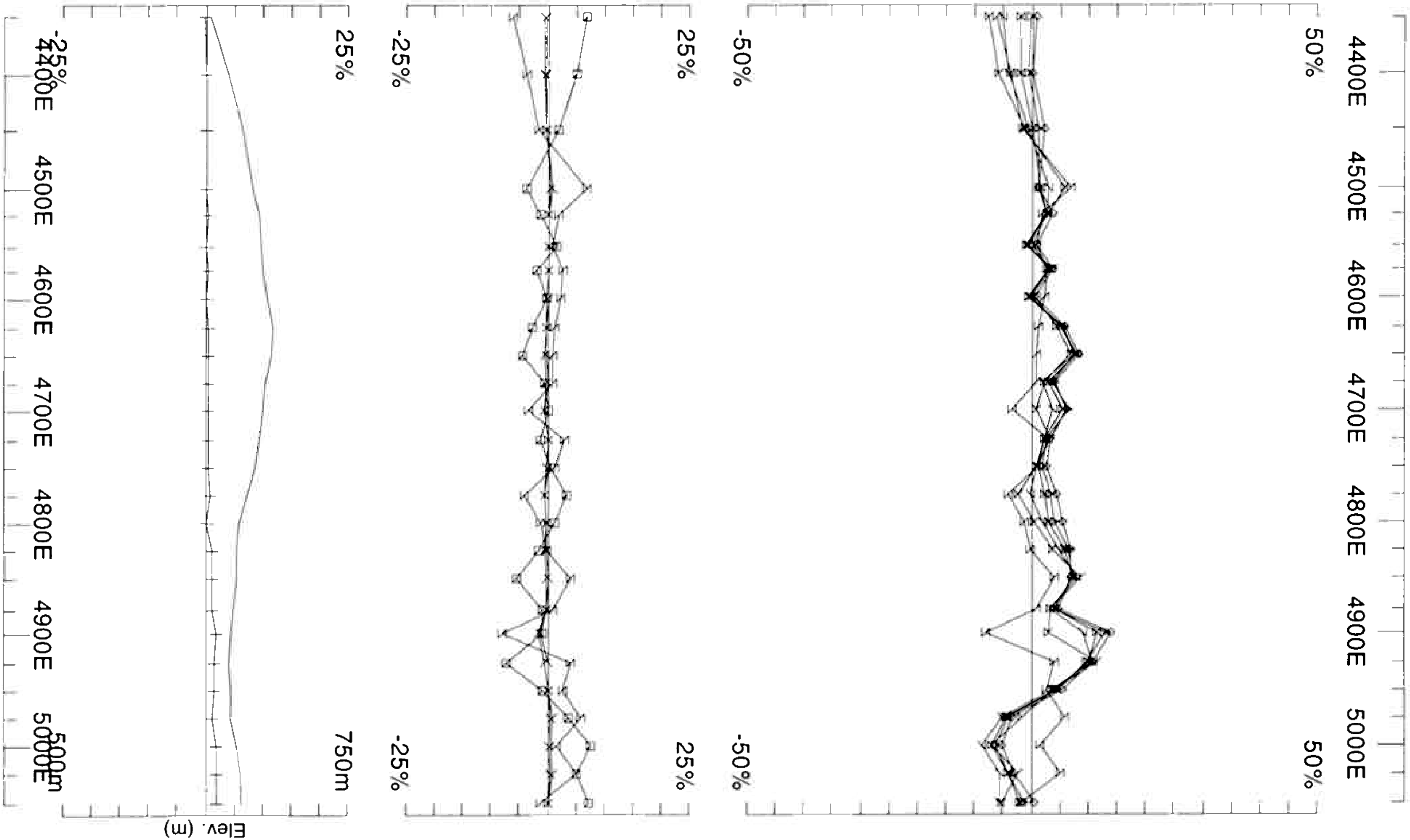
Loop: 01 Line: 9400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 17/3/6 Reduced : 26/5/6 Plotted : 12/6/6



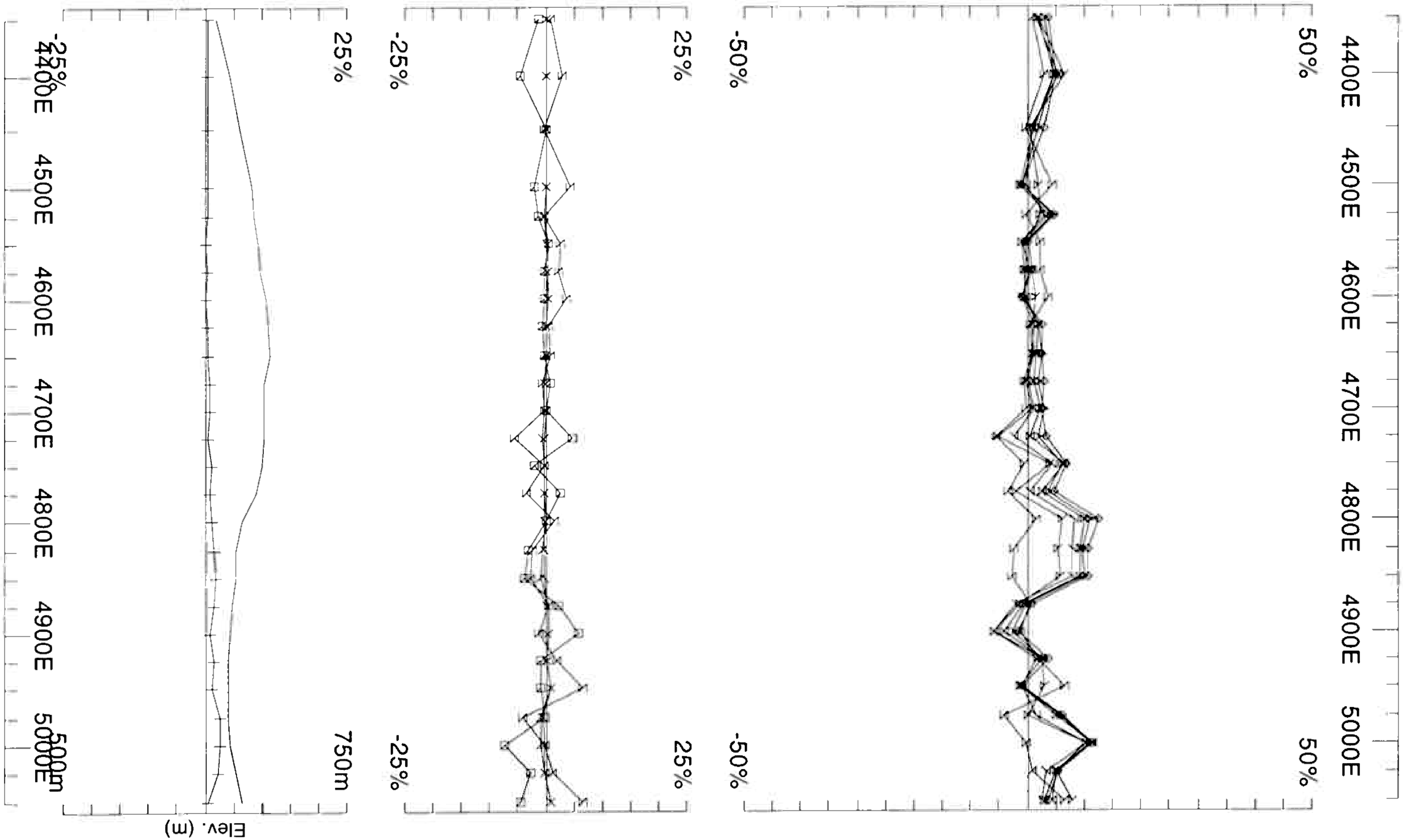
Loop: 01 Line: 9500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 19/3/6 Reduced : 19/3/6 Plotted : 12/6/6



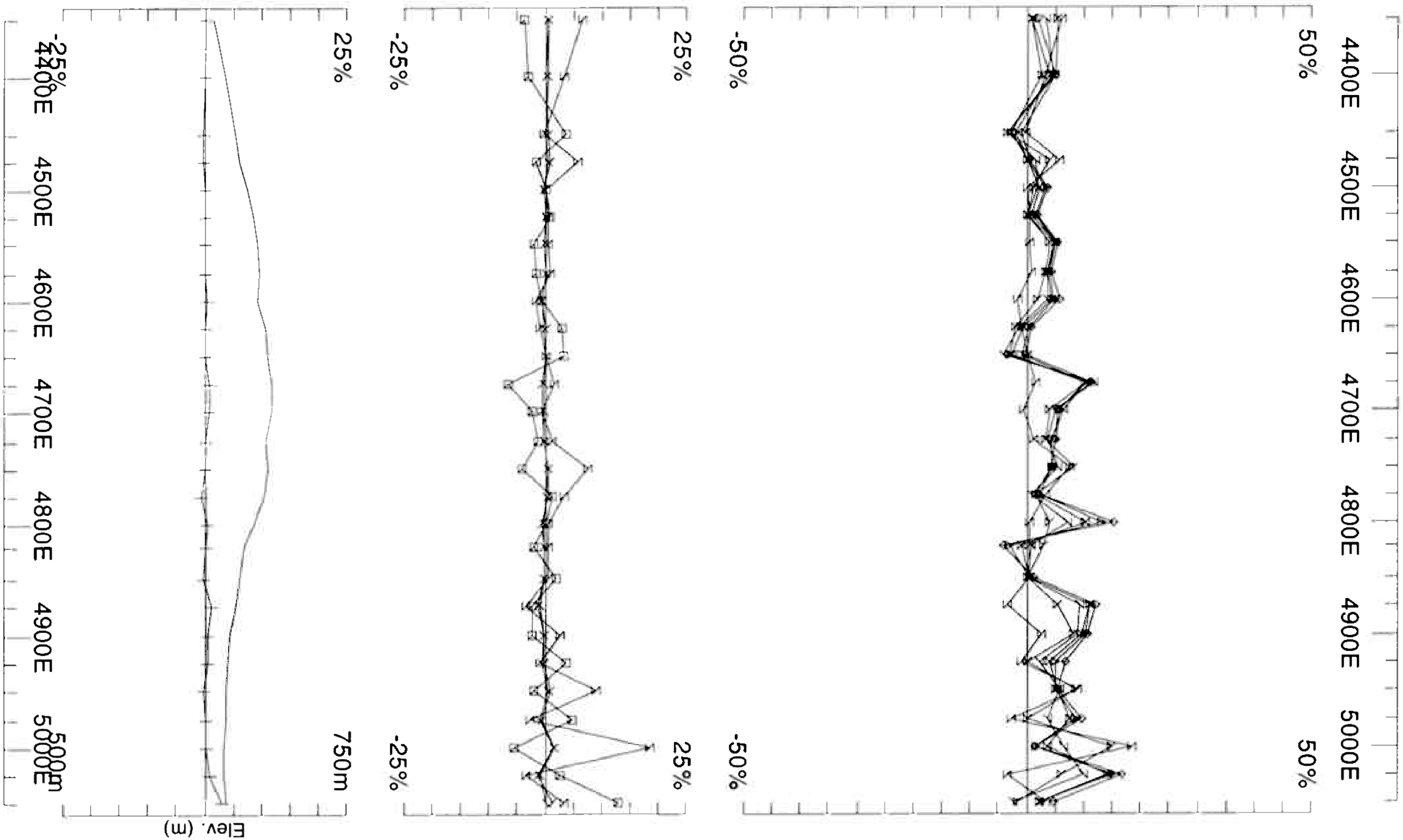
Loop: 01 Line: 9600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 19/3/6 Reduced : 9/6/6 Plotted : 12/6/6



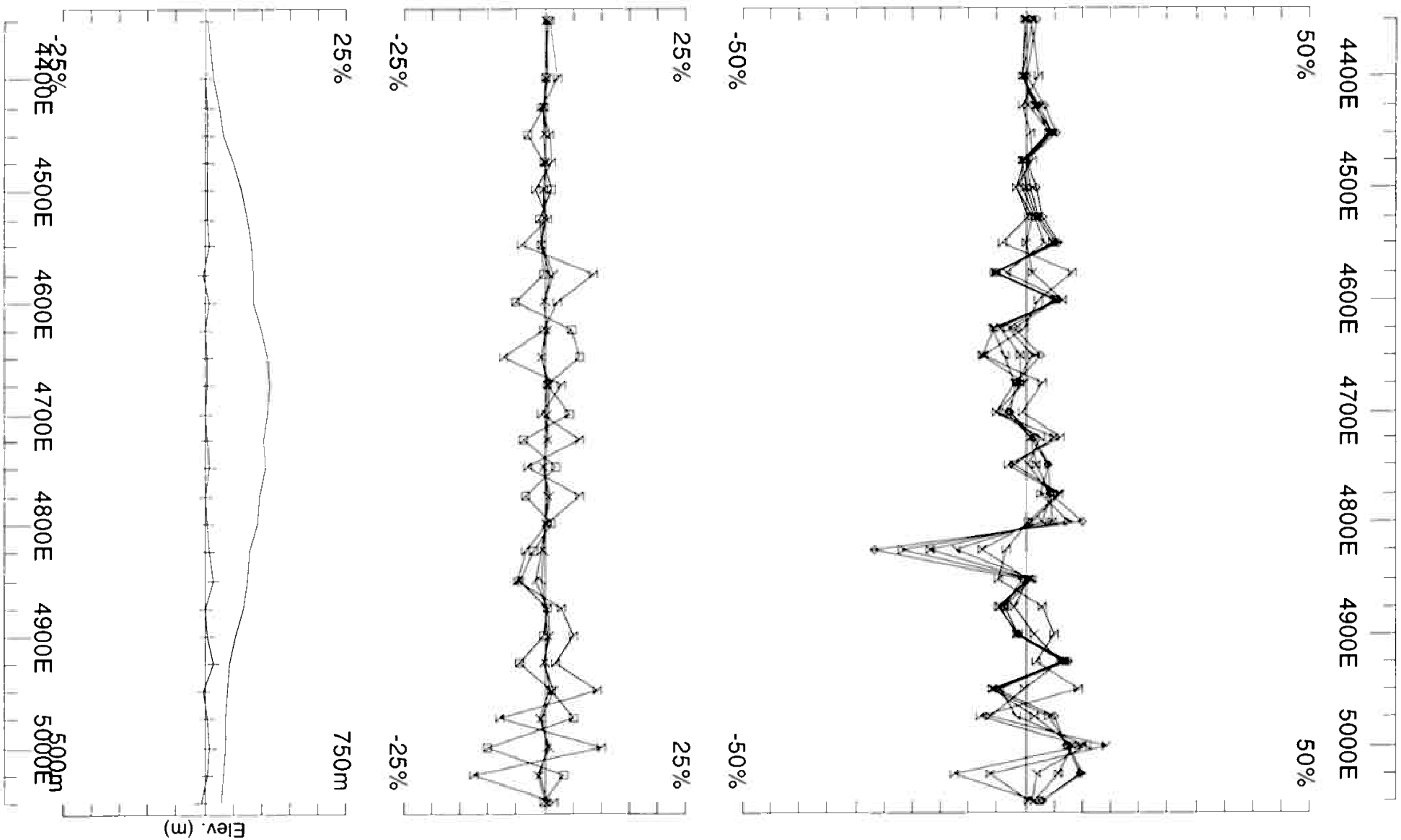
Loop: 01 Line: 9650N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 20/3/6 Reduced : 9/6/6 Plotted : 12/6/6



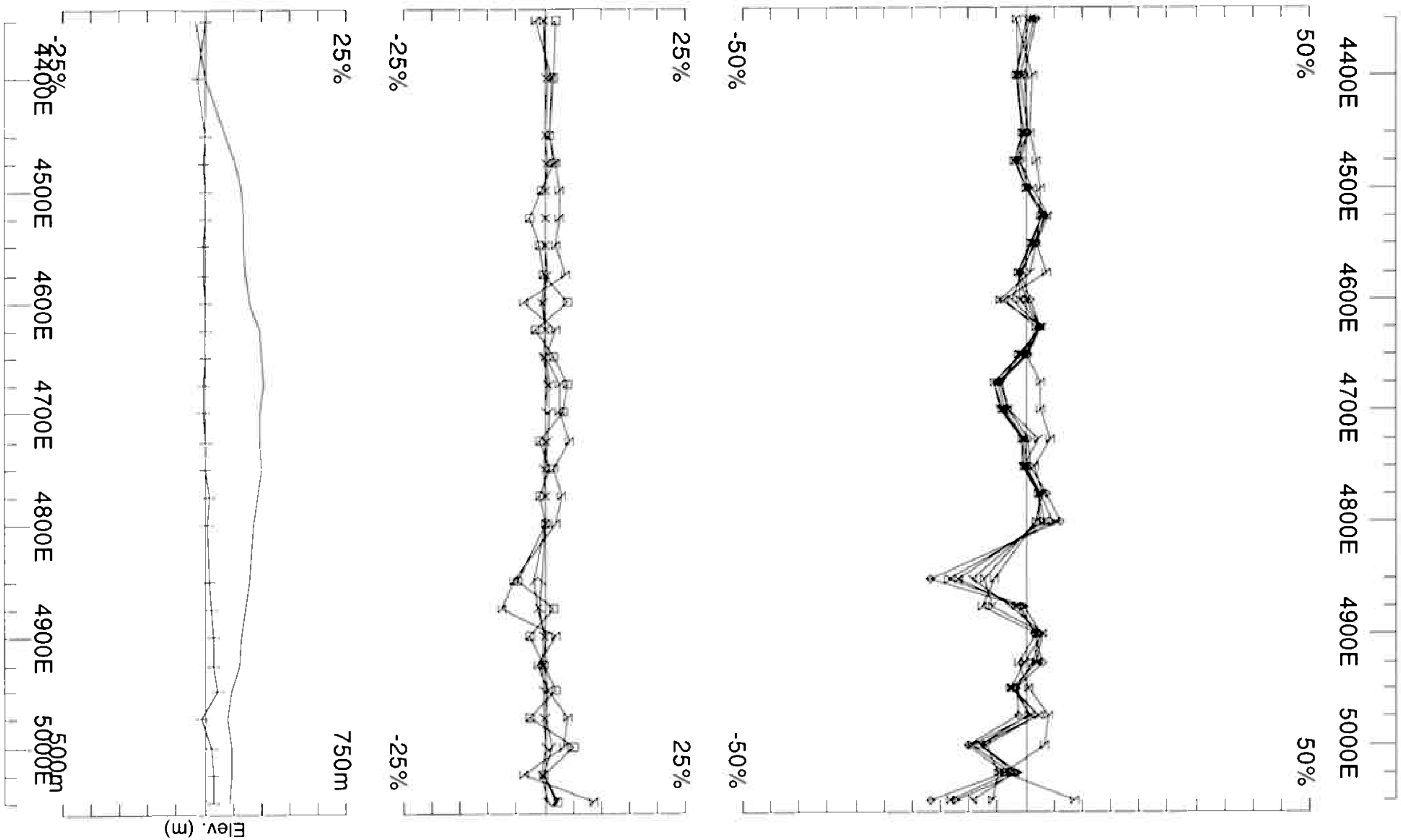
Loop: 01 Line: 9700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 20/3/6 Reduced : 9/6/6 Plotted : 12/6/6



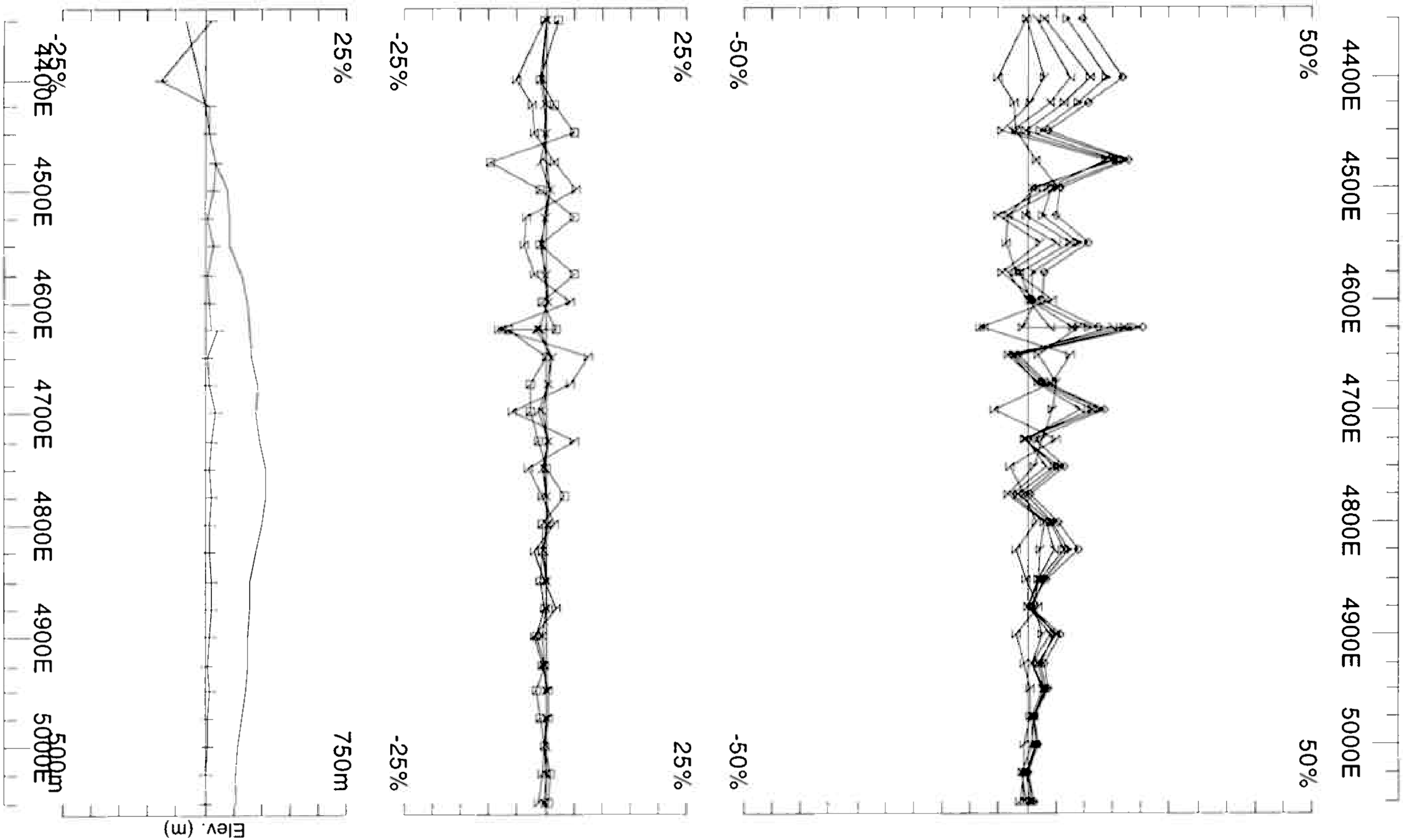
Loop: 01 Line: 9750N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 22/3/6 Reduced : 9/6/6 Plotted : 12/6/6



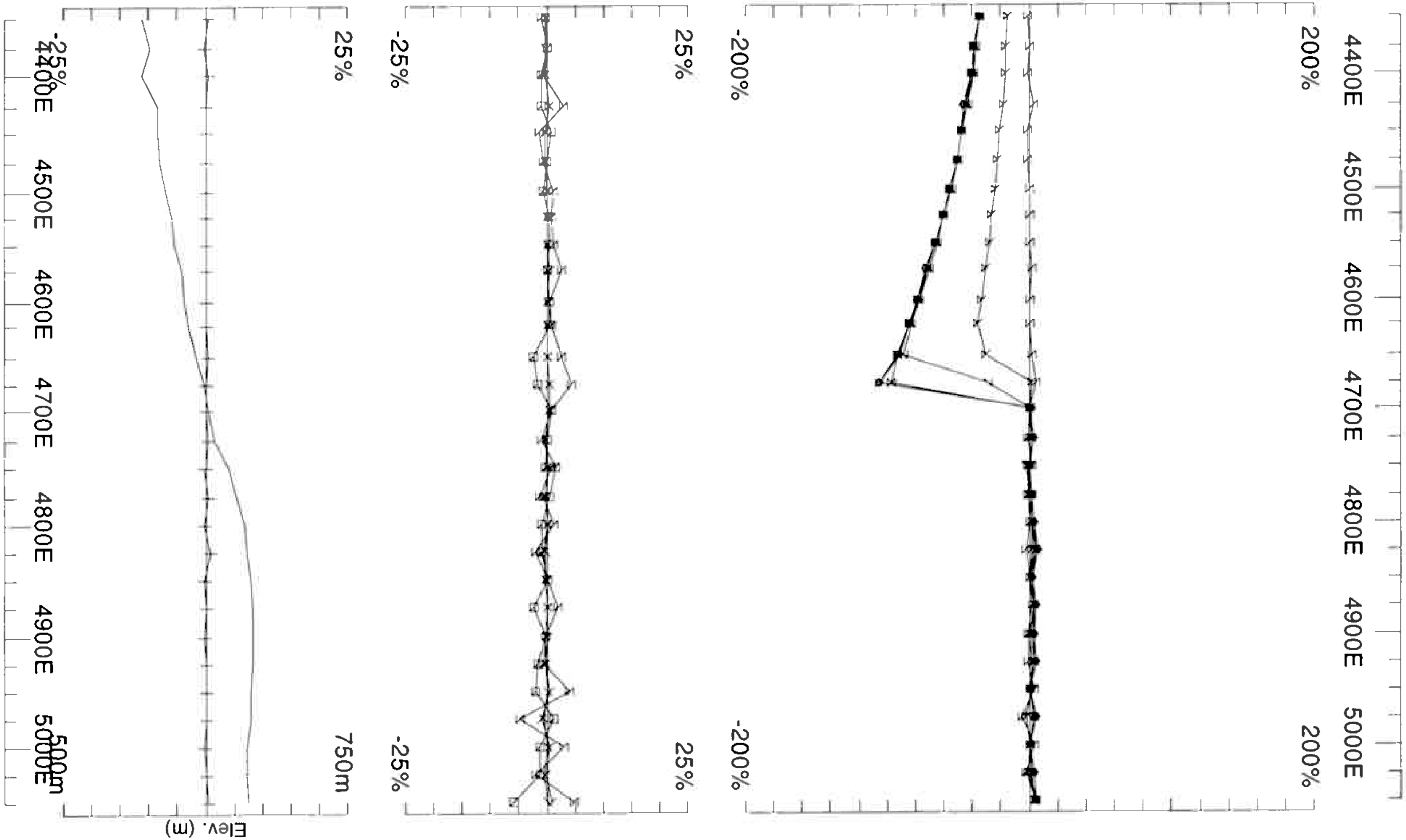
Loop: 01 Line: 9800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 22/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01 Line: 9850N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 21/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01	Secondary, (Chn - Ch1)/|Hp|	UTEM Survey at: Sigdal Grid
Line: 9900N	Contin. Norm at depth of 0 m	For: A/S Sulfidmalm
Compt: Hz	Base Freq. 3.251 Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 21/3/6 Reduced : 9/6/6 Plotted : 12/6/6



Loop: 01 Line: 10100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4800,9750,670) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 17/3/6 Reduced : 26/5/6 Plotted : 12/6/6

Sigdal Grid

Loop 01B

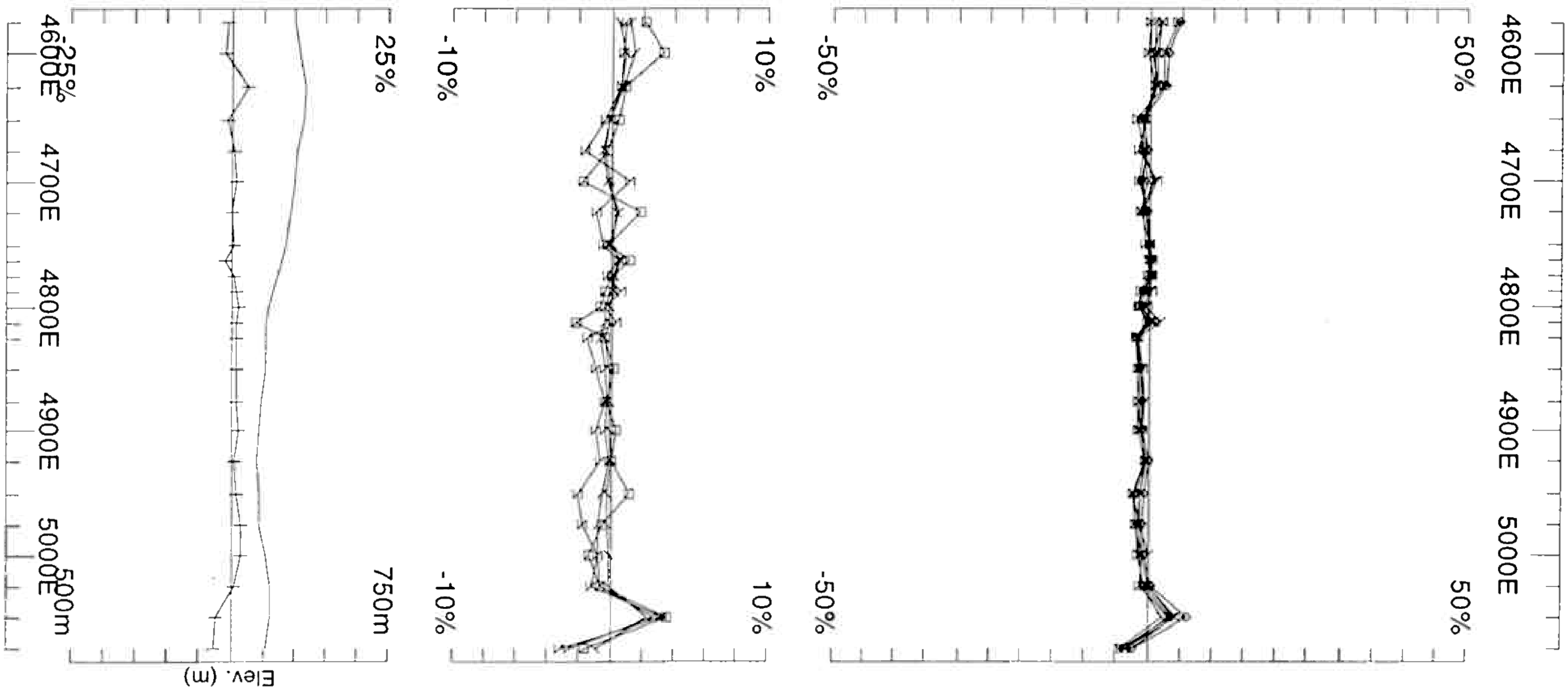
Hz
@3.251 Hz frequency

point norm
@ ~centre of the loop
(x,y,z) = (4825E,9850N, 630 m.a.s.l.)

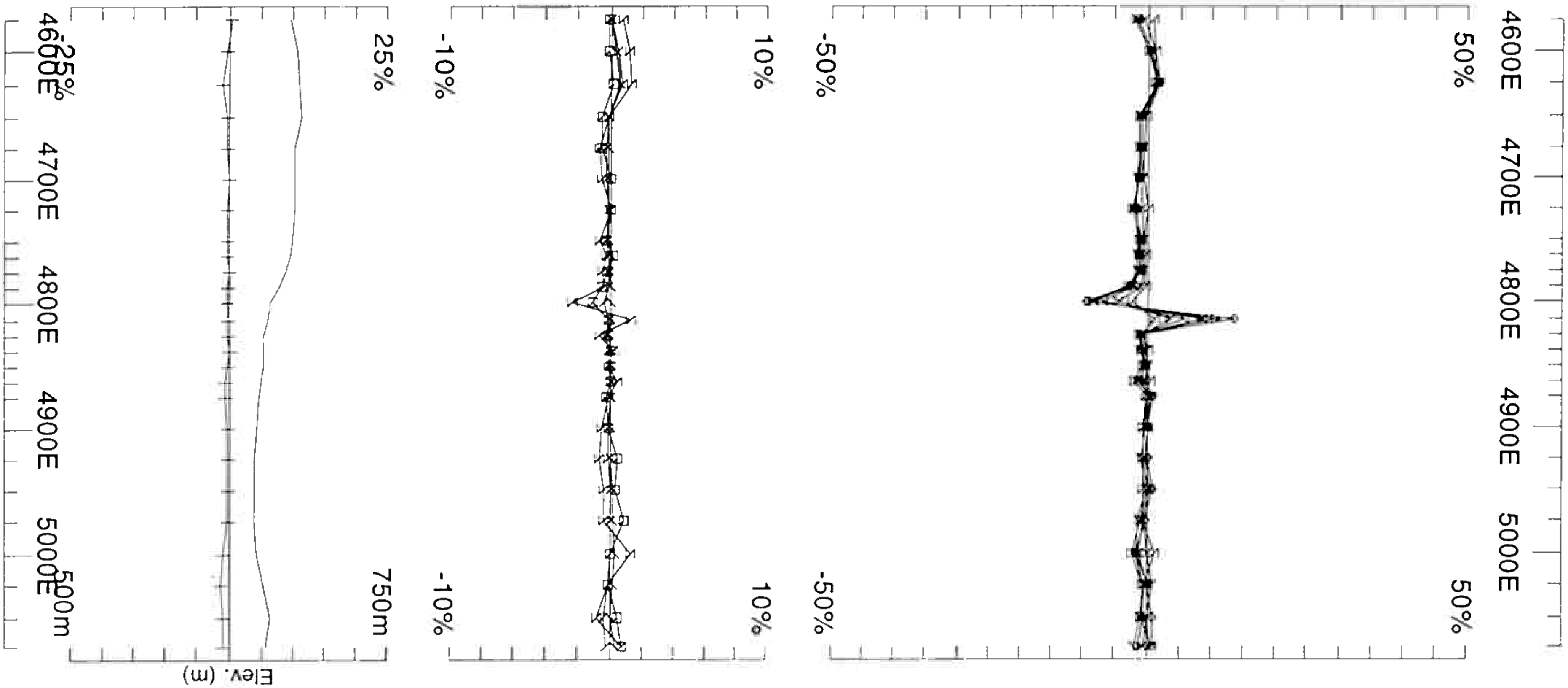
Ch1 reduced

Loop 01B Sigdal	Line 9650N	4575E - 5075E	500m	1:5000
	Line 9700N	4575E - 5075E	500m	1:5000
	Line 9750N	4575E - 5075E	500m	1:5000
	Line 9800N	4575E - 5075E	500m	1:5000
	Line 9850N	4575E - 5075E	500m	1:5000
	Line 9900N	4575E - 5075E	500m	1:5000
	Line 9950N	4575E - 5050E	475m	1:5000
	Sigdal GridLoop 01B Total		3475m	

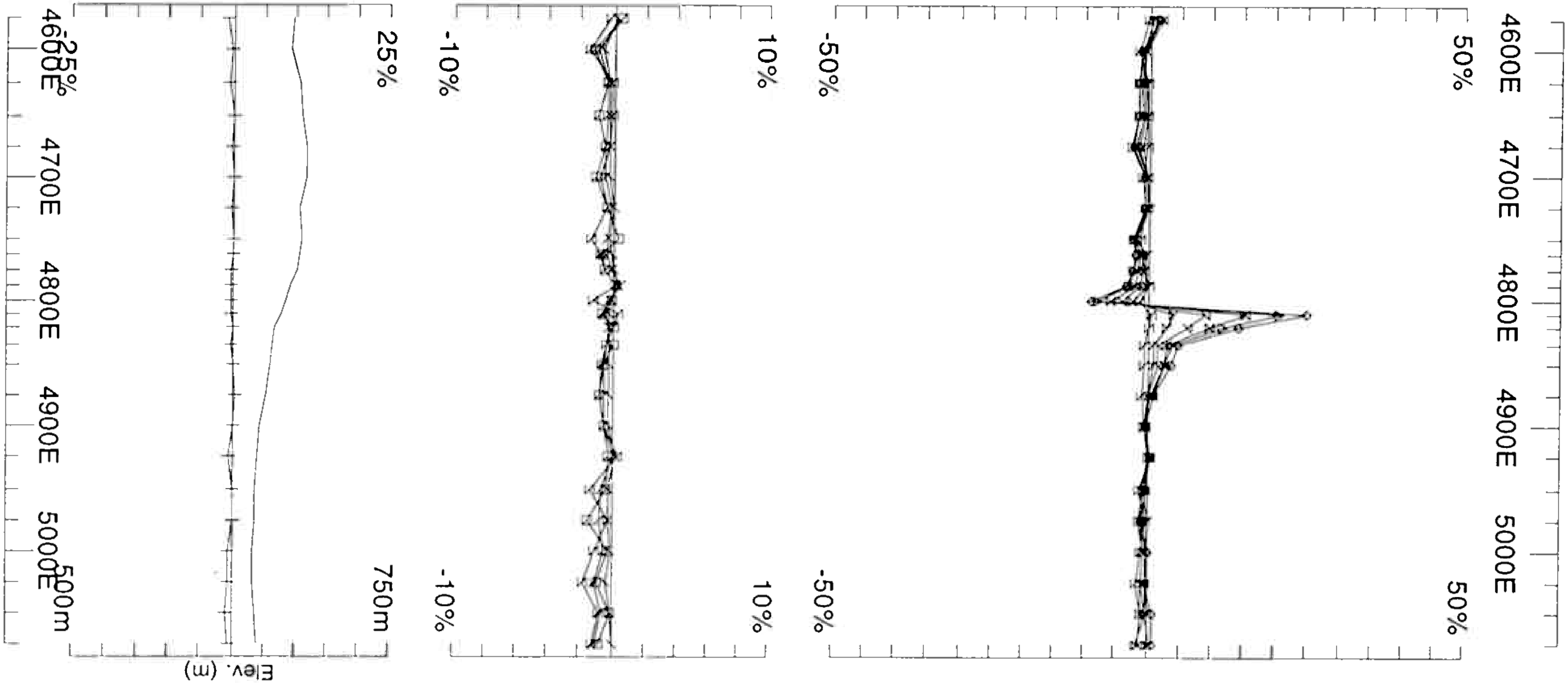
Loop 01B - point norm



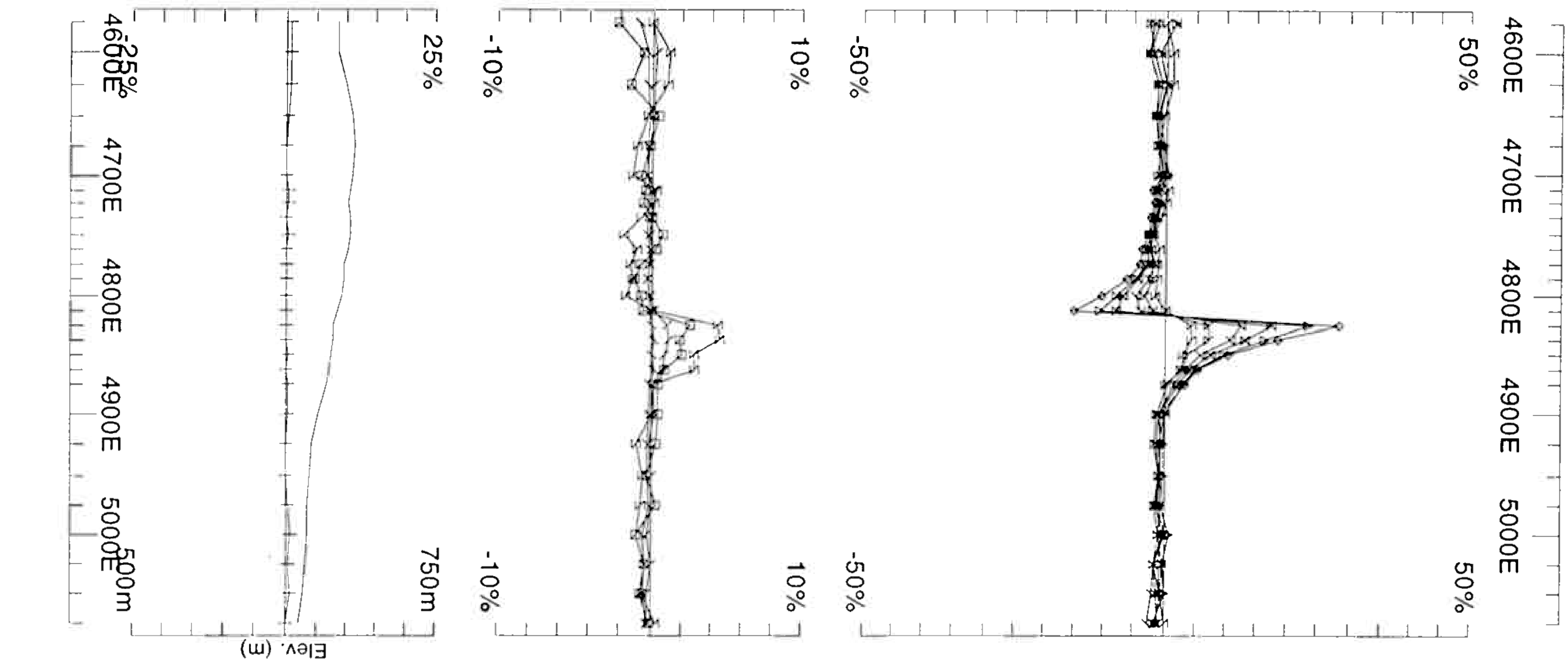
Loop: 01B Line: 9650N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 24/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B Line: 9700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B Line: 9750N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B
Line: 9800N
Compt: Hz

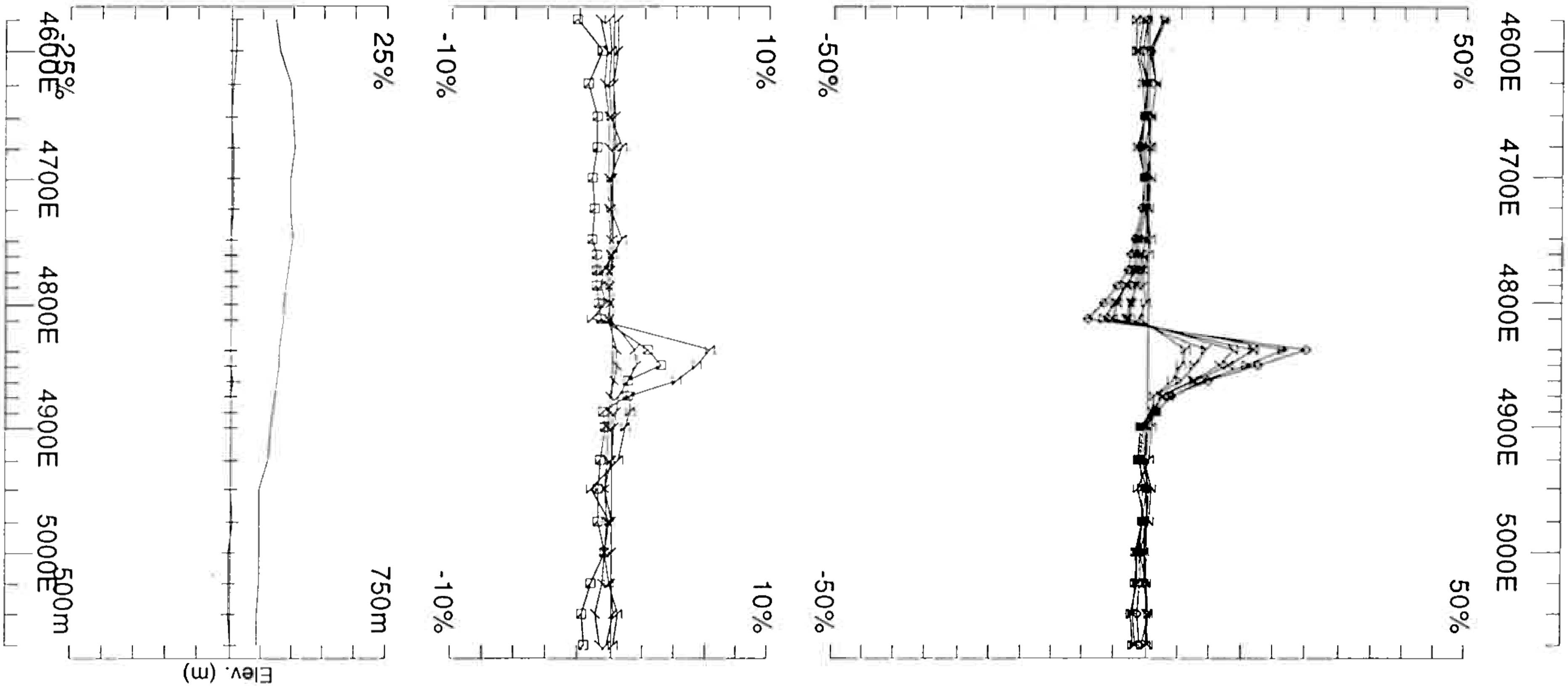
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(4825,9850,630)
Base Freq. 3.251 Hz

UTEM Survey at: Sigdal Grid
For: A/S Sulfidmalm

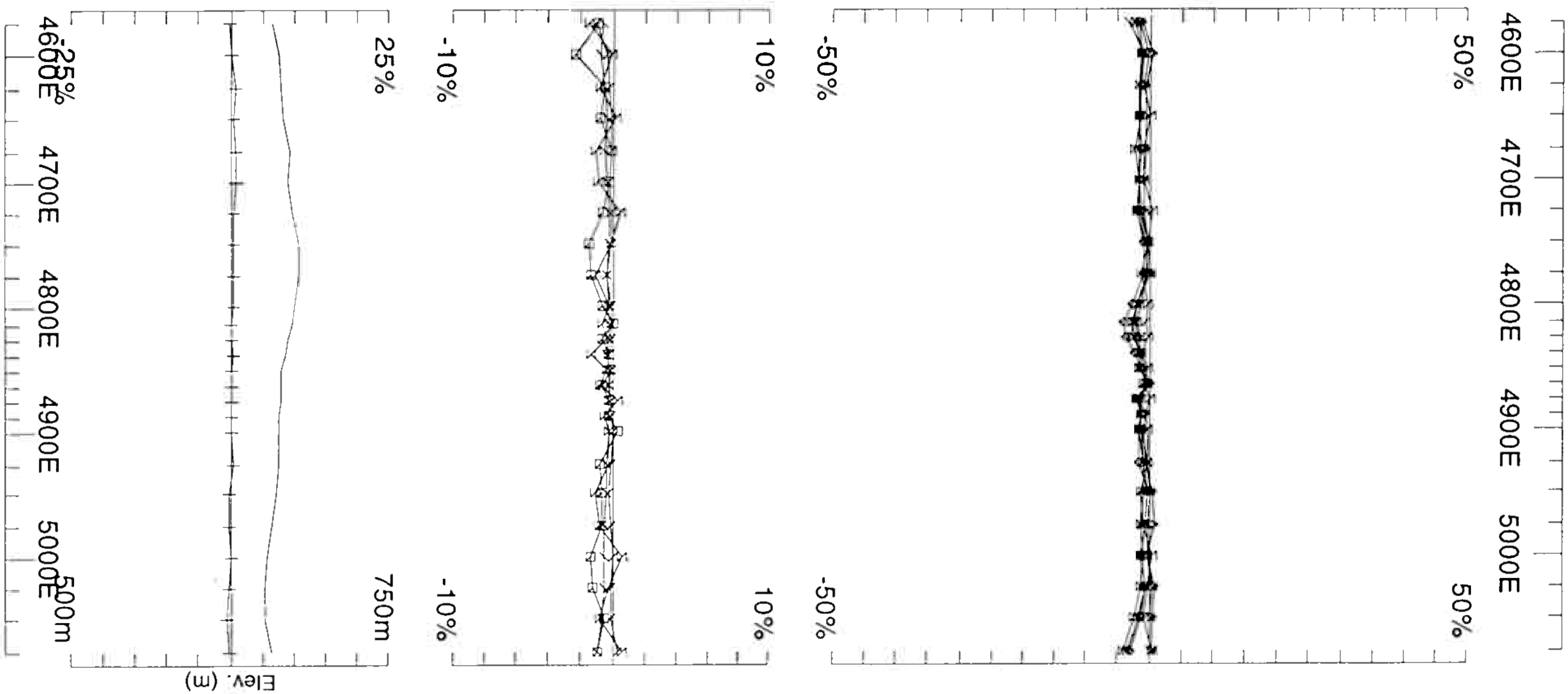
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

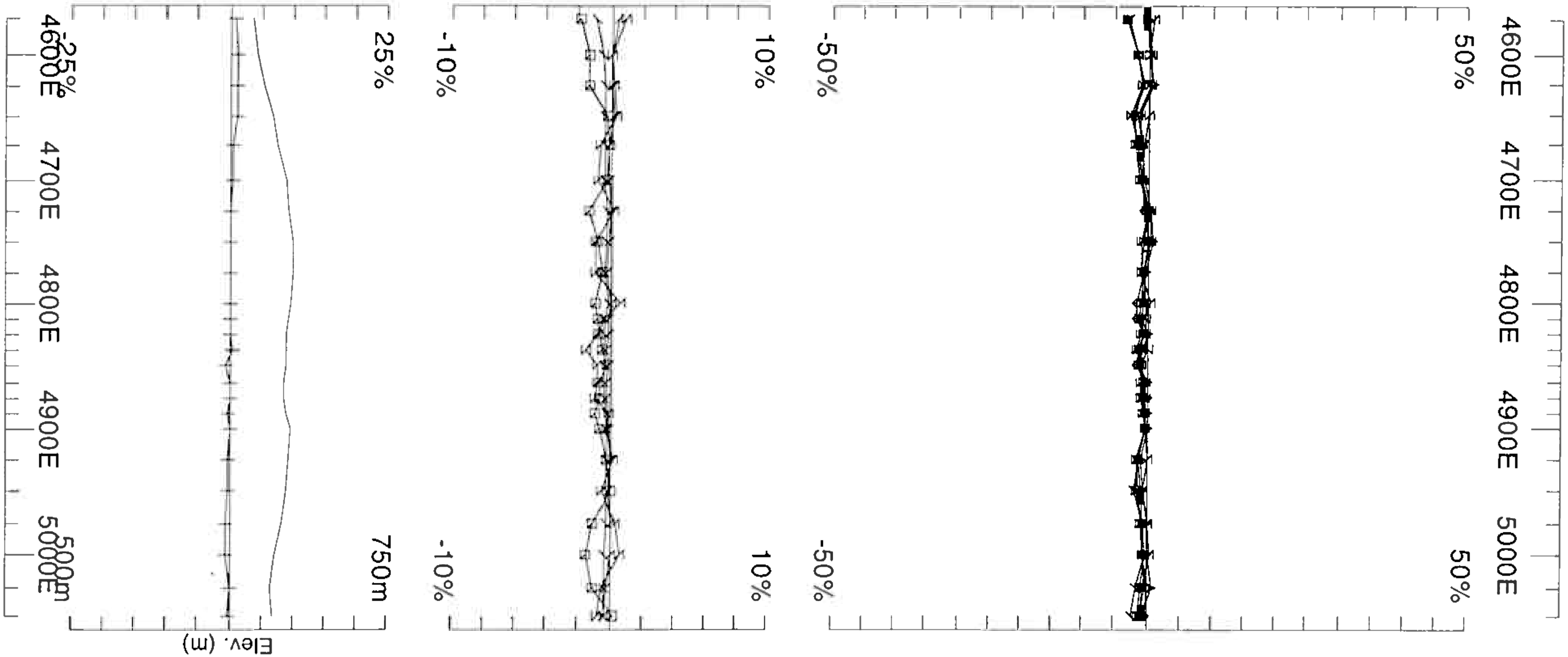
Surveyed : 24/3/6
Reduced : 29/5/6
Plotted : 12/6/6



Loop: 01B Line: 9850N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B Line: 9900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6



Loop: 01B Line: 9950N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (4825,9850,630) Base Freq. 3.251 Hz	UTEM Survey at: Sigdal Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 23/3/6 Reduced : 29/5/6 Plotted : 12/6/6

Ertelien Mine Grid

Loop 02

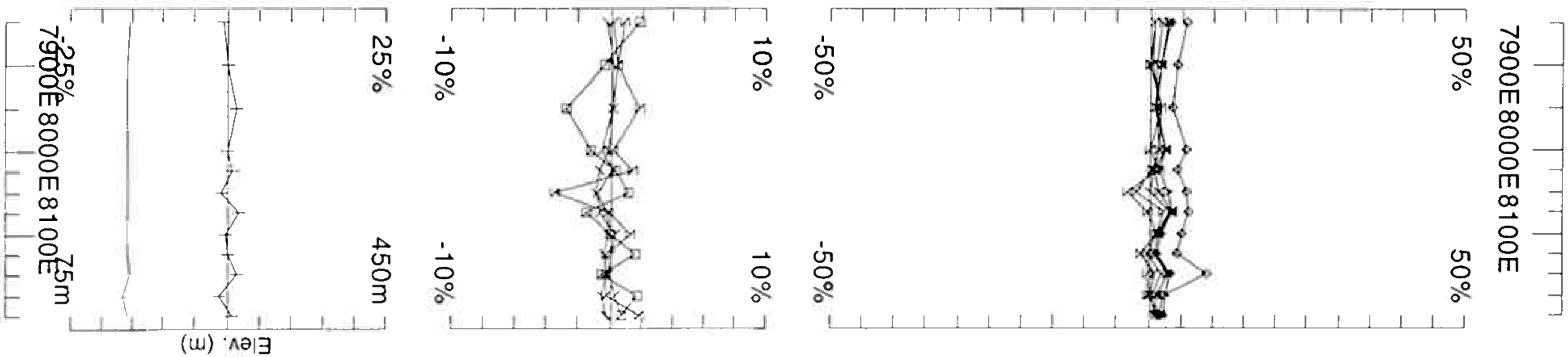
Hz
@3.251 Hz frequency

point norm
@ ~ centre of the loop
(x,y,z) = (8000E,9400N, 200 m.a.s.l.)

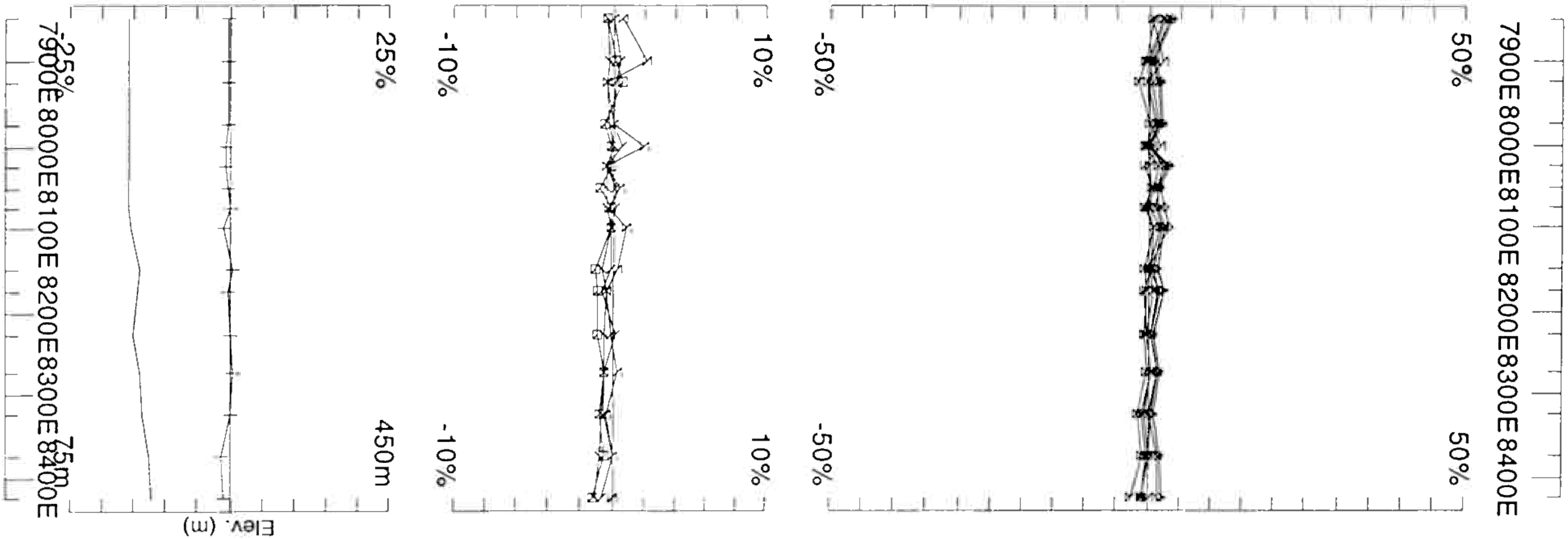
Ch1 reduced

Loop 02 Ertelien Mine	Line 8900N	7850E - 8200E	350m	1:7500
	Line 9000N	7850E - 8425E	575m	1:7500
	Line 9100N	7850E - 8425E	575m	1:7500
	Line 9200N	7850E - 8425E	575m	1:7500
	Line 9300N	7850E - 8450E	600m	1:7500
	Line 9400N	8100E - 8450E	350m	1:7500
	Line 9500N	7925E - 8450E	525m	1:7500
	Line 9600N	7475E - 7800E	325m	1:7500
		7900E - 8400E	500m	
	Line 9650N	7950E - 8450E	500m	1:7500
	Line 9700N	7425E - 7825E	400m	1:7500
		8000E - 8450E	450m	
	Line 9750N	8000E - 8450E	450m	1:7500
	Line 9800N	7425E - 7825E	400m	1:7500
		8000E - 8450E	450m	
	Line 9900N	7450E - 8450E	1000m	1:7500
	Ertelien Mine	Loop 02 Total	8025m	

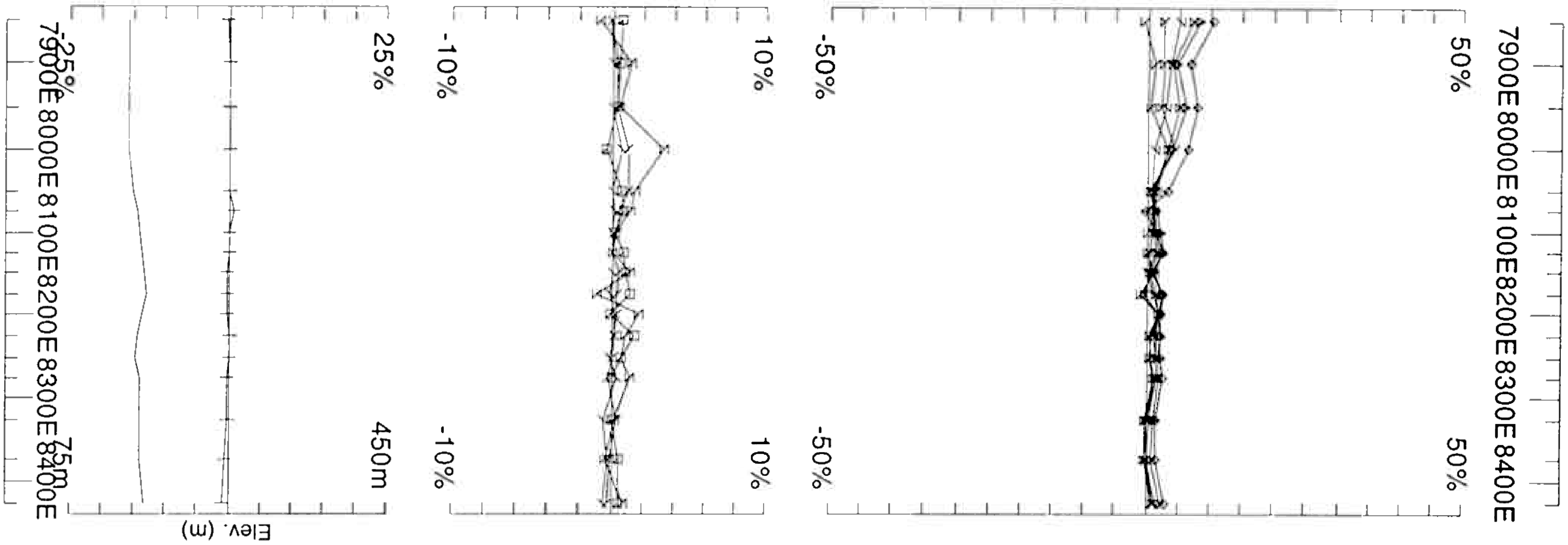
Loop 02 - point norm



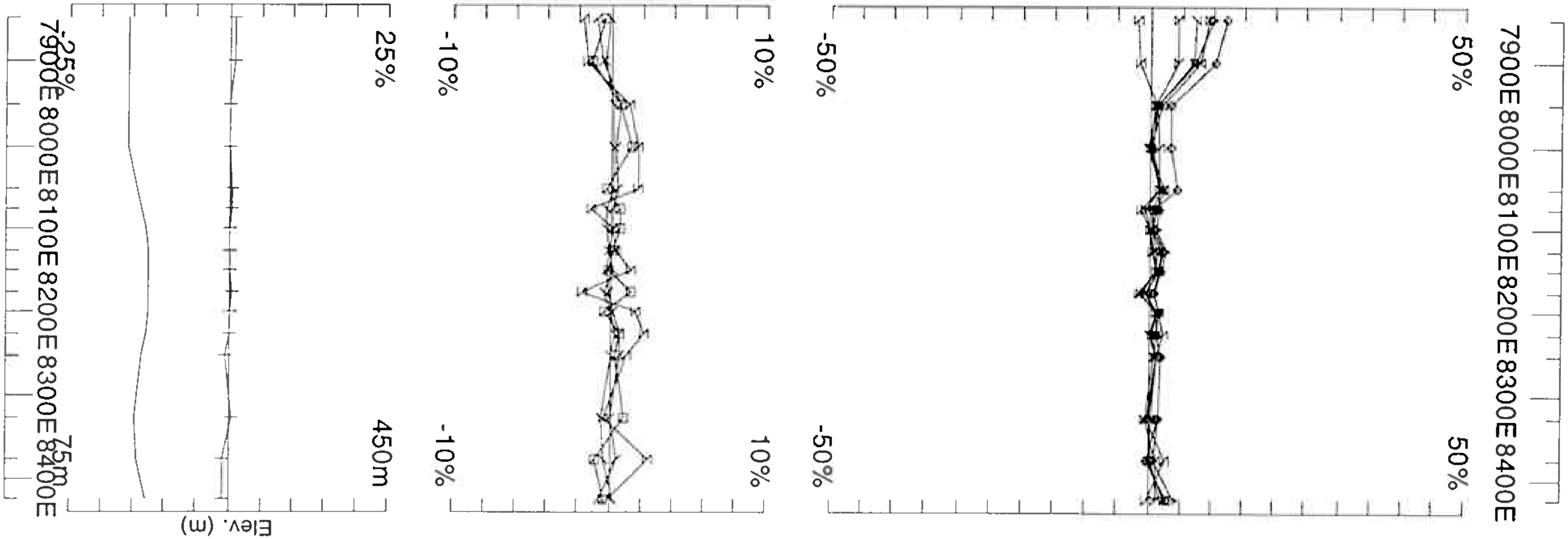
Loop: 02 Line: 8900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



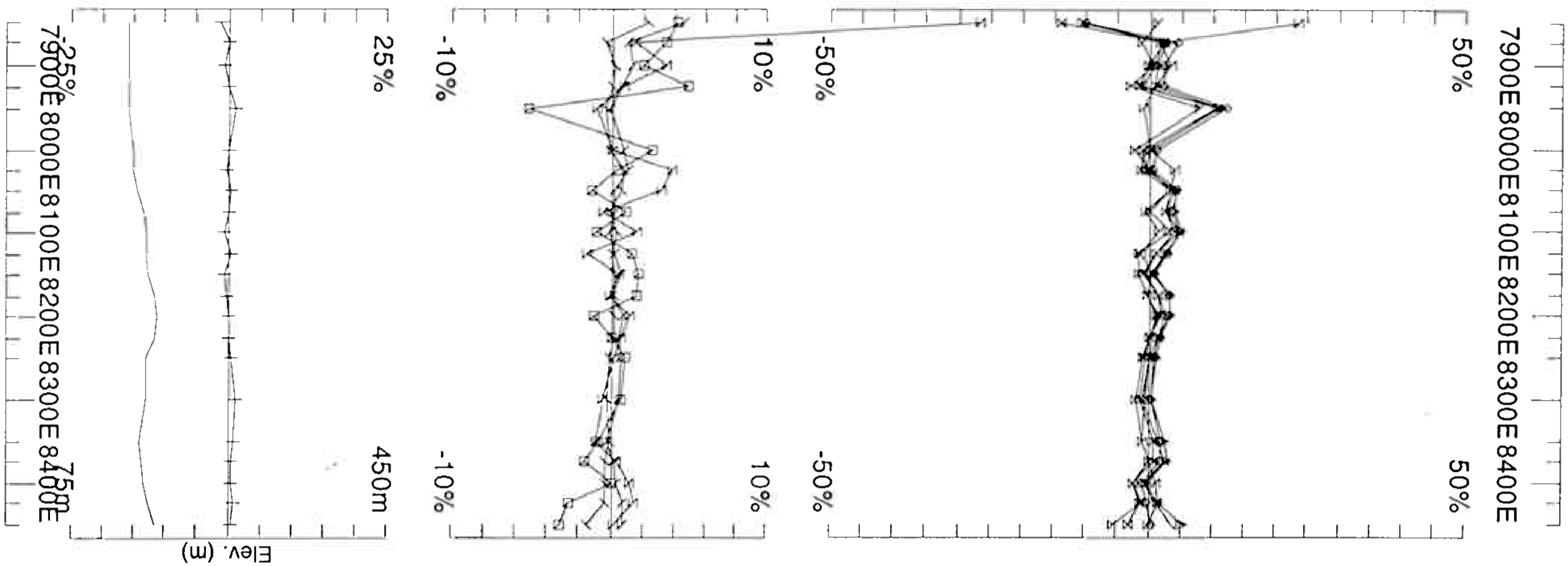
Loop: 02 Line: 9000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



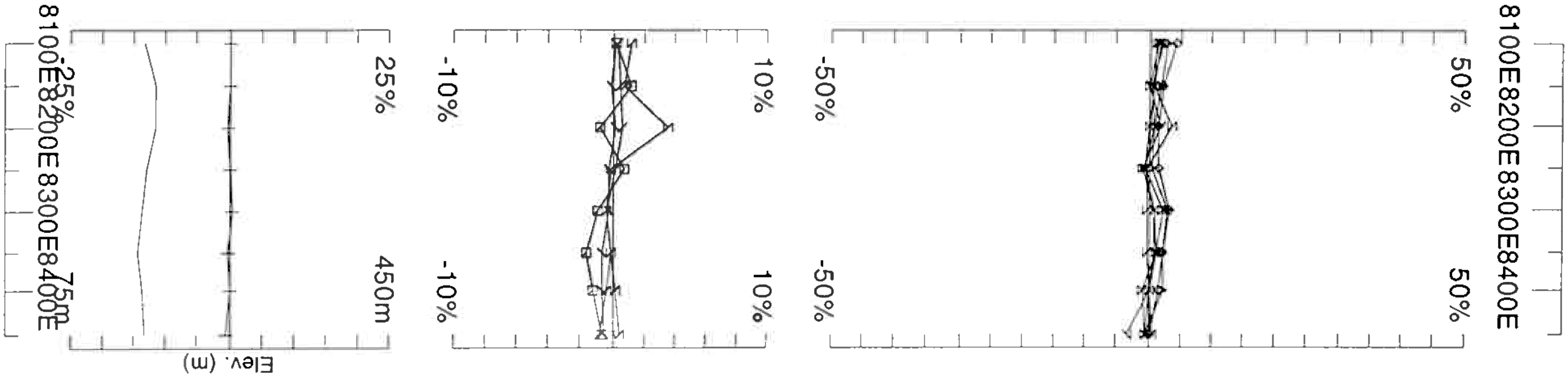
Loop: 02 Line: 9100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



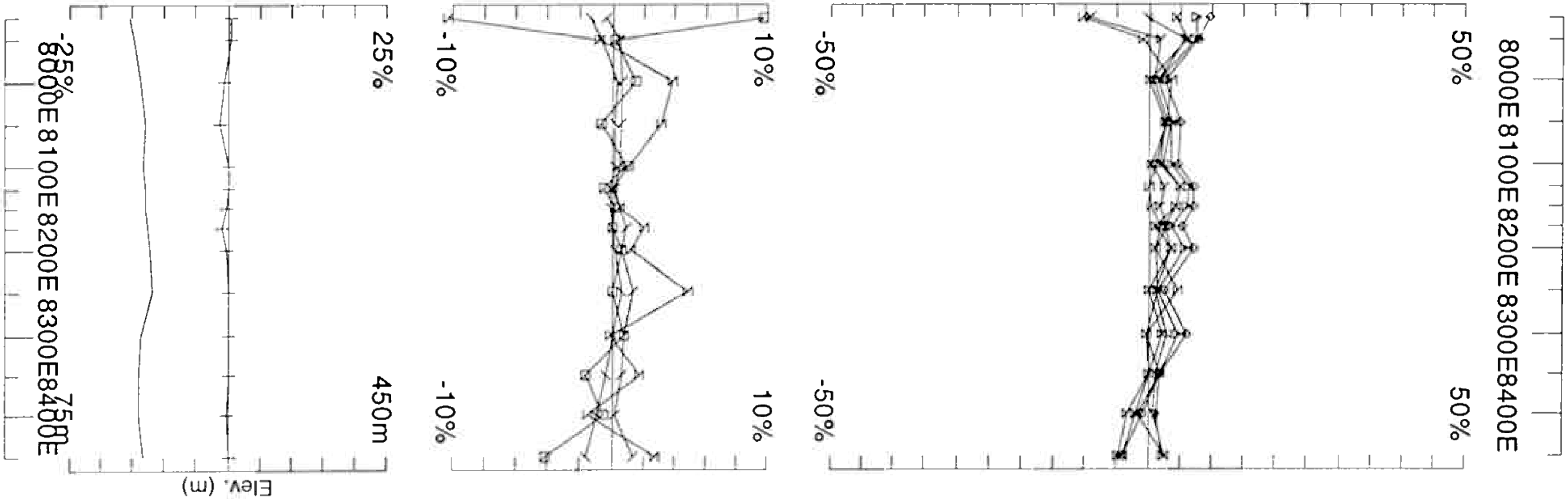
Loop: 02 Line: 9200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



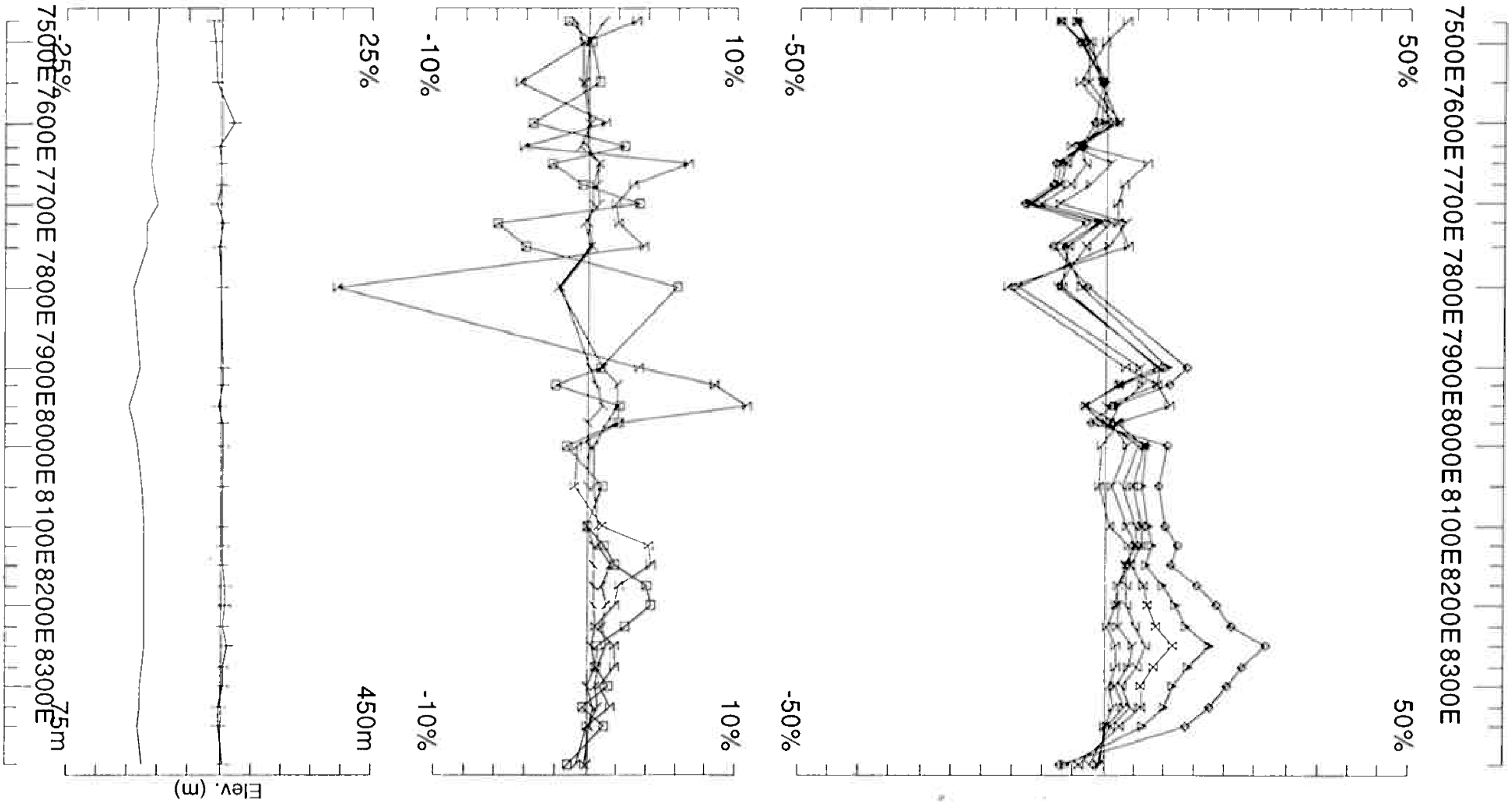
Loop: 02 Line: 9300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02 Line: 9400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02 Line: 9500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02
Line: 9600N
Compt: Hz

Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(8000,9400,200)
Base Freq. 3.251 Hz

UTEM Survey at: Ertelien Mine Grid
For: A/S Sulfidmalm

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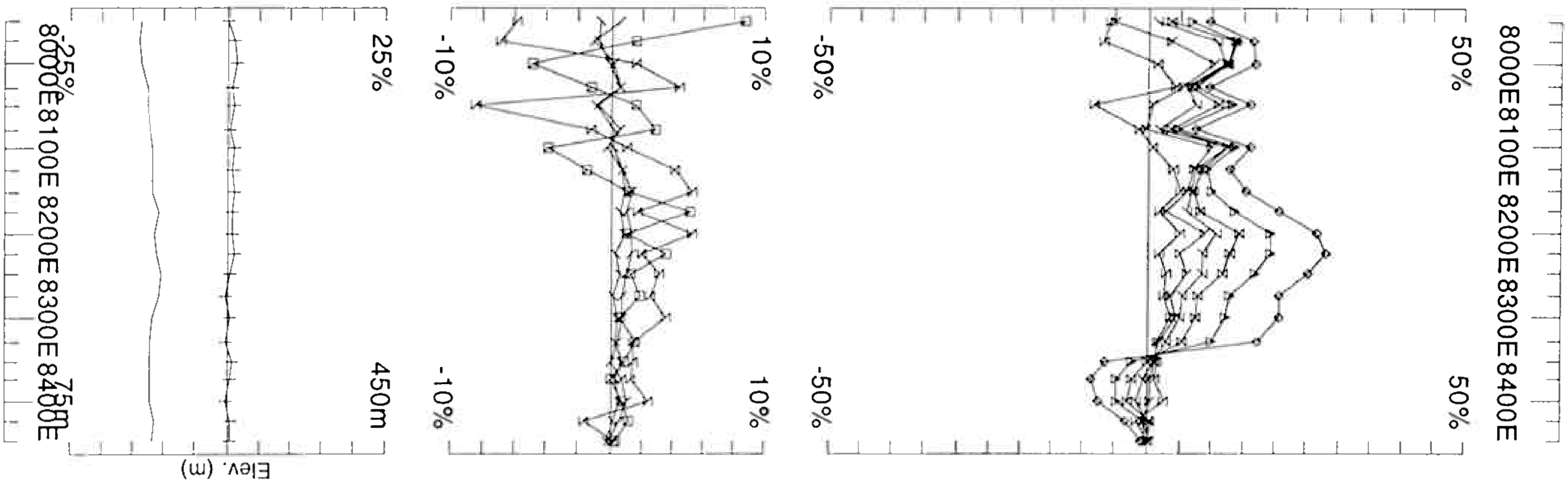
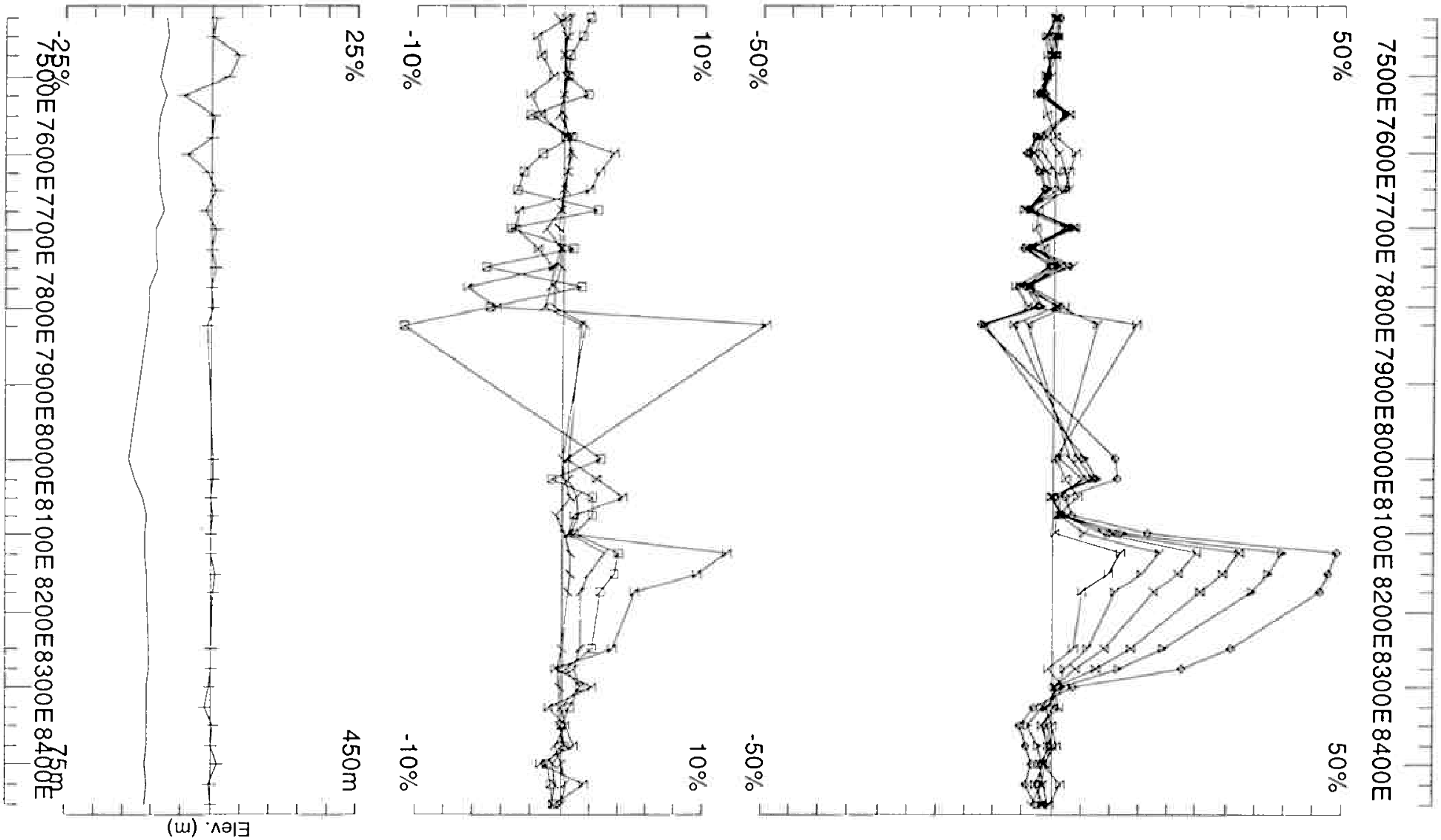
GEOPHYSIQUE LTEE

Job
0612

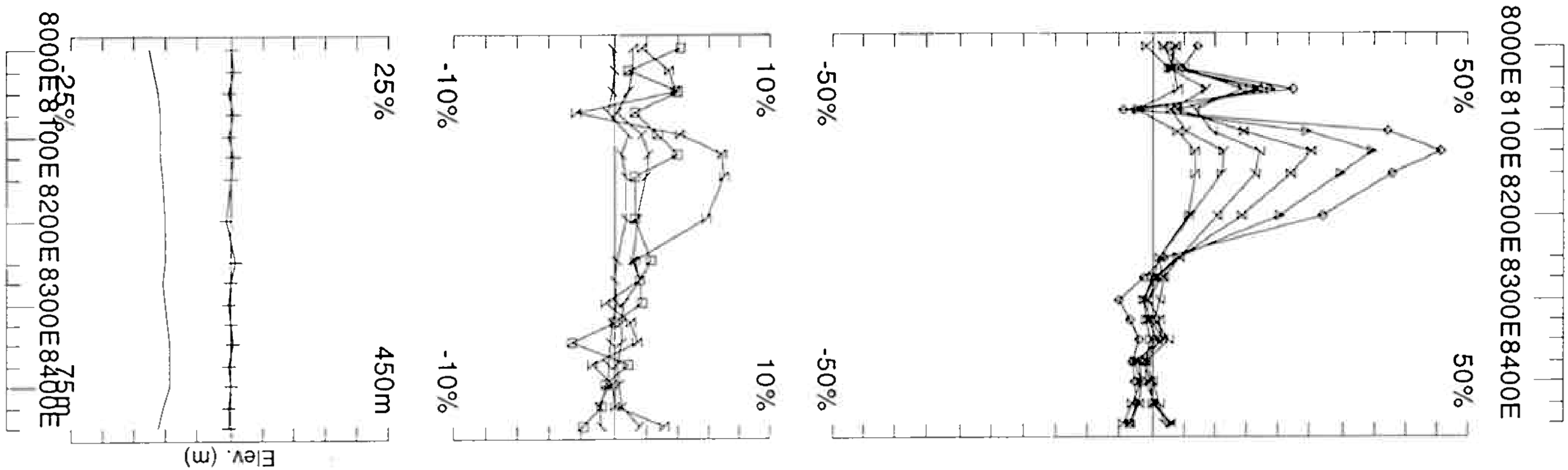
Surveyed : 29/3/6
Reduced : 29/3/6
Plotted : 13/6/6



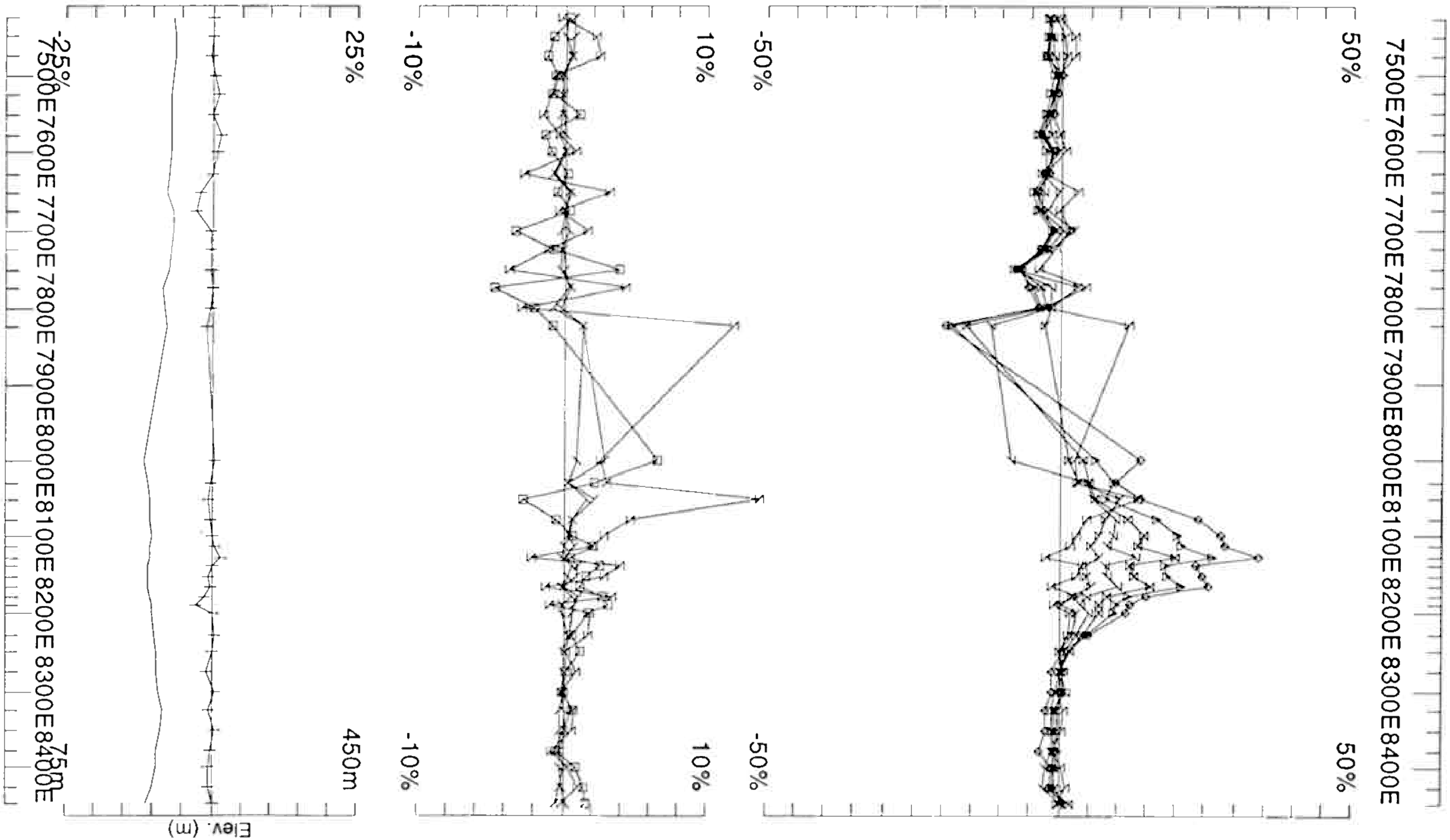
Loop: 02 Line: 9650N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 29/5/6 Plotted : 13/6/6



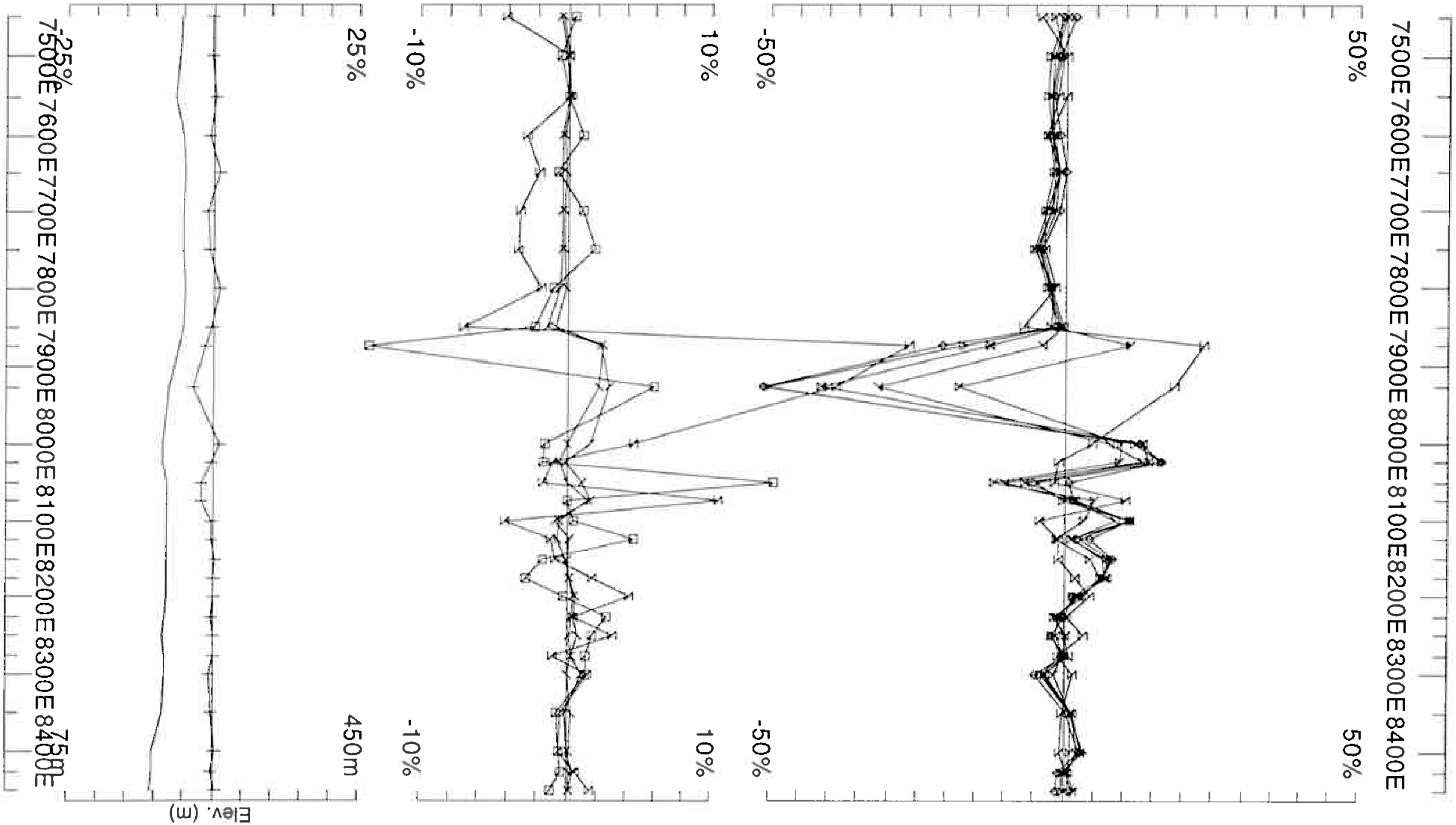
Loop: 02 Line: 9700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 29/3/6 Reduced : 26/5/6 Plotted : 13/6/6



Loop: 02 Line: 9750N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 02 Line: 9800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (8000,9400,200) Base Freq. 3.251 Hz	UTEM Survey at: Ertelien Mine Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 28/3/6 Reduced : 29/3/6 Plotted : 13/6/6



Loop: 02
Line: 9900N
Compt: Hz

Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(8000,9400,200)
Base Freq. 3.251 Hz

UTEM Survey at: Ertelien Mine Grid
For: A/S Sulfidmalm

LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

Surveyed : 28/3/6
Reduced : 29/5/6
Plotted : 13/6/6

Ulleren Grid

Loop 03

Hz
@3.251 Hz frequency

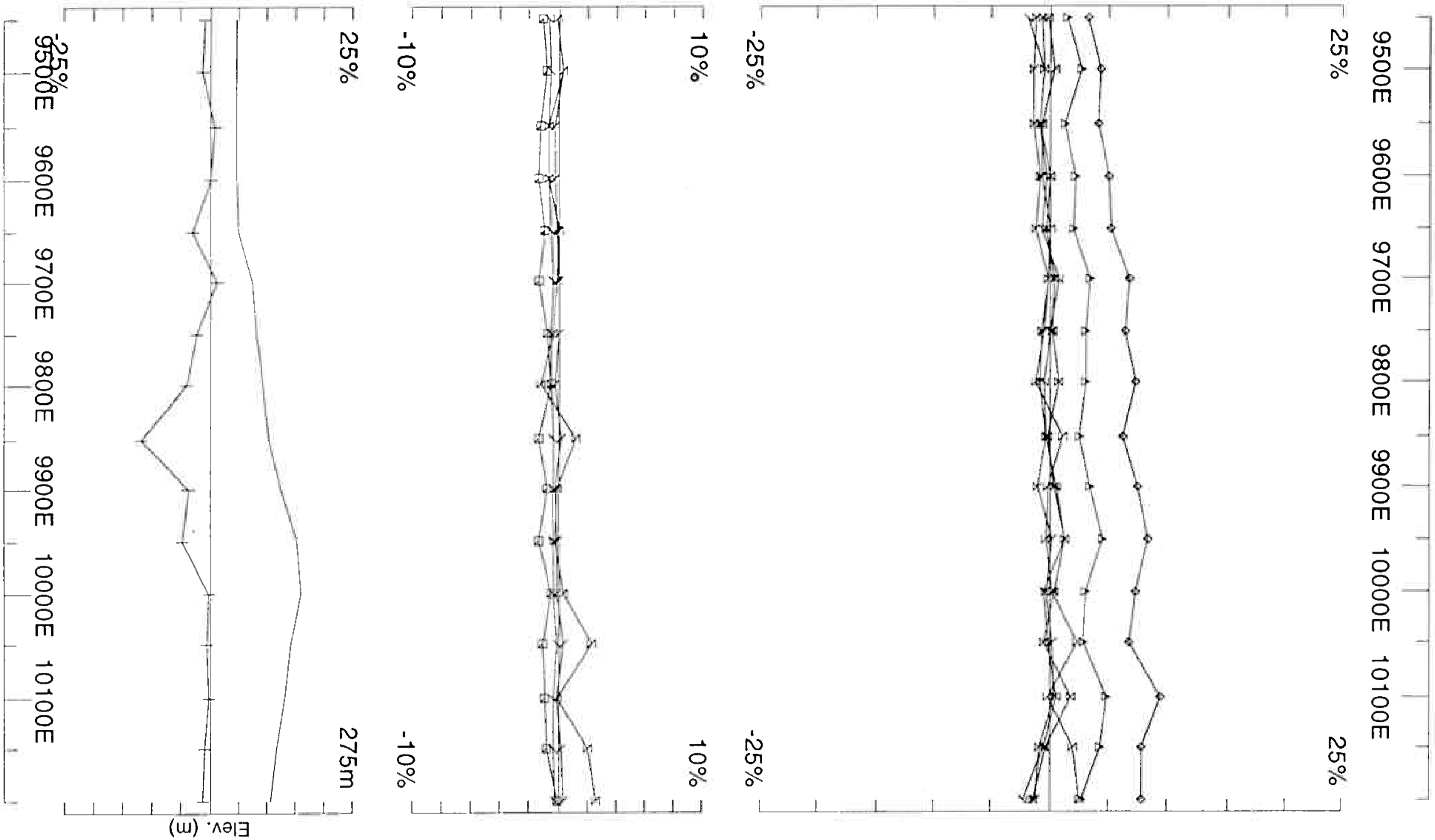
point norm
@ ~ centre of the loop
(x,y,z) = (1825E,5050N, 410 m.a.s.l.)

Ch1 reduced

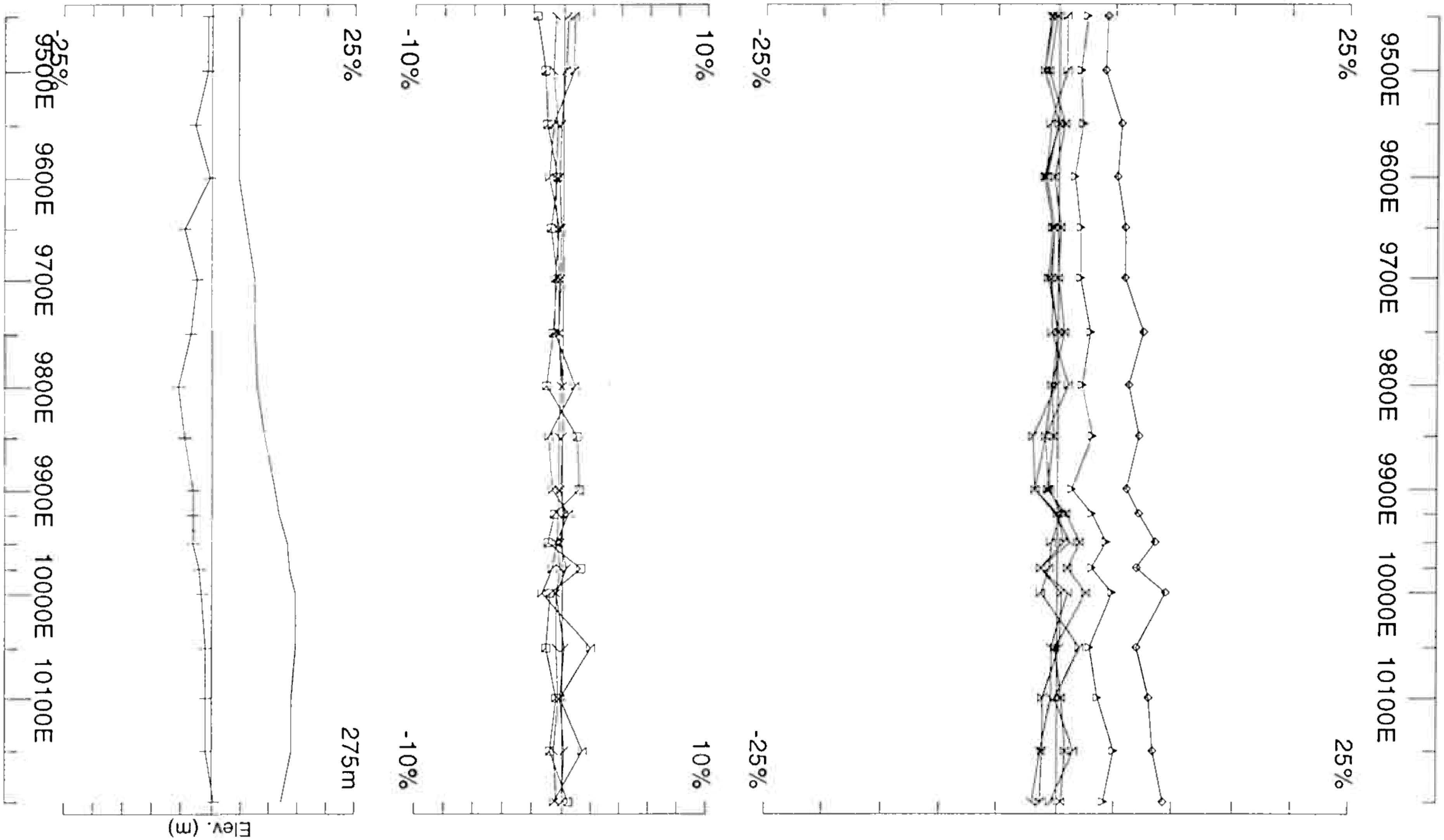
Loop 03 Ulleren	Line 5000N	9450E - 10200E	750m	1:5500
	Line 5100N	9450E - 10200E	750m	1:5500
	Line 5200N	9450E - 10200E	750m	1:5500
	Line 5300N	9450E - 10200E	750m	1:5500
	Line 5400N	9450E - 10200E	750m	1:5500
	Line 5500N	9450E - 10225E	775m	1:5500
	Line 5600N	9450E - 10200E	750m	1:5500
	Line 5700N	9450E - 10200E	750m	1:5500
	Line 5800N	9450E - 10200E	750m	1:5500
	Line 5900N	9450E - 10225E	775m	1:5500
	Line 6000N	9450E - 10225E	775m	1:5500
	Line 6050N	9450E - 10225E	775m	1:5500
	Line 6100N	9450E - 10225E	775m	1:5500
	Line 6200N	9450E - 10225E	775m	1:5500
	Line 6300N	9450E - 10200E	750m	1:5500

Ulleren Loop 03 Total 11400m

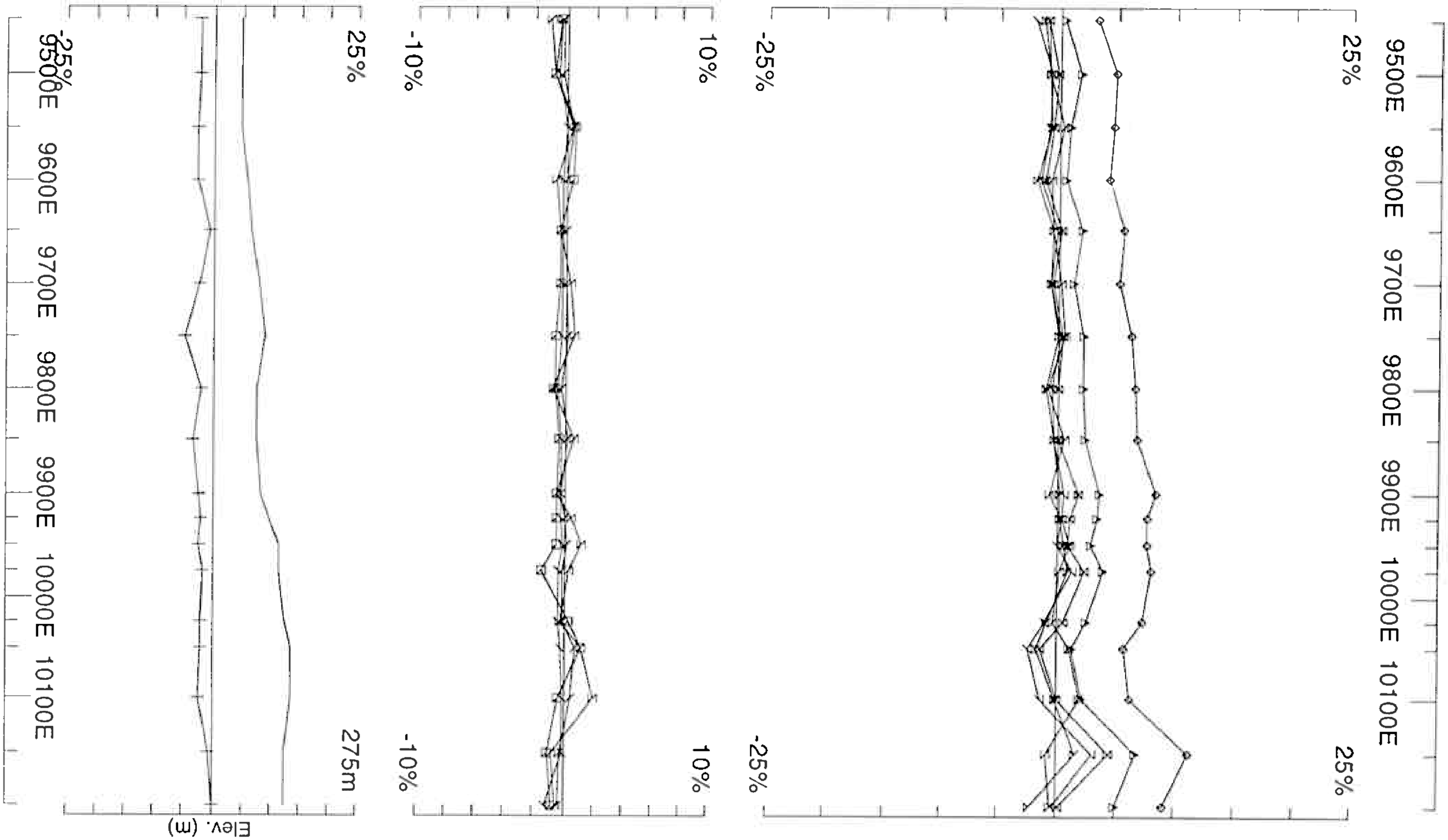
Loop 03 - point norm



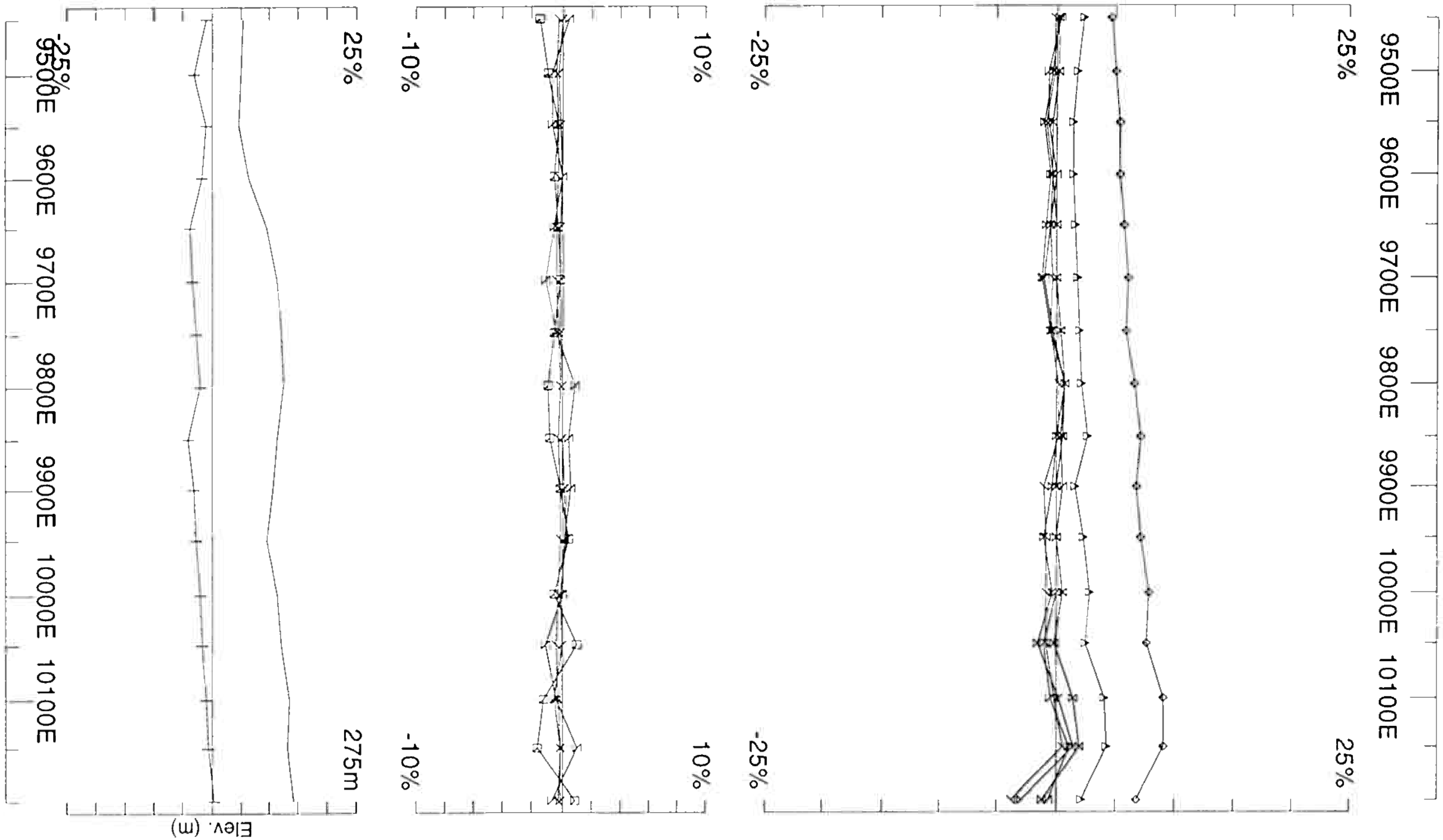
Loop: 03 Line: 5000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



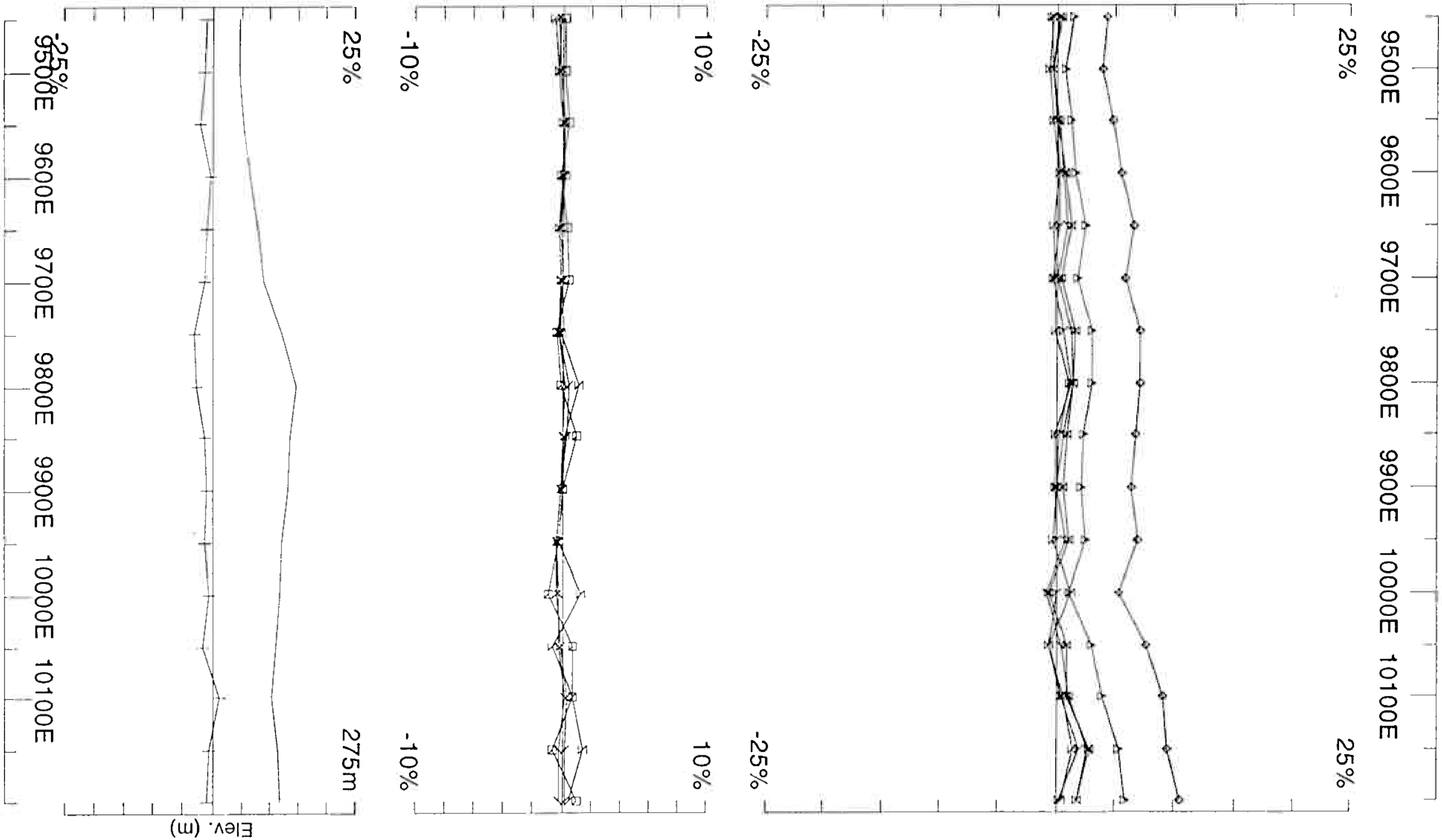
Loop: 03 Line: 5100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



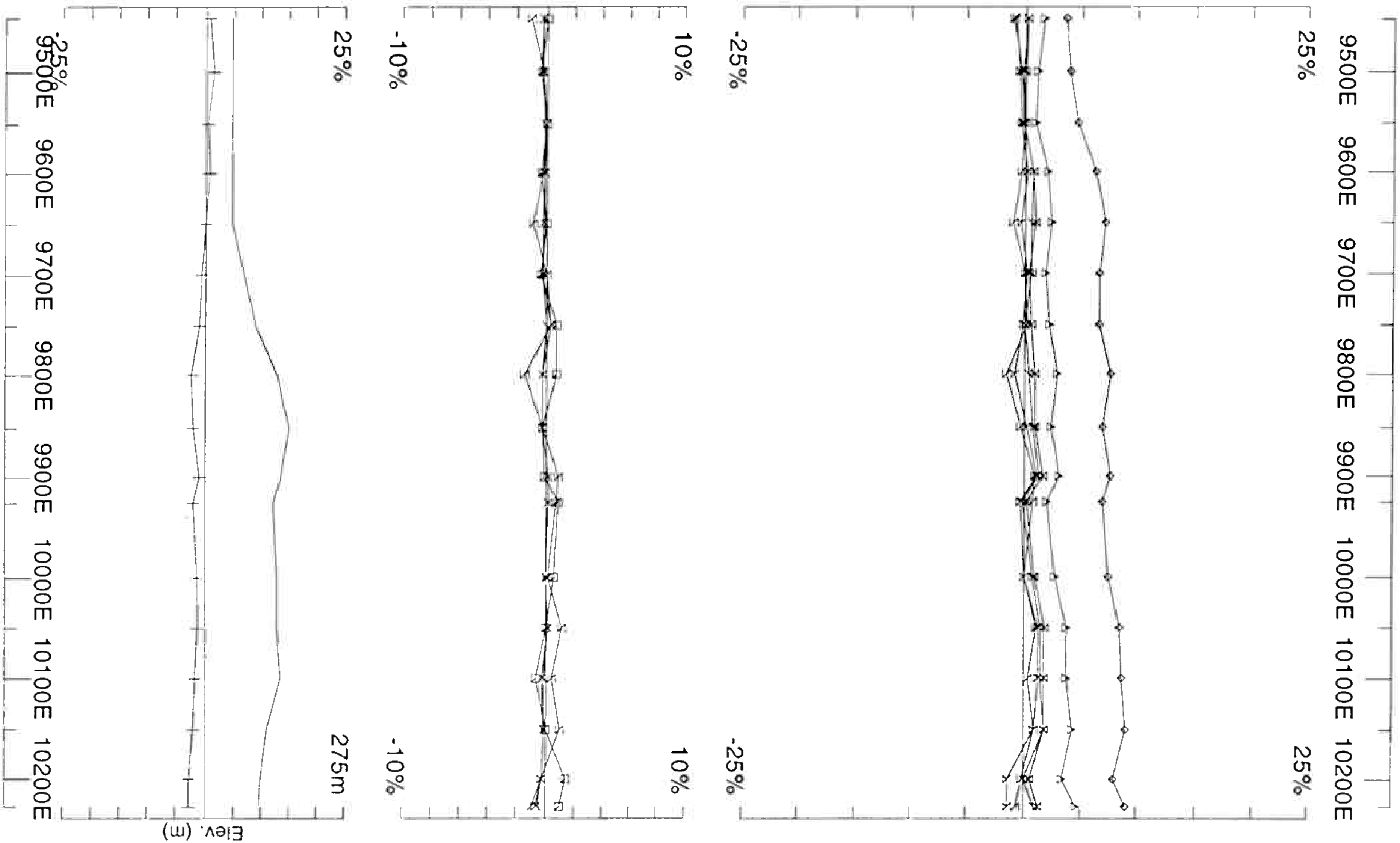
Loop: 03 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



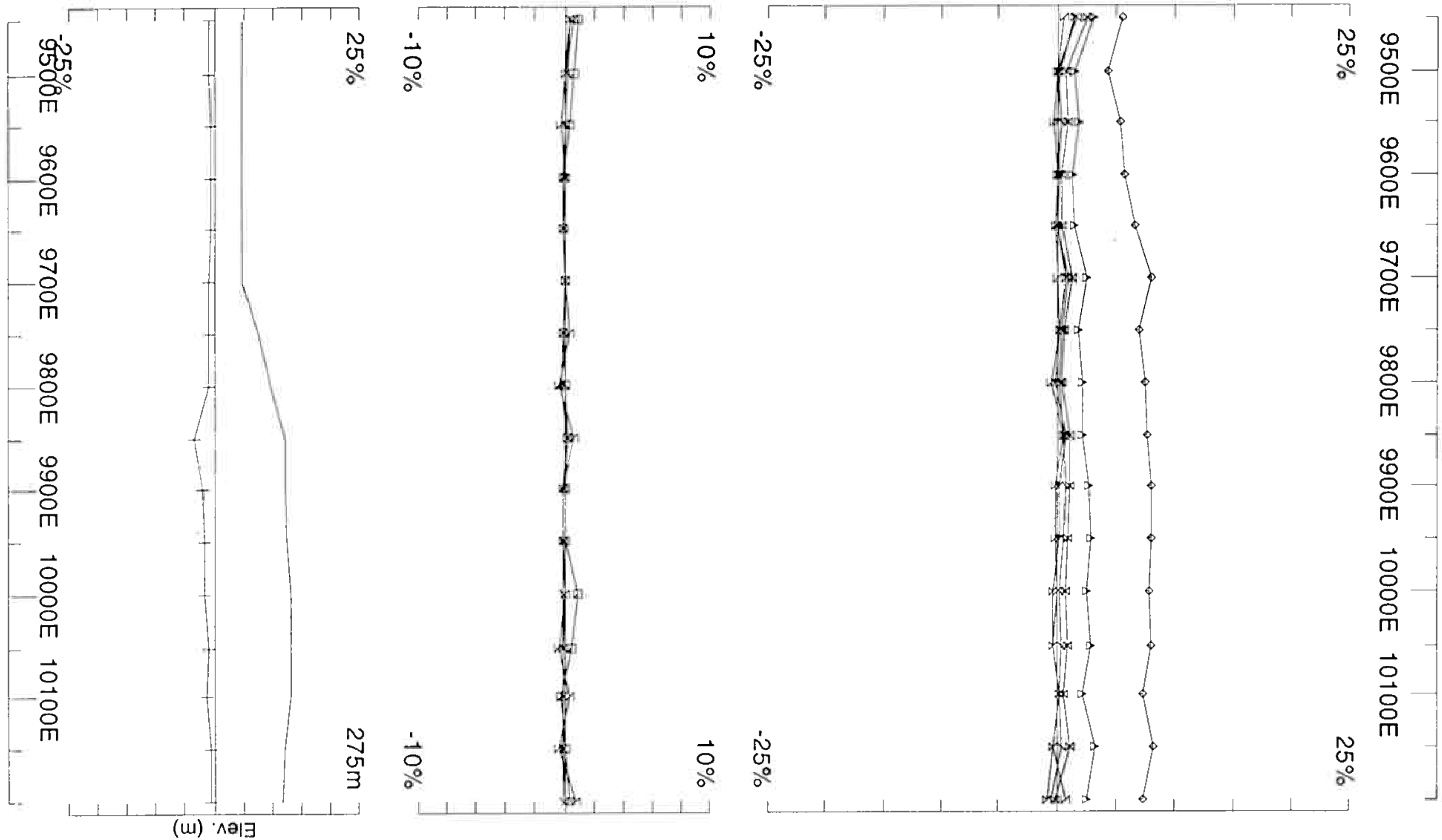
Loop: 03 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



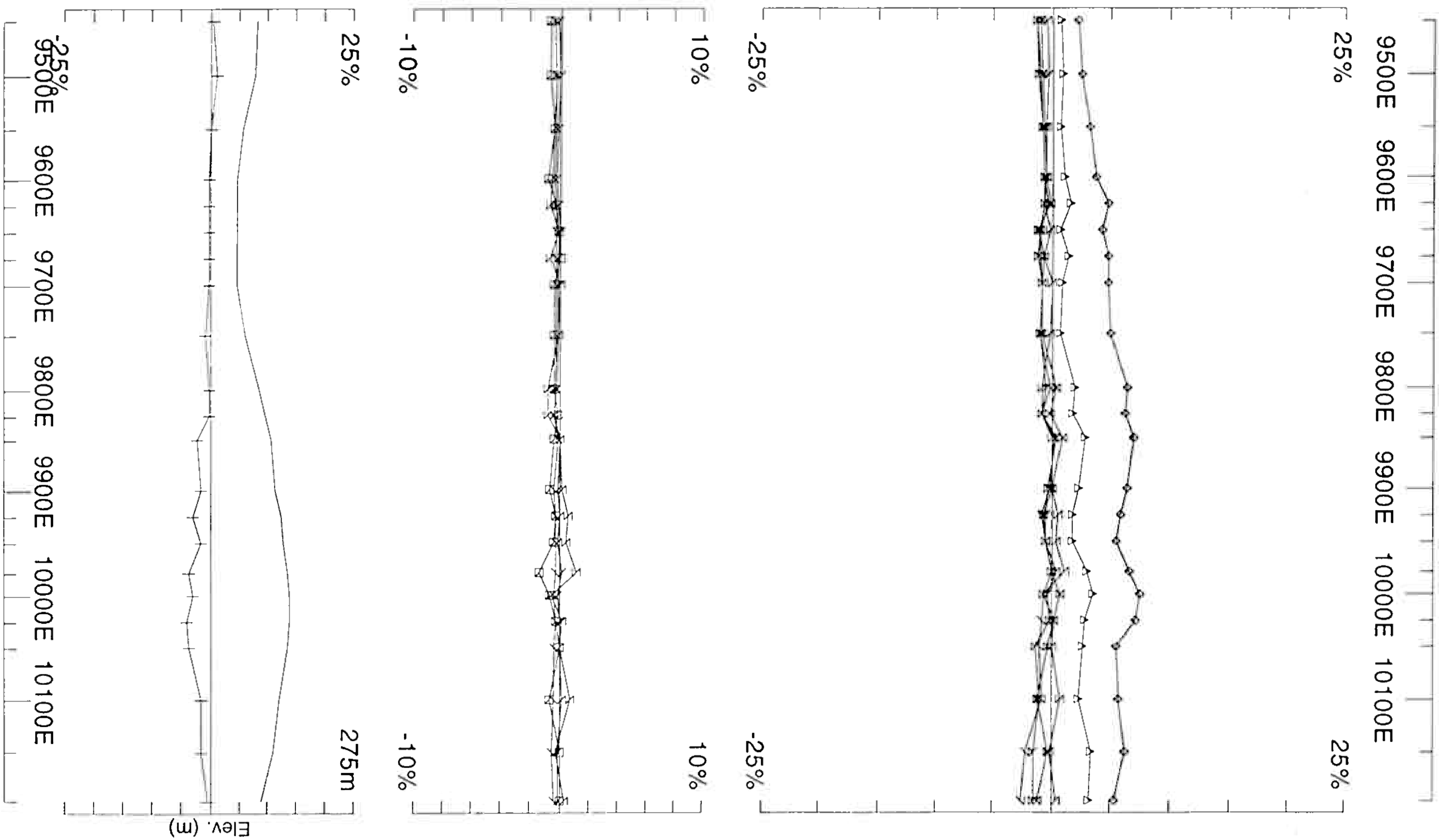
Loop: 03 Line: 5400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



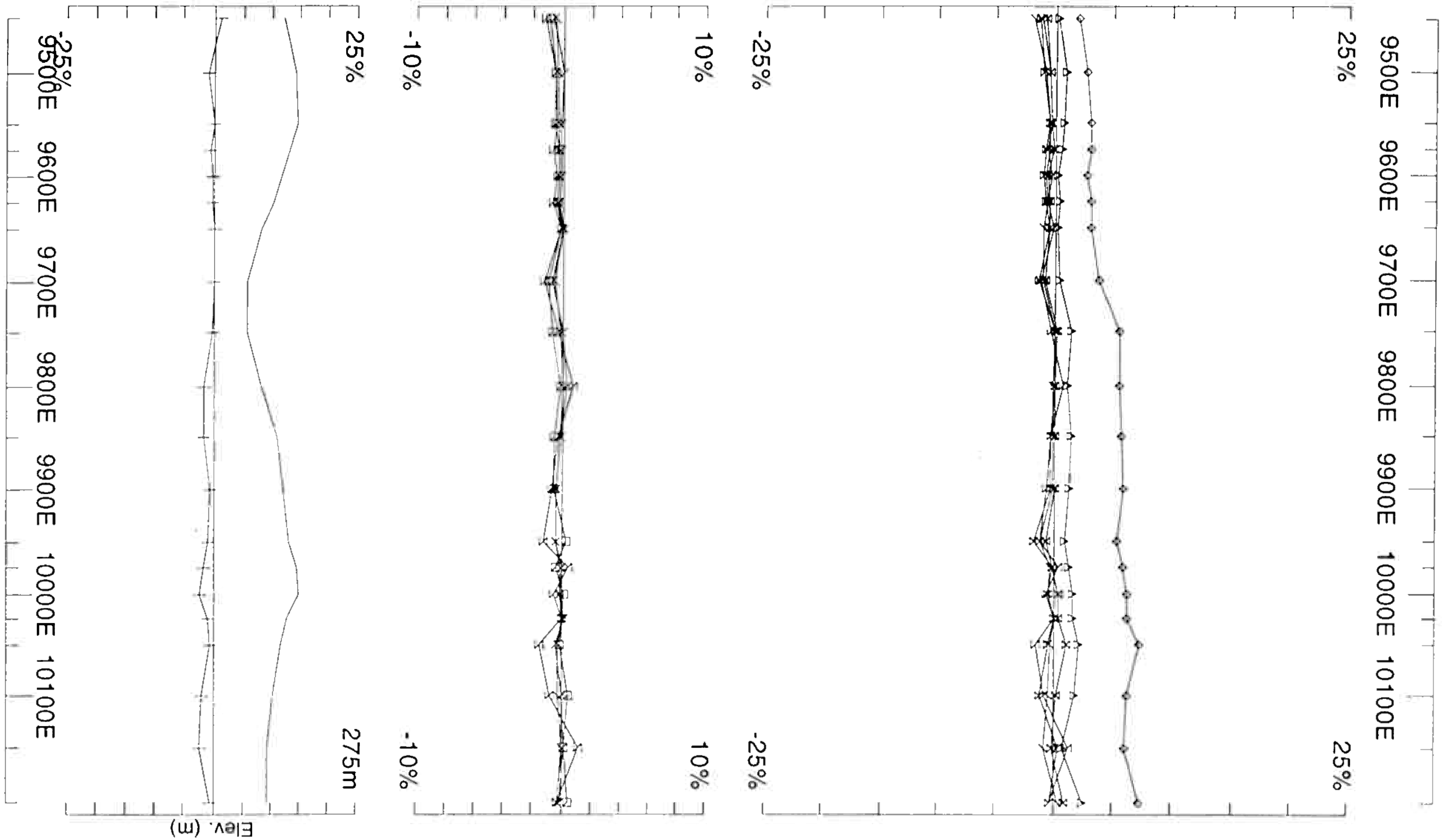
Loop: 03 Line: 5500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



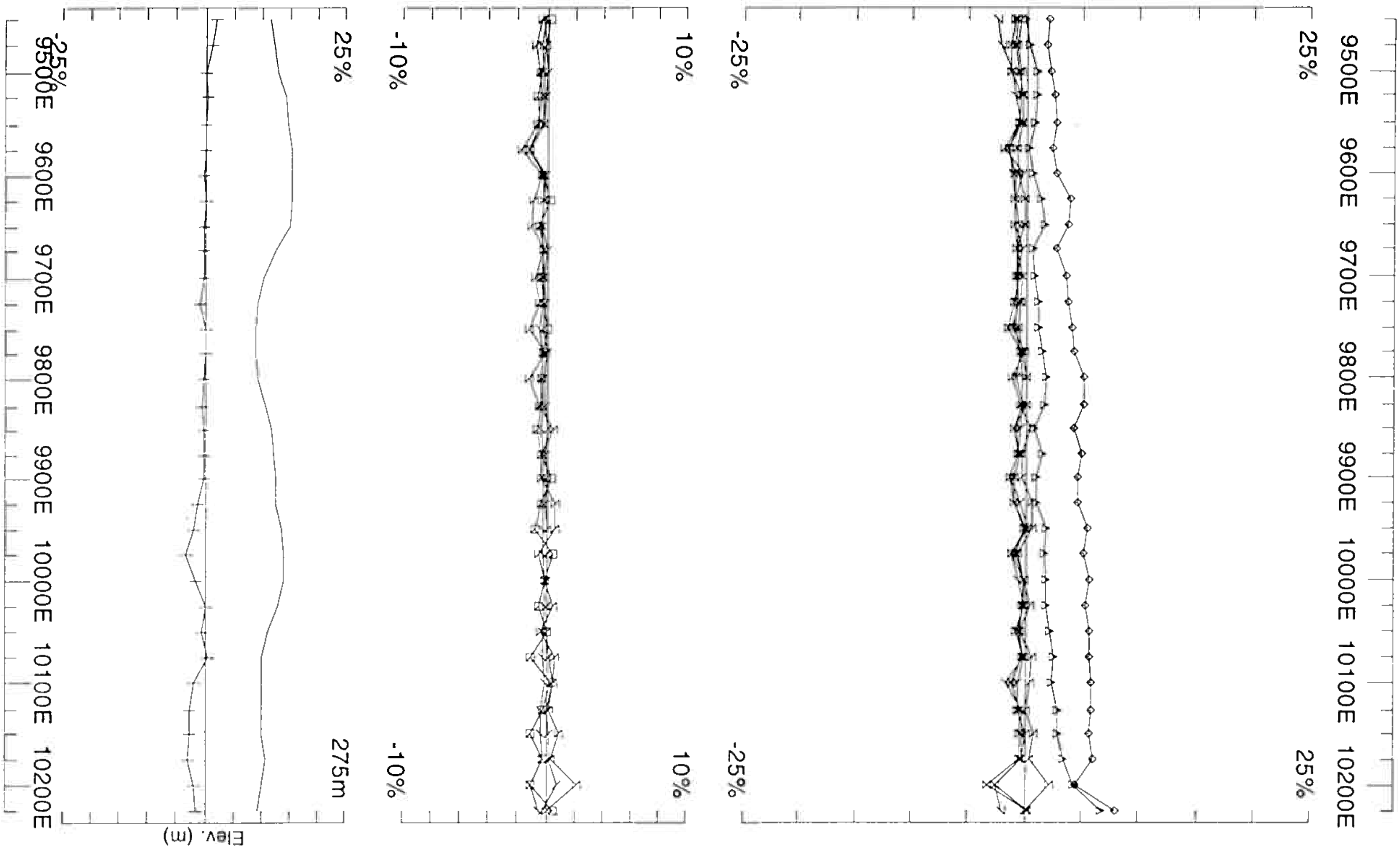
Loop: 03 Line: 5600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 27/3/6 Reduced : 29/5/6 Plotted : 13/6/6



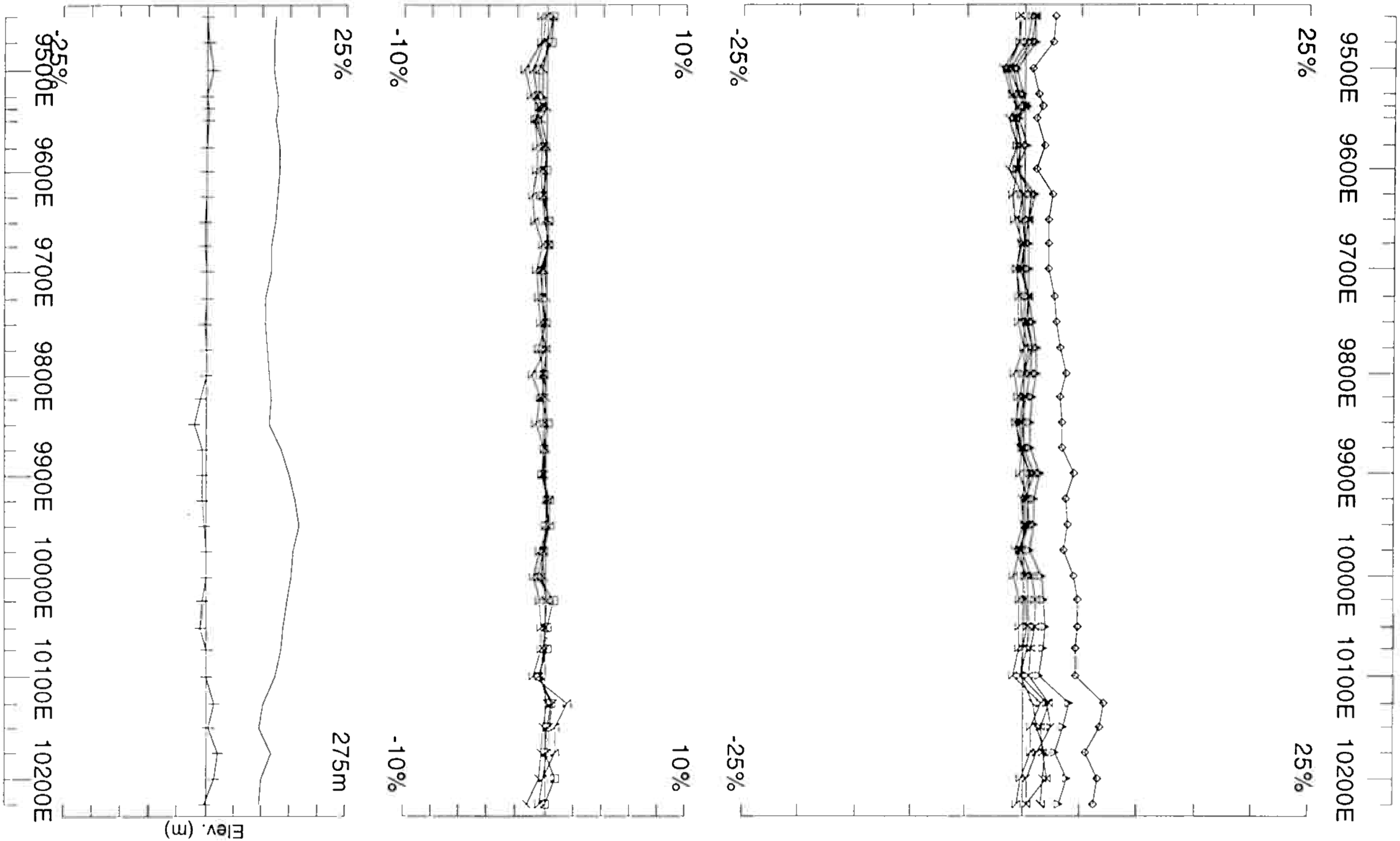
Loop: 03 Line: 5700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



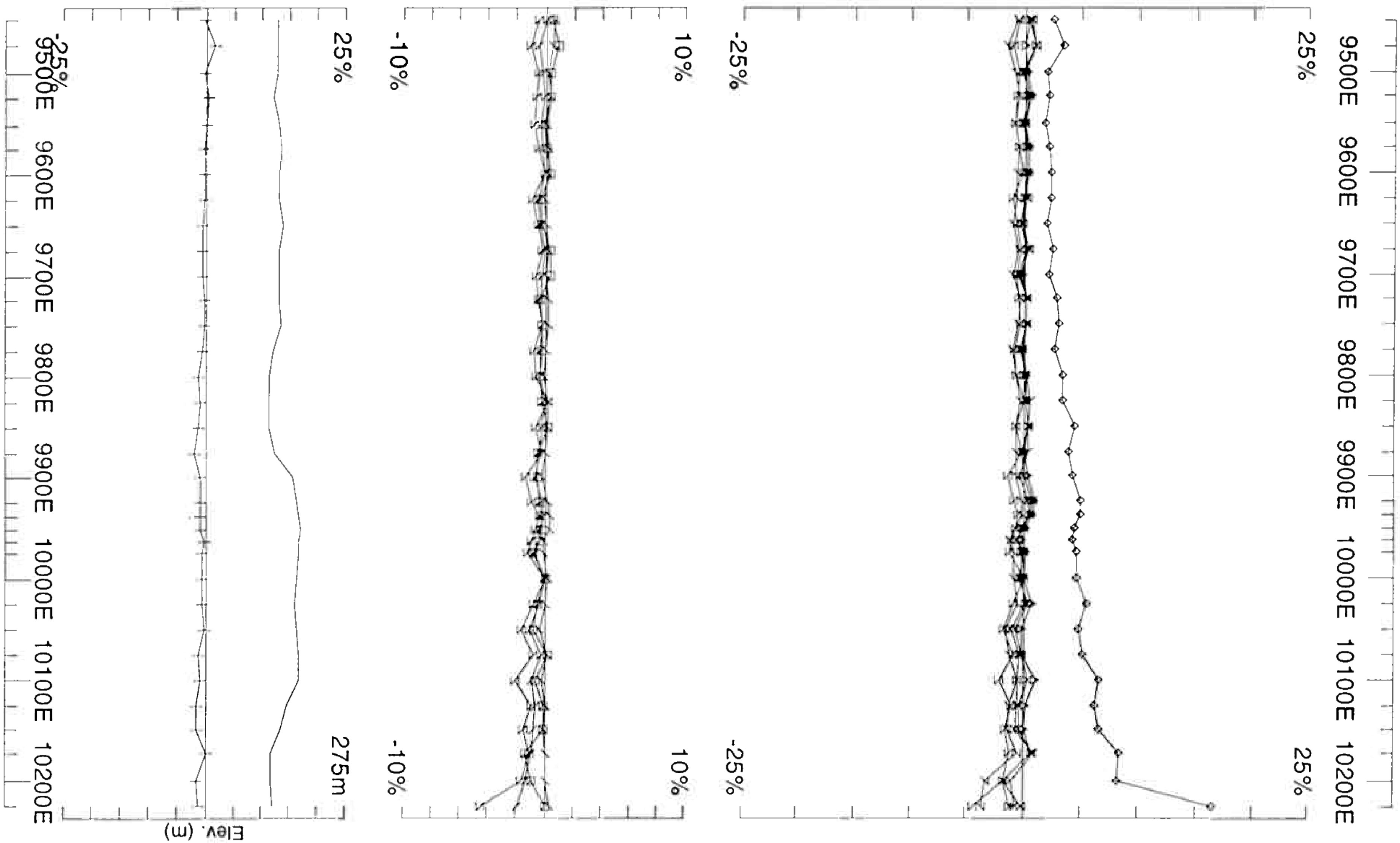
Loop: 03 Line: 5800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



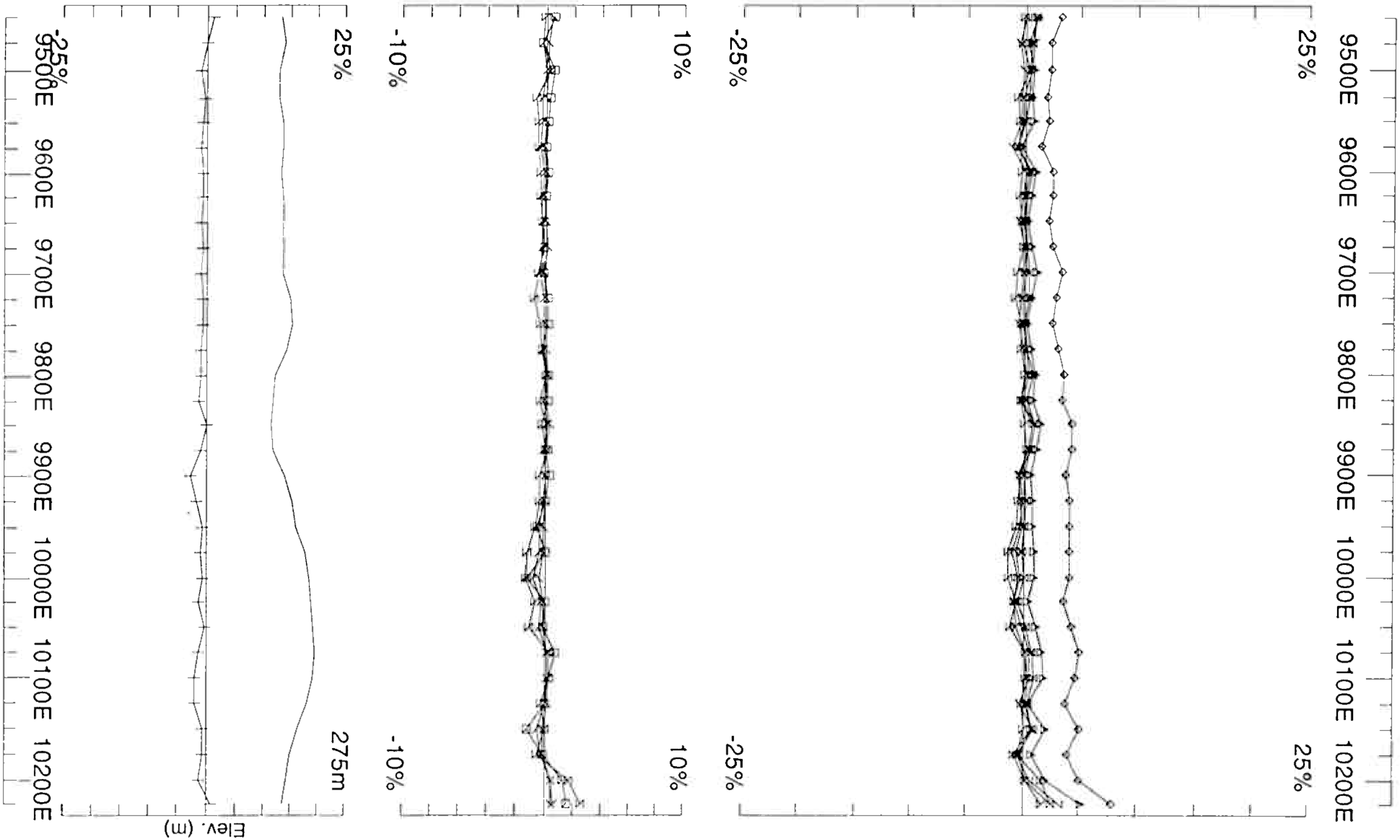
Loop: 03 Line: 5900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



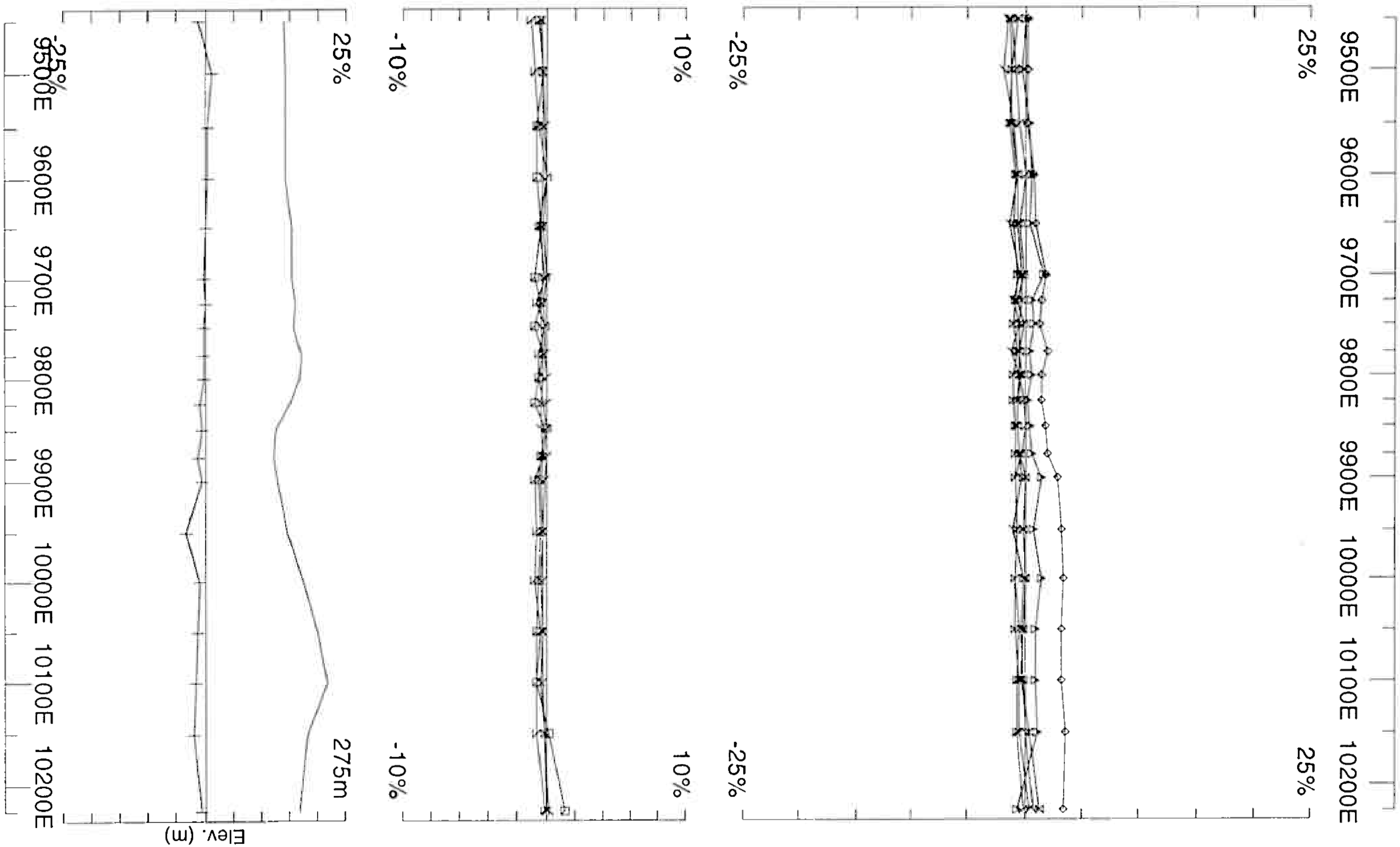
Loop: 03 Line: 6000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



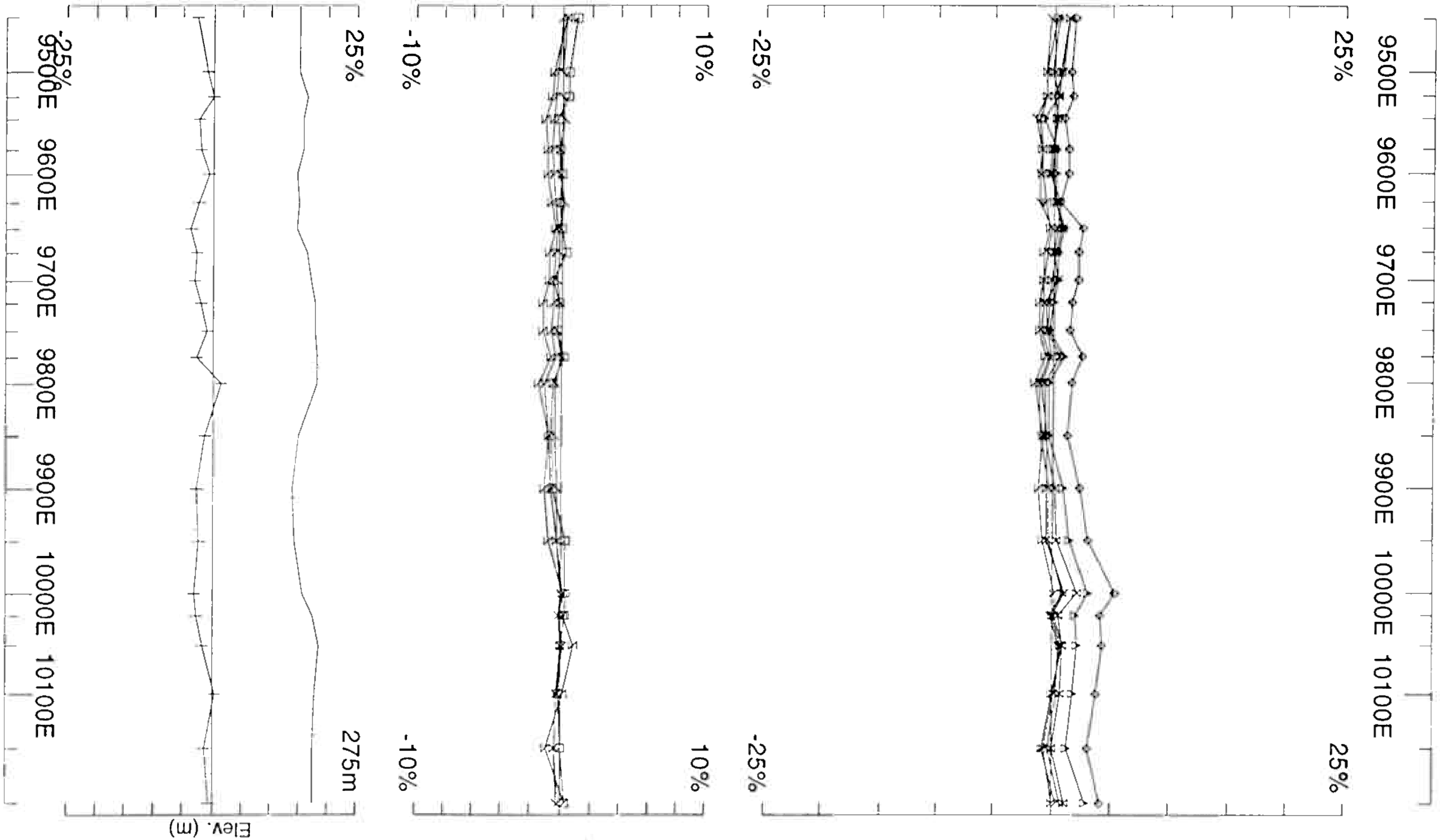
Loop: 03 Line: 6050N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03 Line: 6100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 26/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03 Line: 6200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 25/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 03 Line: 6300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (9800,5650,210) Base Freq. 3.251 Hz	UTEM Survey at: Ulleren Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 25/3/6 Reduced : 29/5/6 Plotted : 13/6/6

Langedalen Grid

Loop 05: Full Profiles

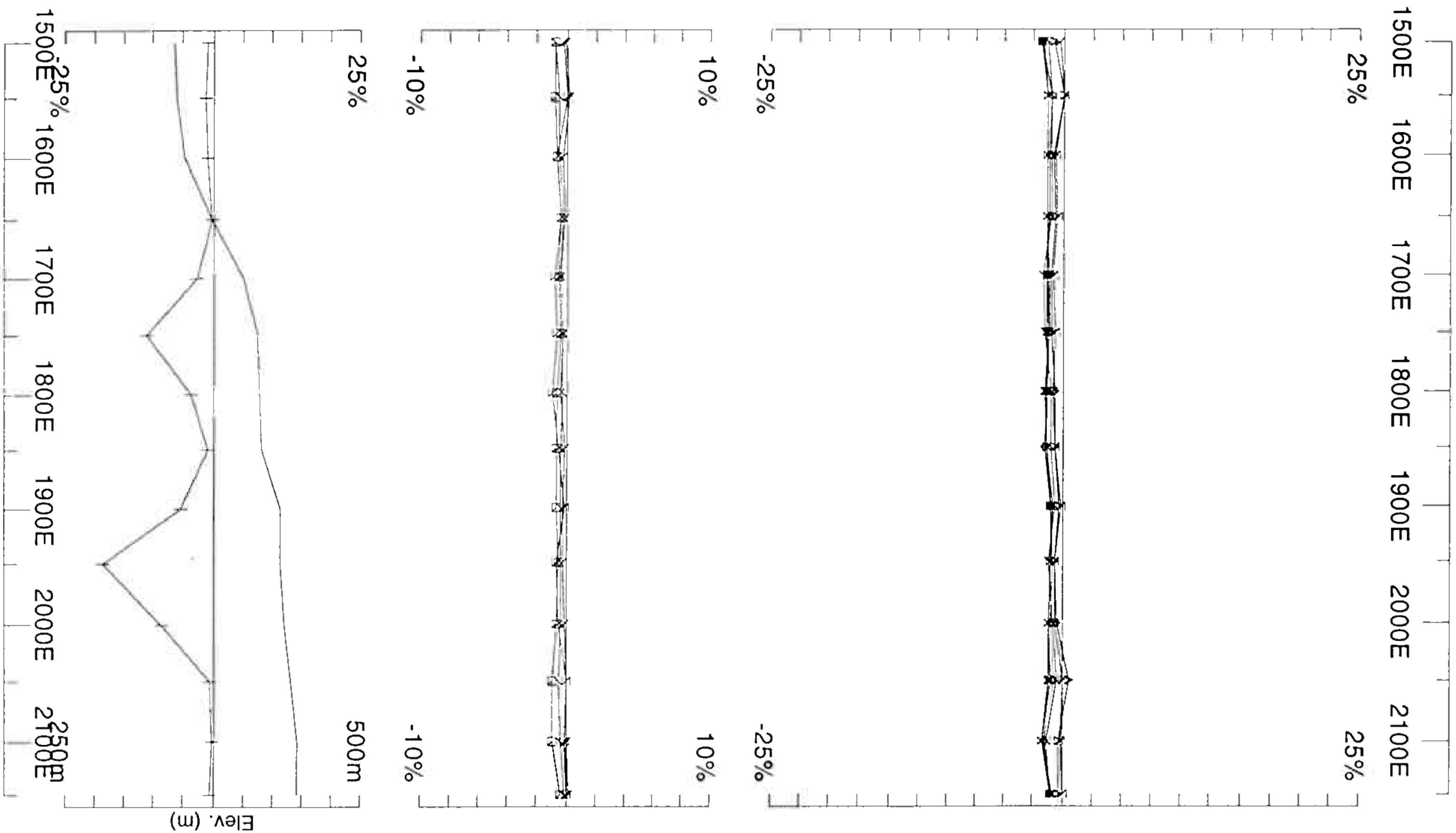
Hz
@3.251 Hz frequency

point norm
@ ~centre of the loop
(x,y,z) = (1825E,5050N, 410 m.a.s.l.)

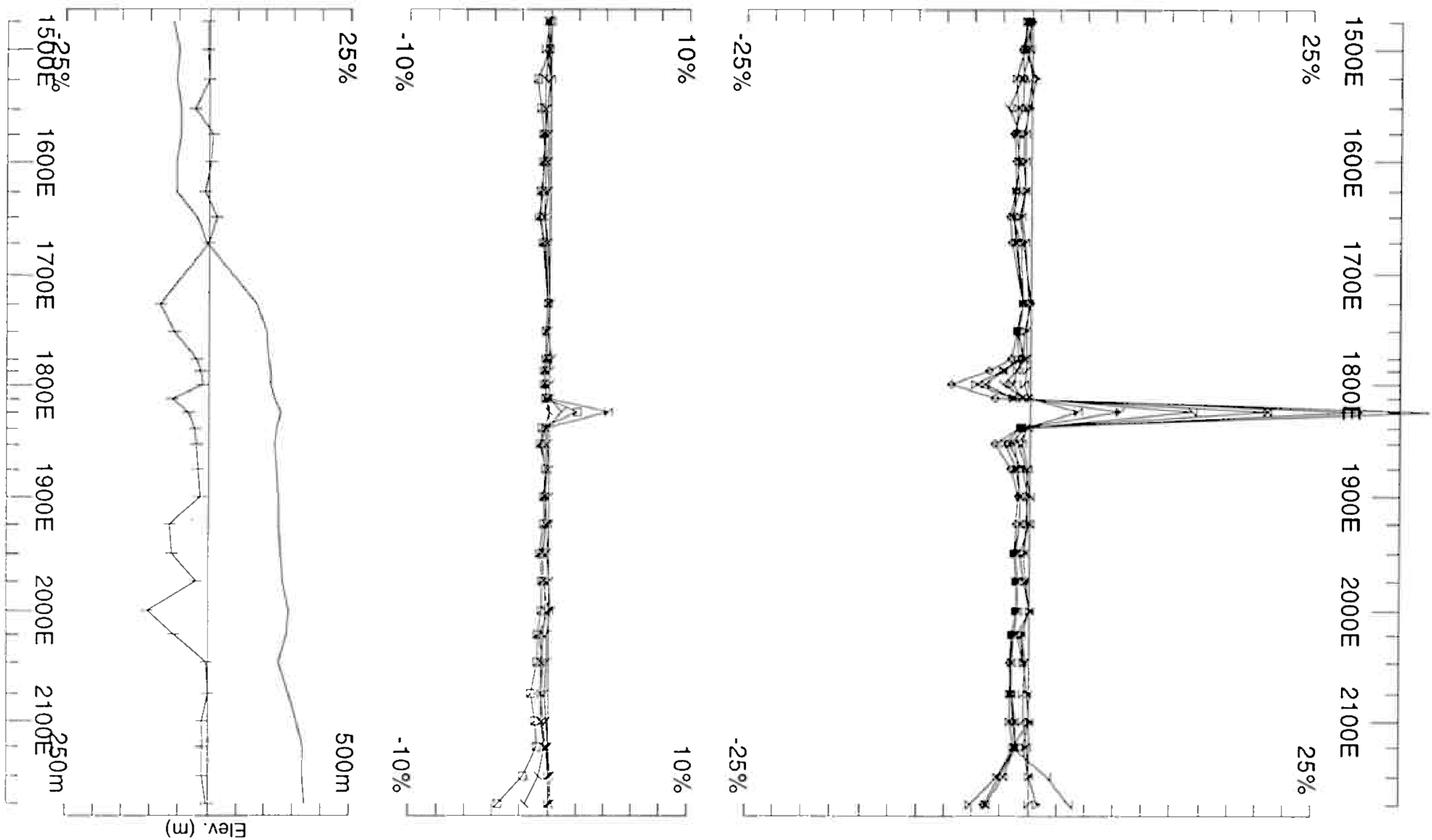
Ch1 reduced

Loop 05 Langedalen	Line 4600N	1500E - 2150E	650m	1:5000
	Line 4700N	1475E - 2175E	700m	1:5000
	Line 4750N	1650E - 2100E	450m	1:5000
	Line 4800N	1475E - 2175E	700m	1:5000
	Line 4900N	1475E - 2175E	700m	1:5000
	Line 5000N	1500E - 2175E	675m	1:5000
	Line 5100N	1475E - 2175E	700m	1:5000
	Line 5200N	1475E - 2175E	700m	1:10000
		2225E - 2800E	575m	
	Line 5250N	1475E - 2175E	700m	1:5000
	Line 5300N	1450E - 2175E	725m	1:10000
		2250E - 2800E	550m	
	Line 5400N	1475E - 2175E	700m	1:10000
		2225E - 2800E	575m	
	Line 5500N	1500E - 2175E	675m	1:5000
	Langedalen	Loop 05 Total	9775m	

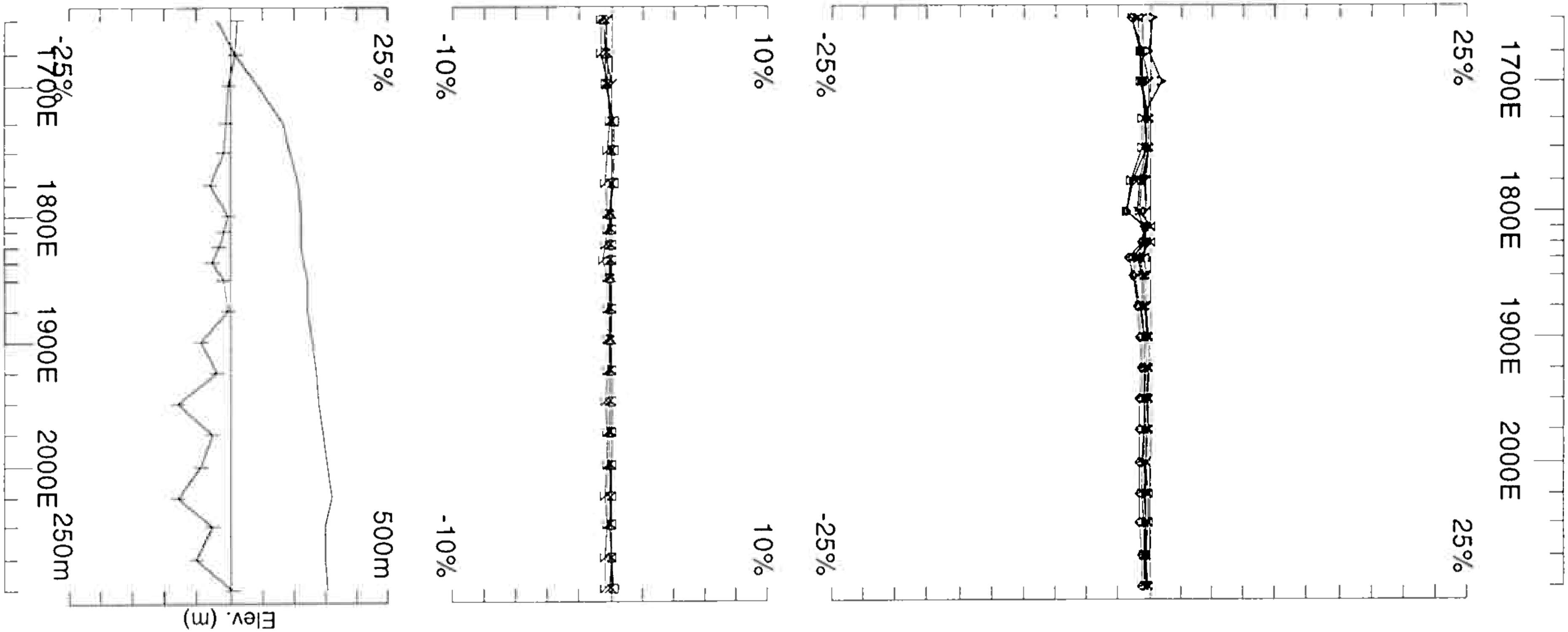
Loop 05 - point norm



Loop: 05 Line: 4600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05 Line: 4700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05
Line: 4750N
Compt: Hz

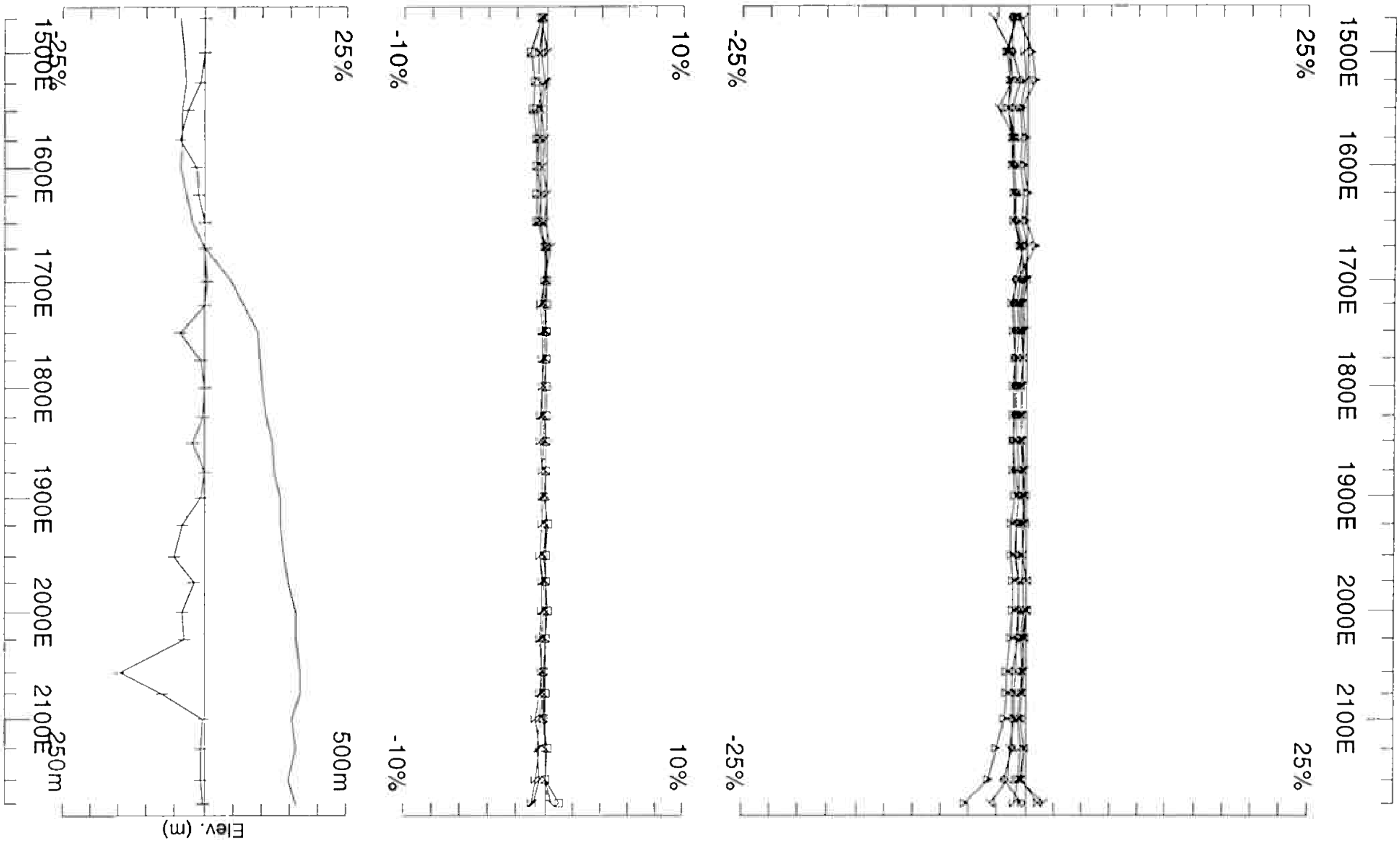
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(1825,5050,410)
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

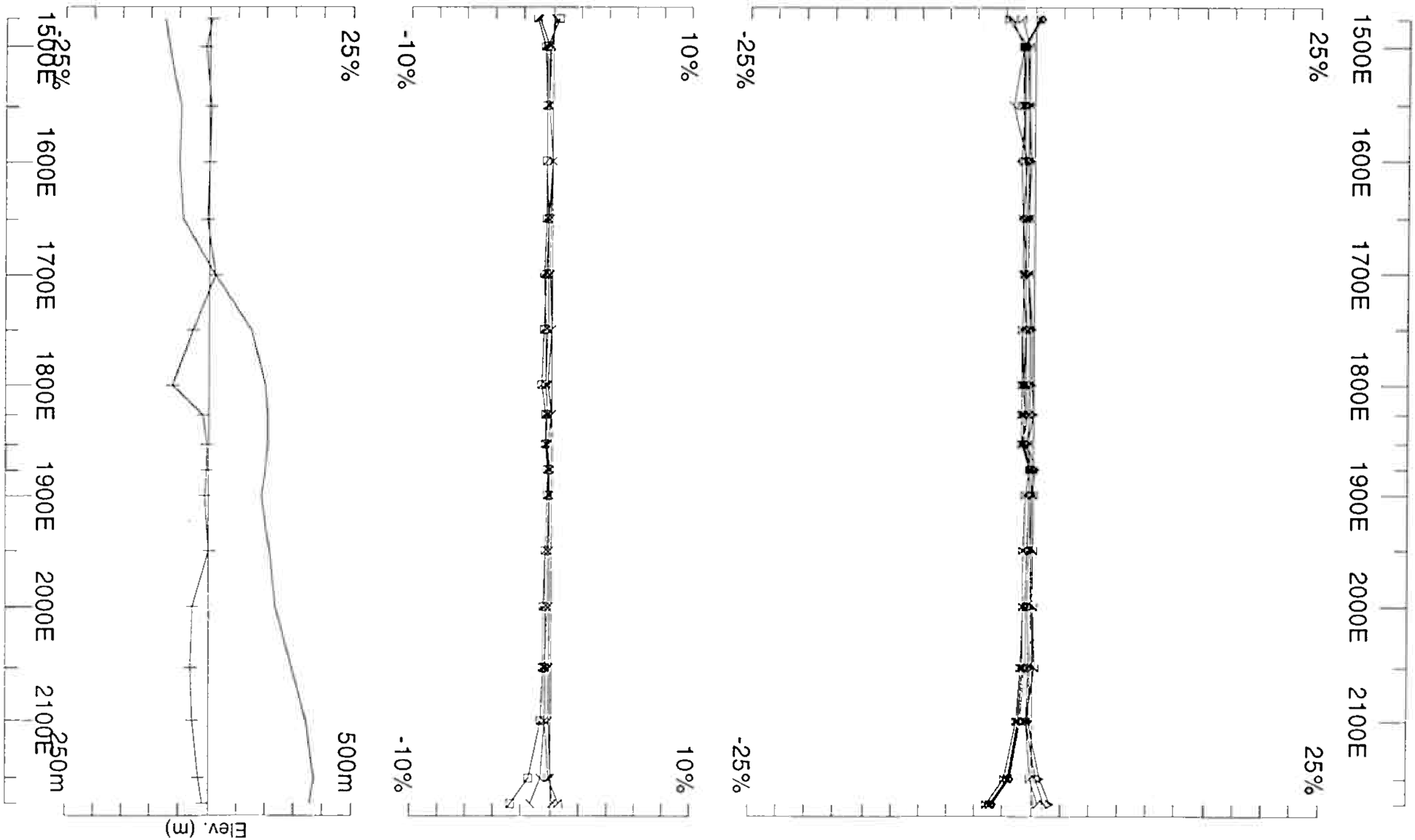
LAMONTAGNE GEOPHYSICS LTD
GEOPHYSIQUE LTEE

Job 0612

Plotted : 13/6/6



Loop: 05 Line: 4800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05
Line: 4900N
Compt: Hz

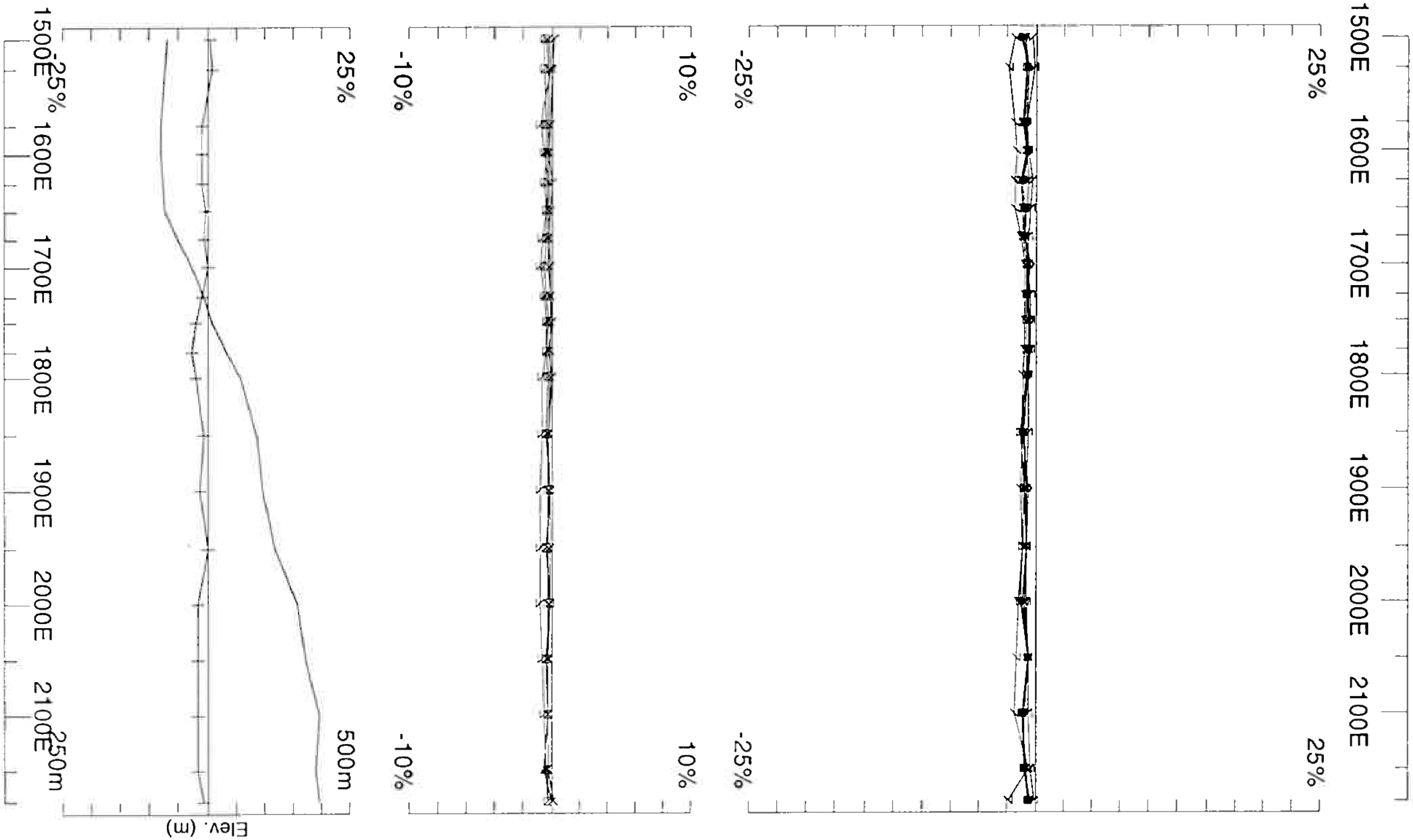
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(1825,5050,410)
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

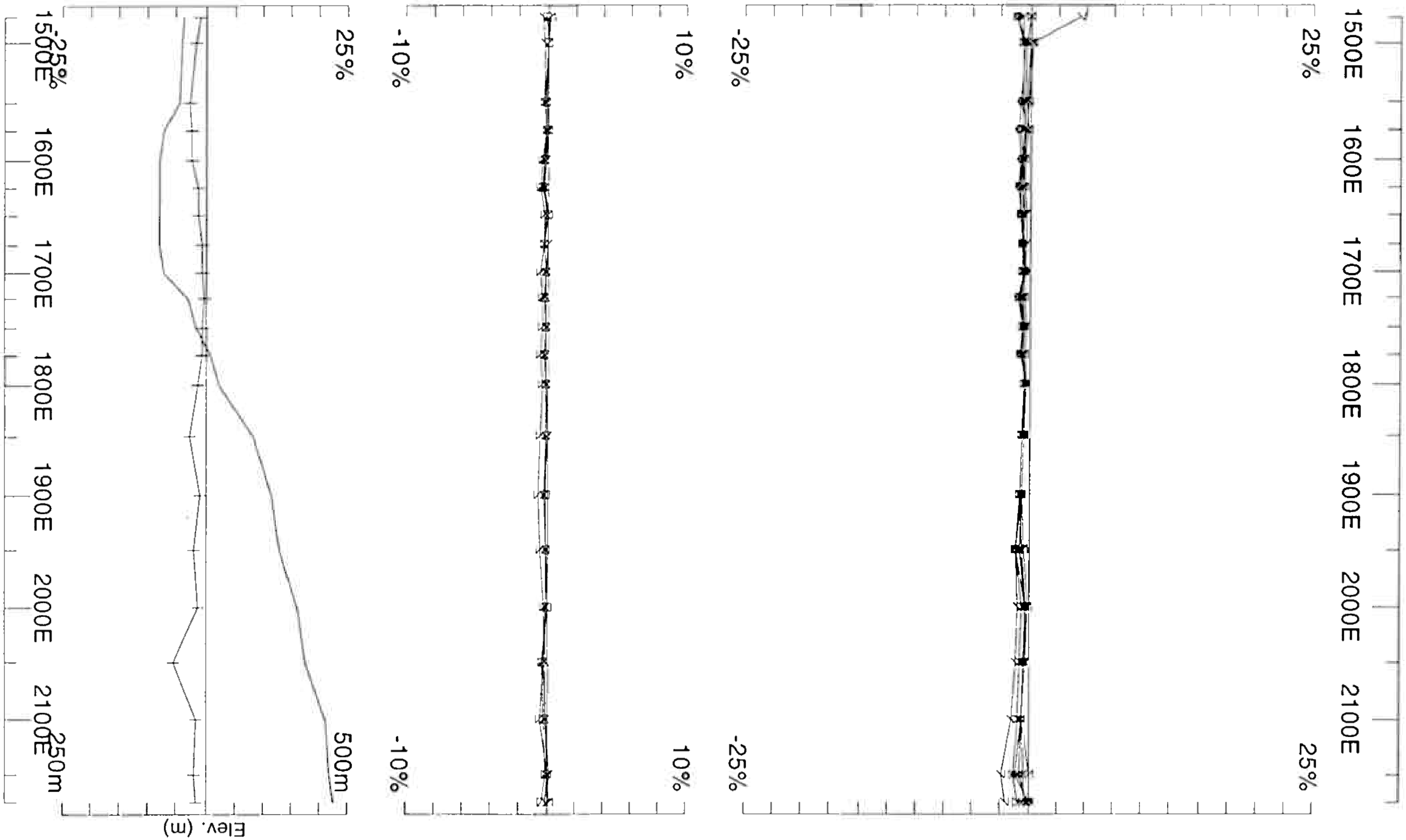
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

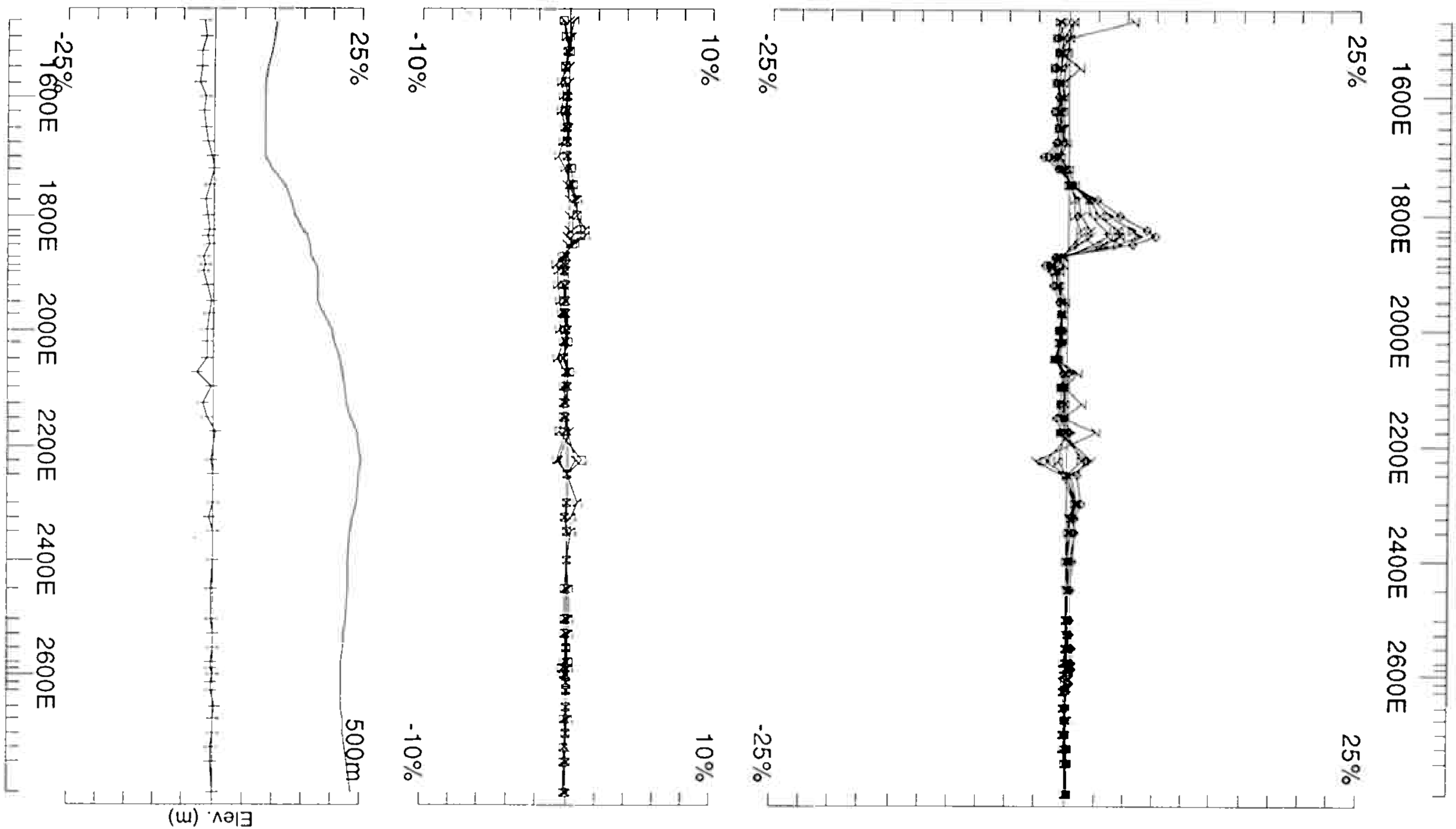
Surveyed : 1/4/6
Reduced : 29/5/6
Plotted : 13/6/6



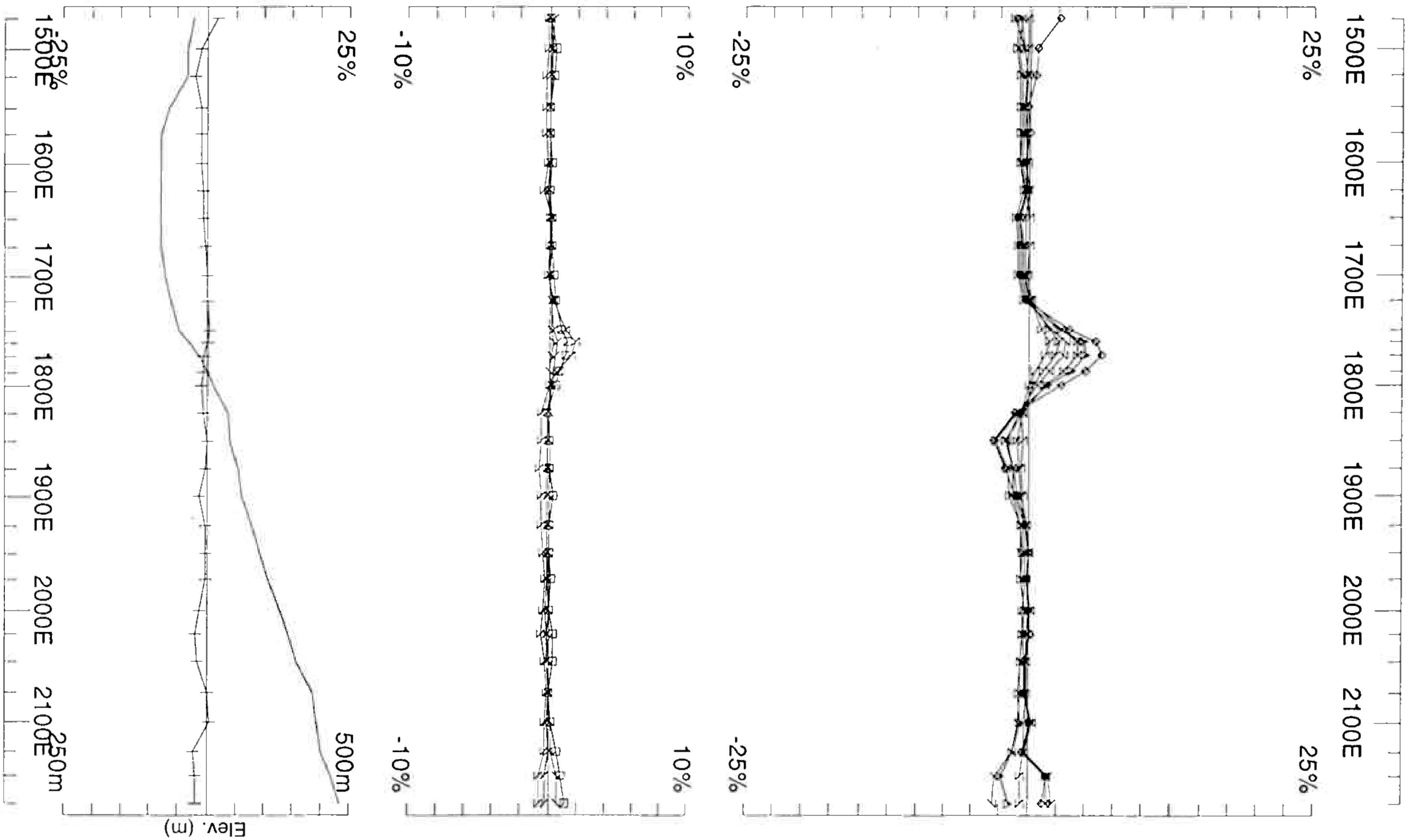
Loop: 05 Line: 5000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05 Line: 5100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 05 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05
Line: 5250N
Compt: Hz

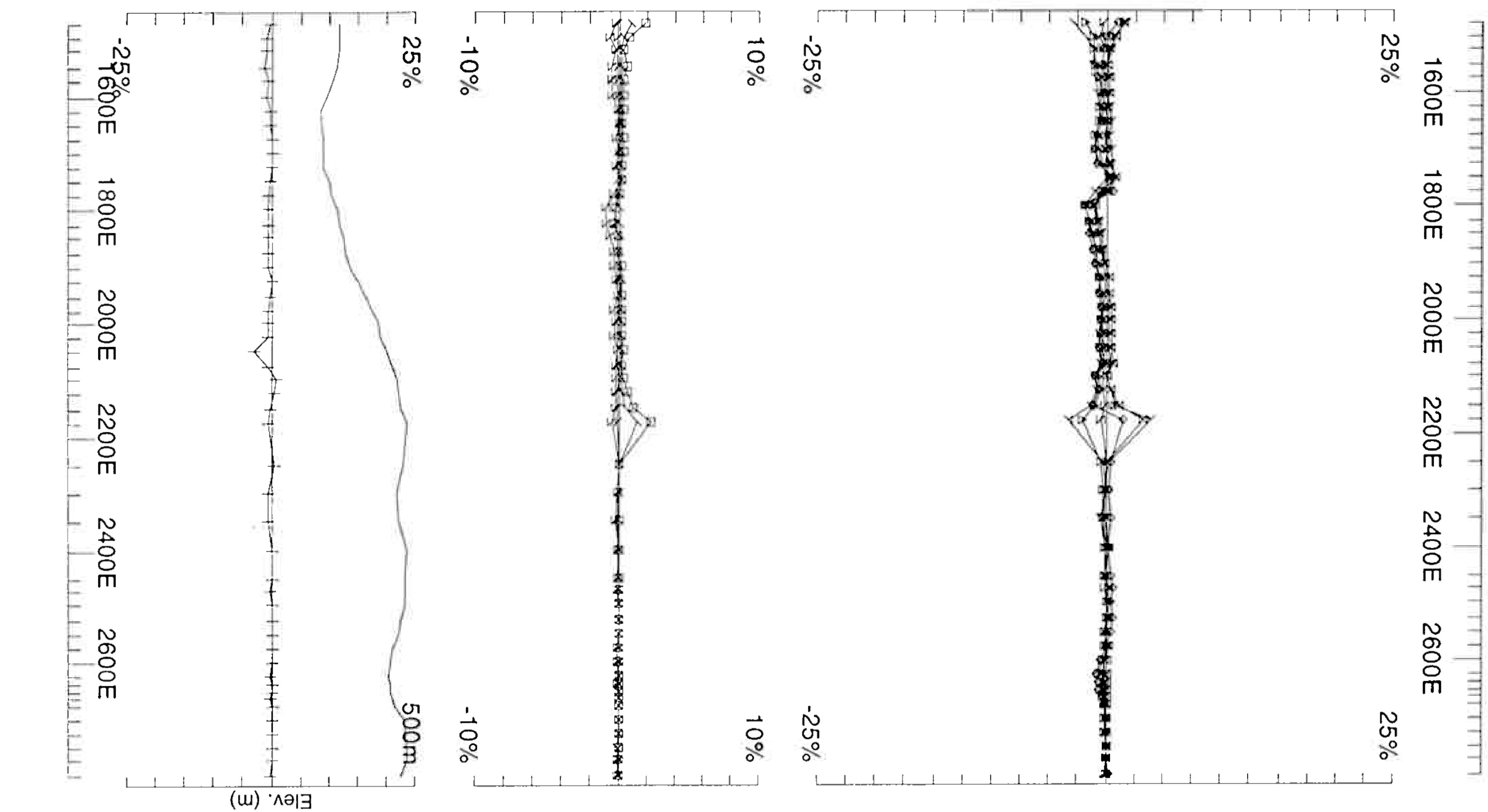
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(1825,5050,410)
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

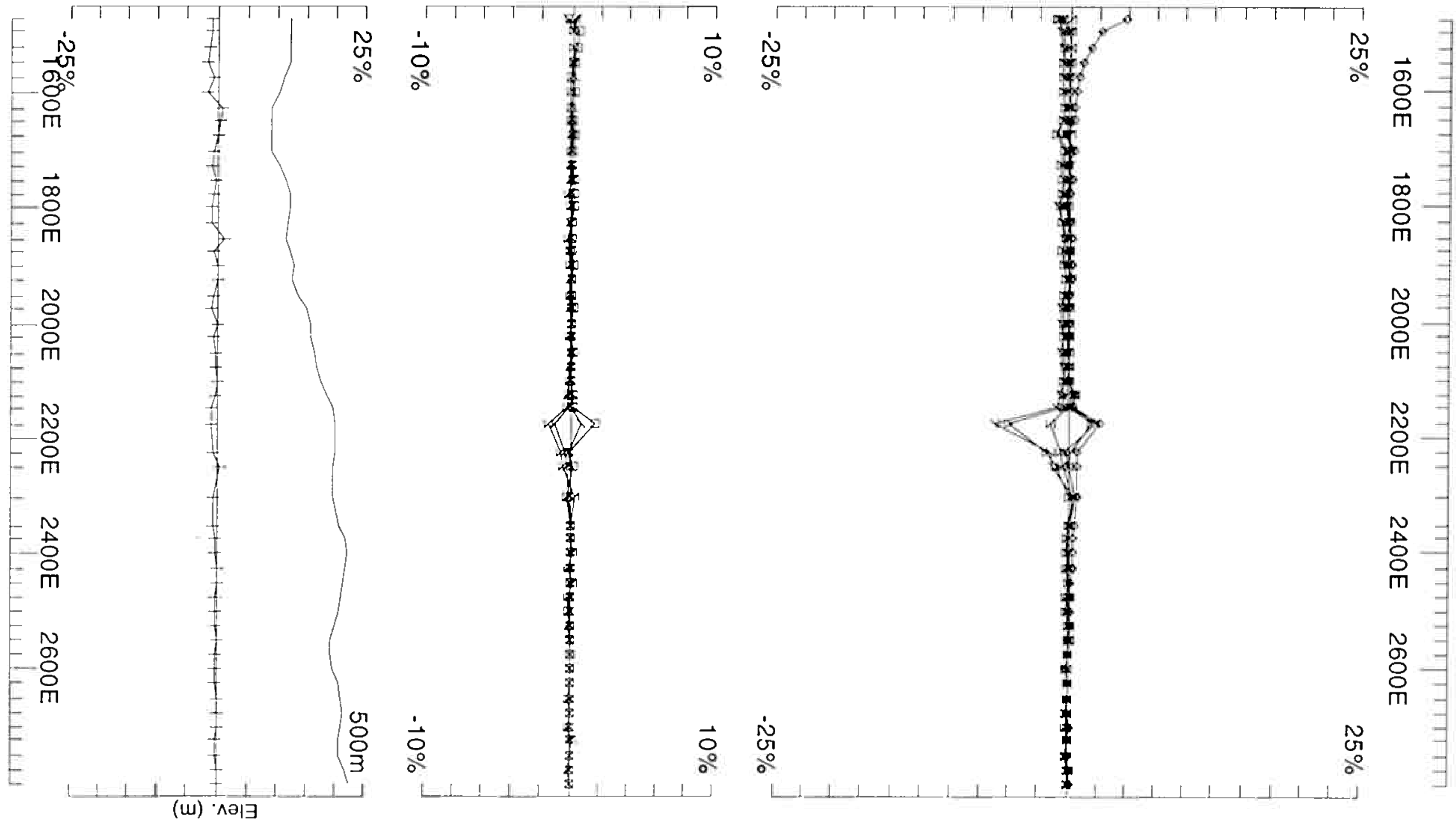
LAMONTAGNE GEOPHYSICS LTD
GEOPHYSIQUE LTEE

Job
0612

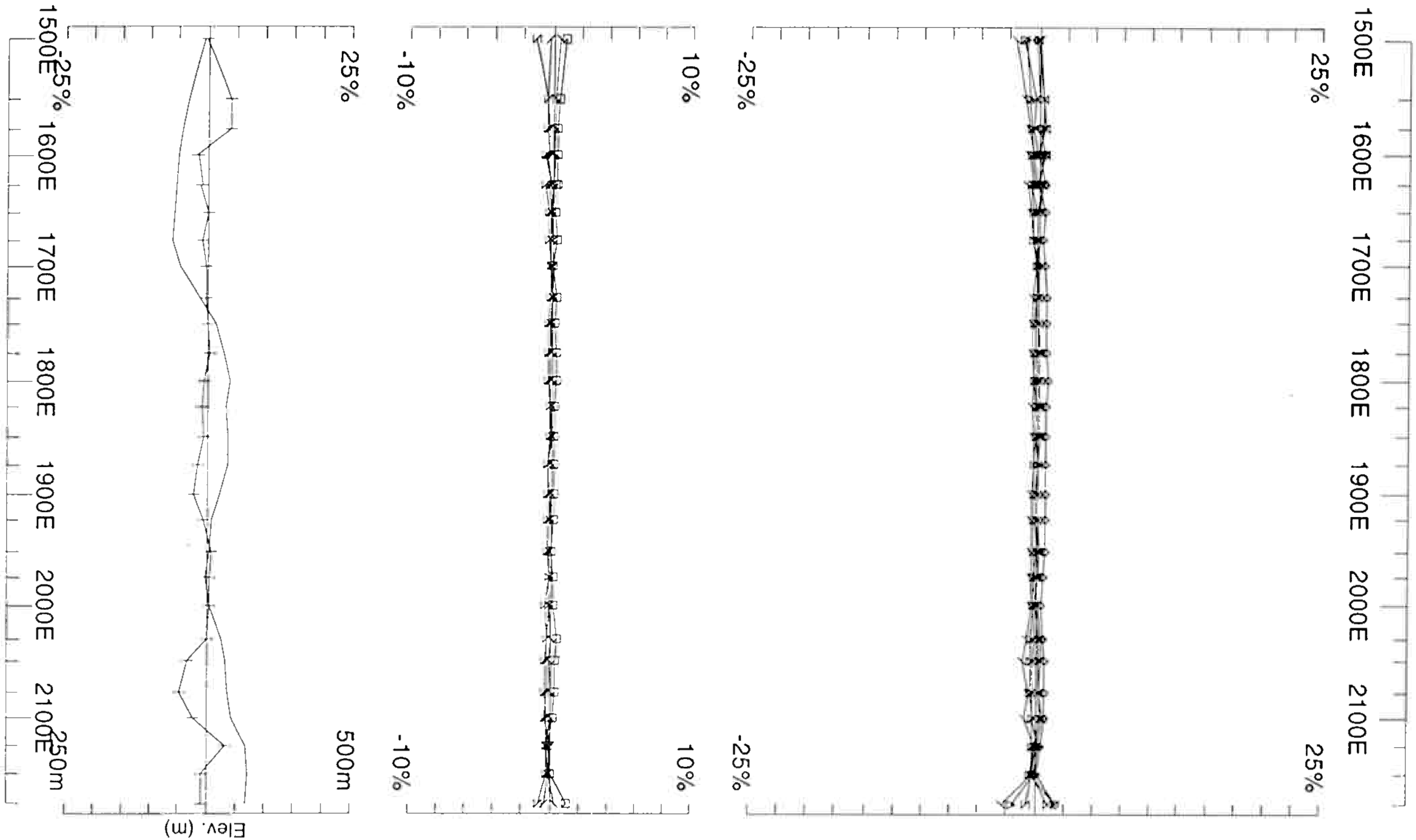
Surveyed : 31/3/6
Reduced : 29/5/6
Plotted : 13/6/6



Loop: 05 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05 Line: 5400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 05 Line: 5500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6

Langedalen Grid

Loop 05: In-loop Profiles

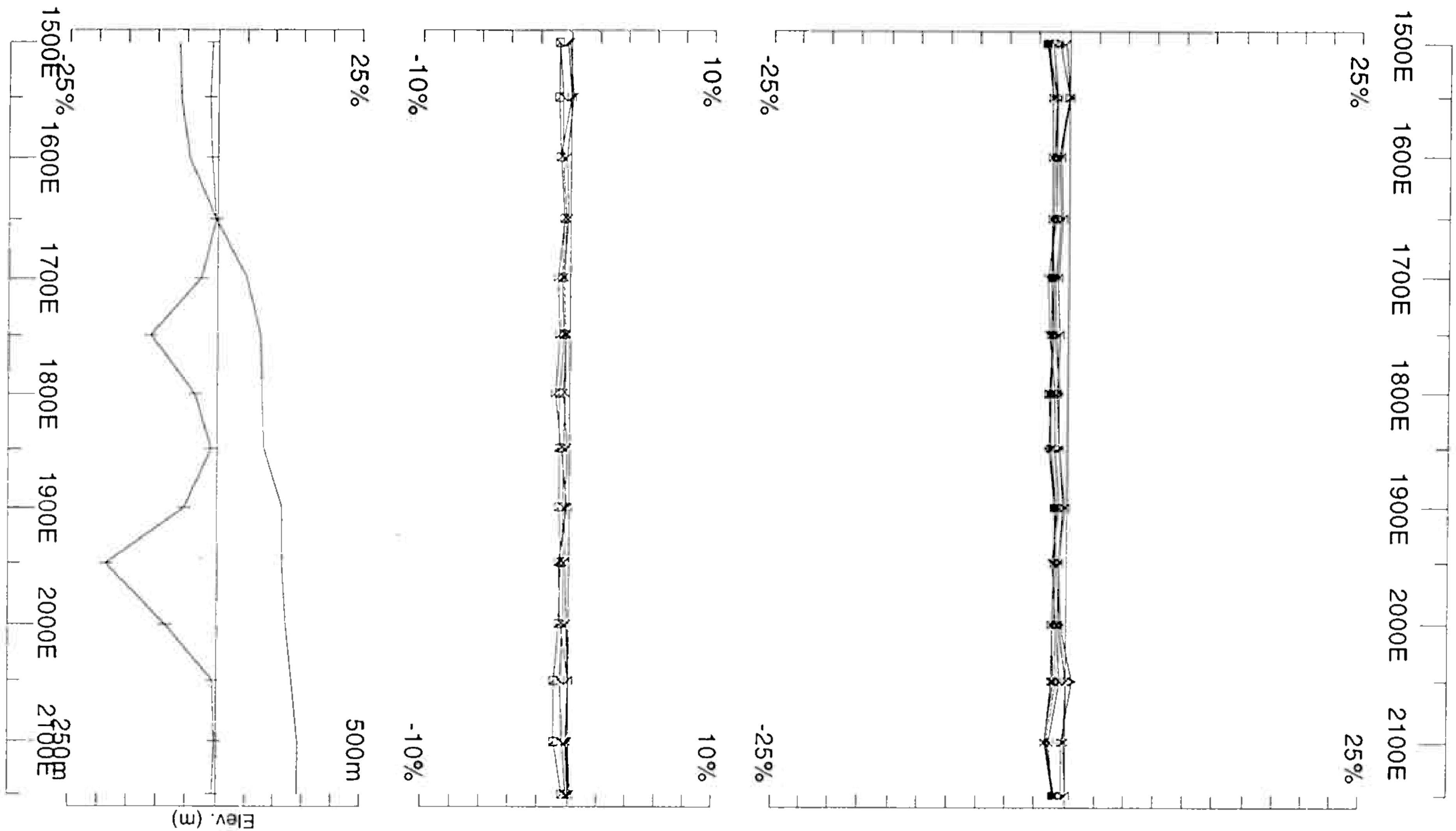
Hz
@3.251 Hz frequency

point norm
@ ~centre of the loop
(x,y,z) = (1825E,5050N, 410 m.a.s.l.)

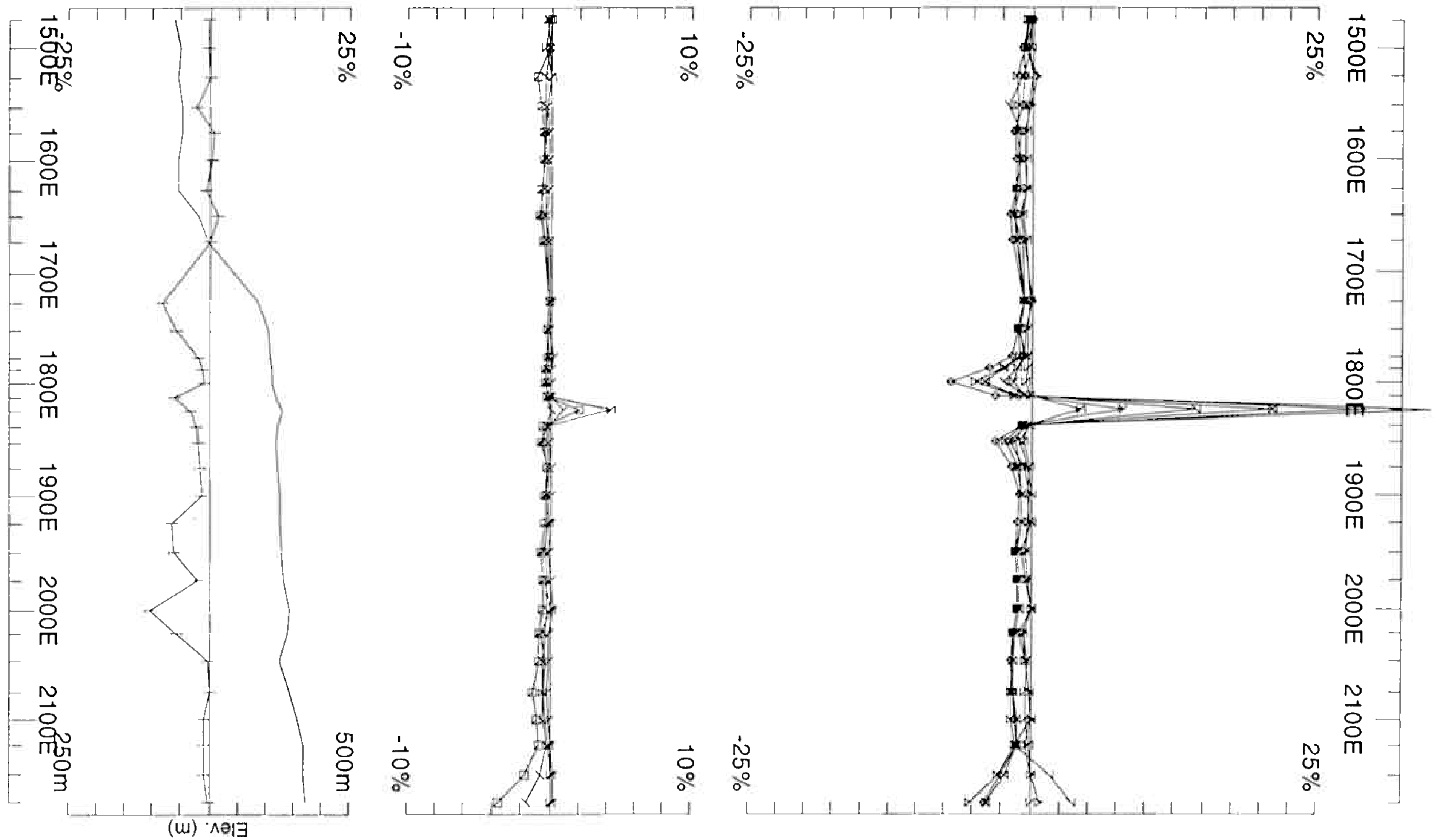
Ch1 reduced

In-Loop 05 Langedalen	Line 4600N	1500E - 2150E	650m	1:5000
	Line 4700N	1475E - 2175E	700m	1:5000
	Line 4750N	1650E - 2100E	450m	1:5000
	Line 4800N	1475E - 2175E	700m	1:5000
	Line 4900N	1475E - 2175E	700m	1:5000
	Line 5000N	1500E - 2175E	675m	1:5000
	Line 5100N	1475E - 2175E	700m	1:5000
	Line 5200N	1475E - 2175E	700m	1:5000
	Line 5250N	1475E - 2175E	700m	1:5000
	Line 5300N	1450E - 2175E	725m	1:5000
	Line 5400N	1475E - 2175E	700m	1:5000
	Line 5500N	1500E - 2175E	675m	1:5000
	Langedalen	In-Loop 05 Total	8075m	

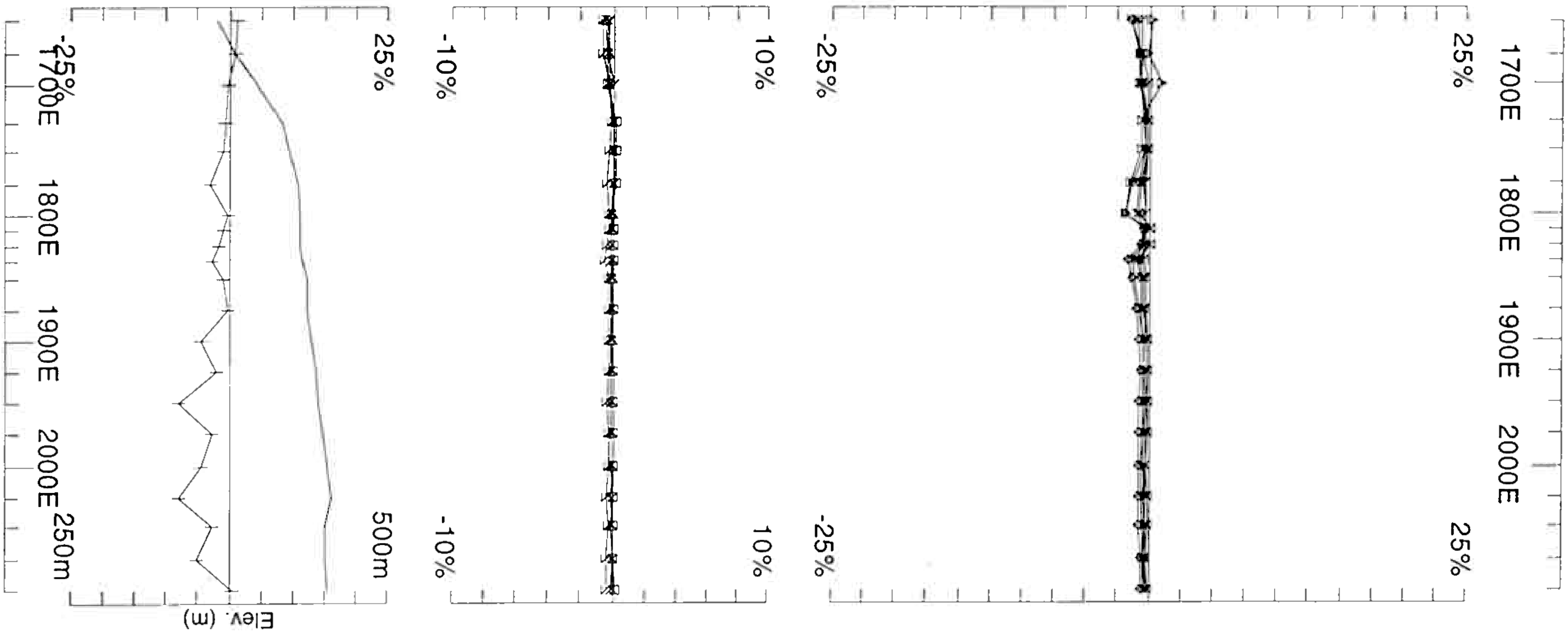
Loop 05 - point norm



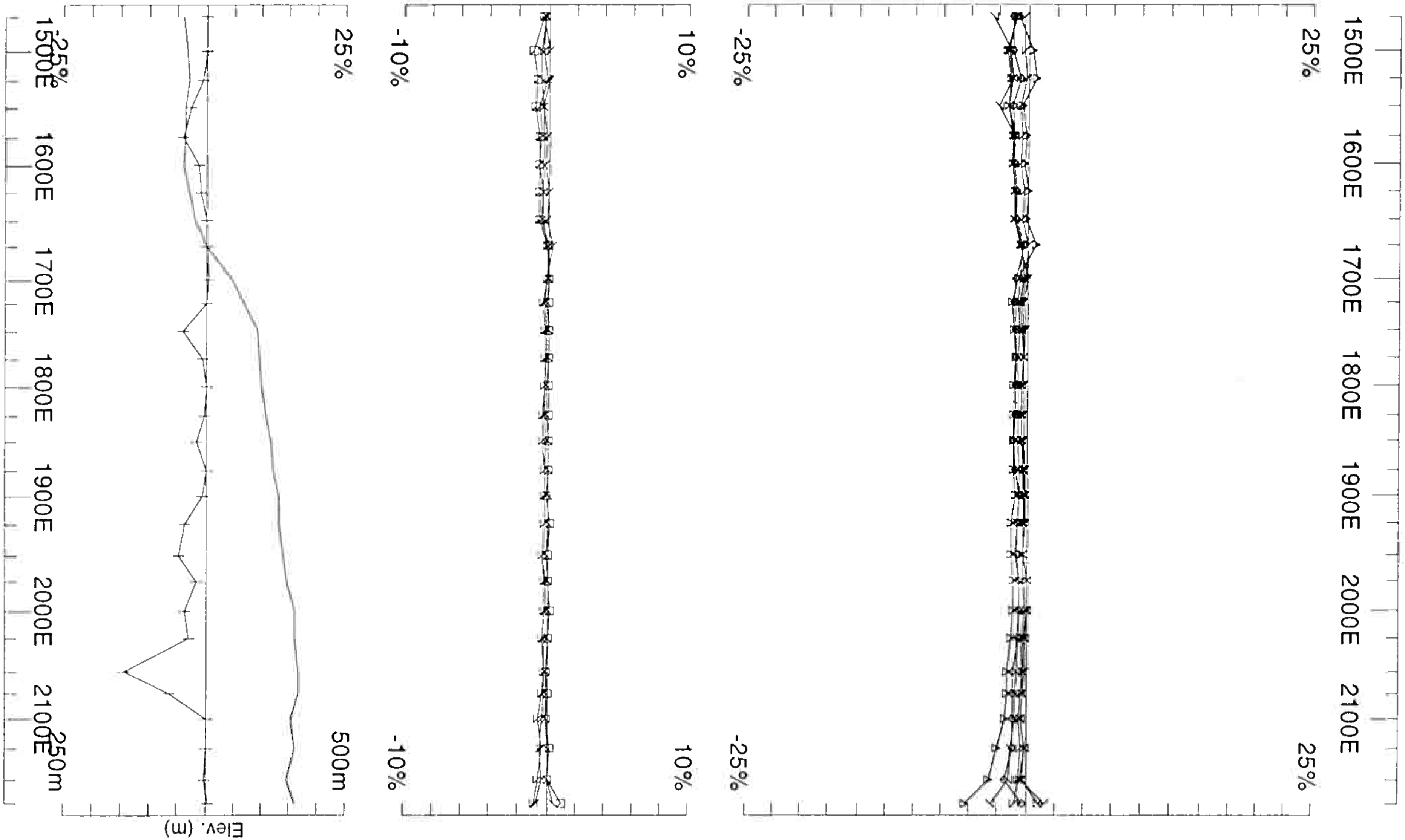
Loop: 05 Line: 4600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



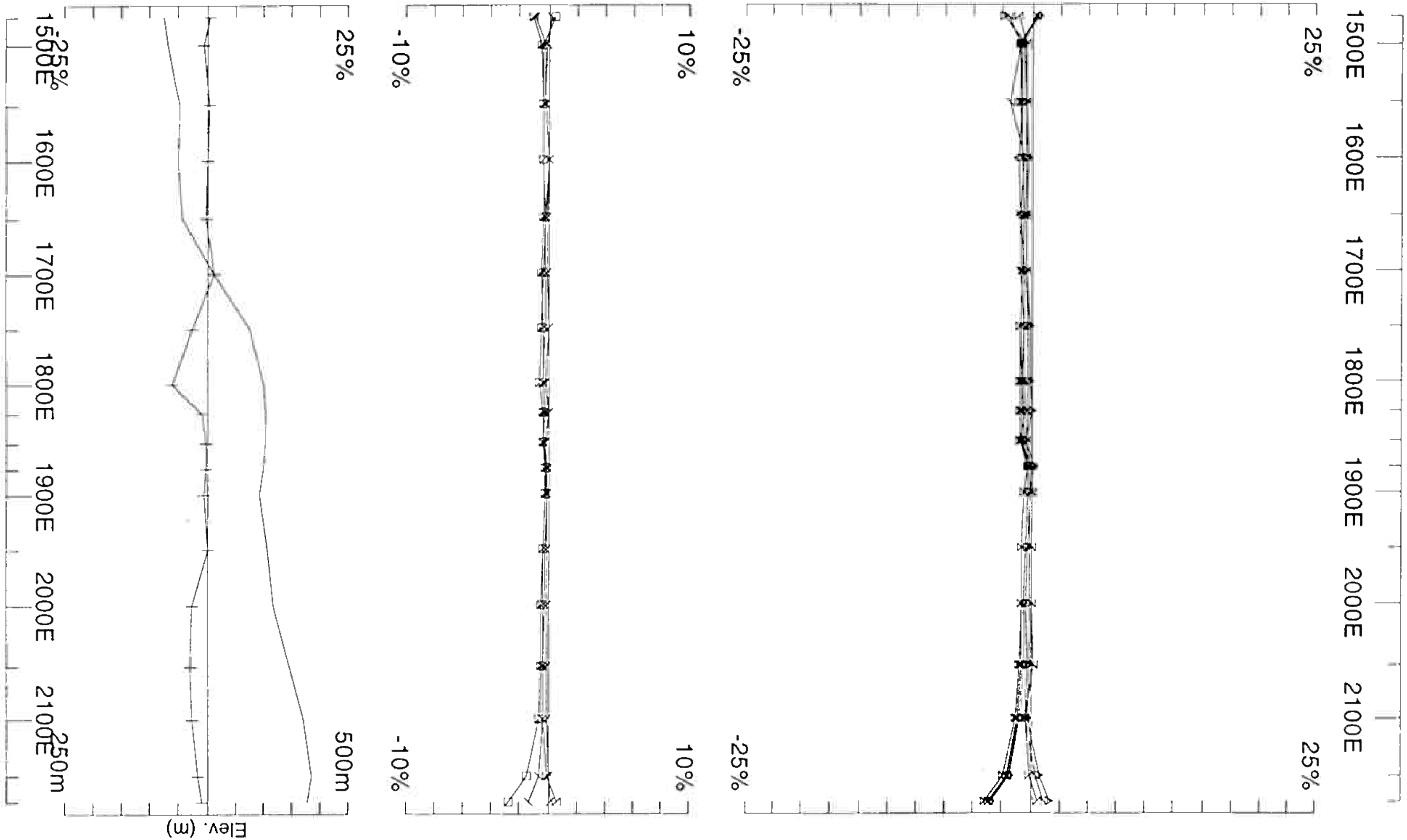
Loop: 05 Line: 4700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 29/5/6 Plotted : 13/6/6



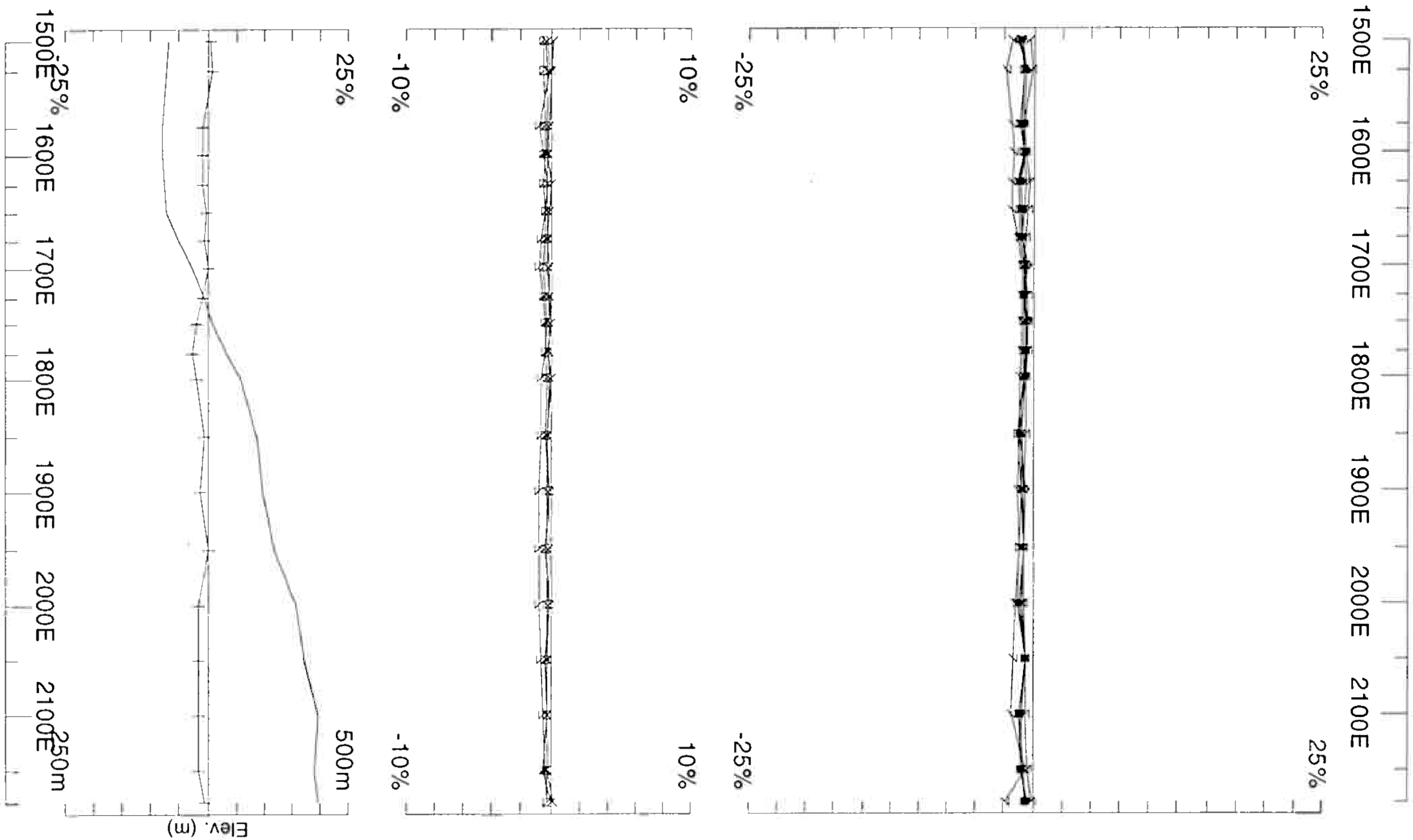
Loop: 05 Line: 4750N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



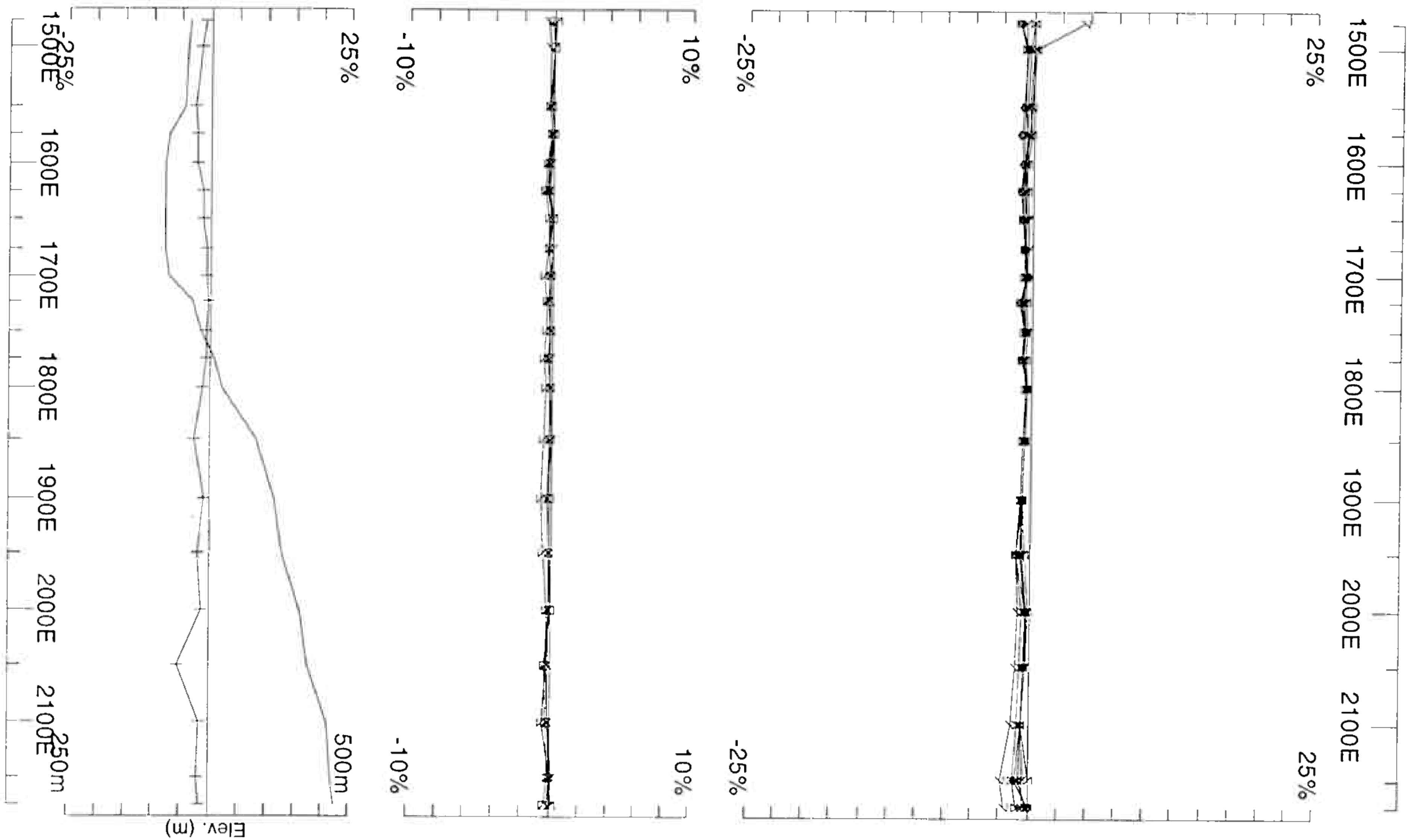
Loop: 05 Line: 4800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



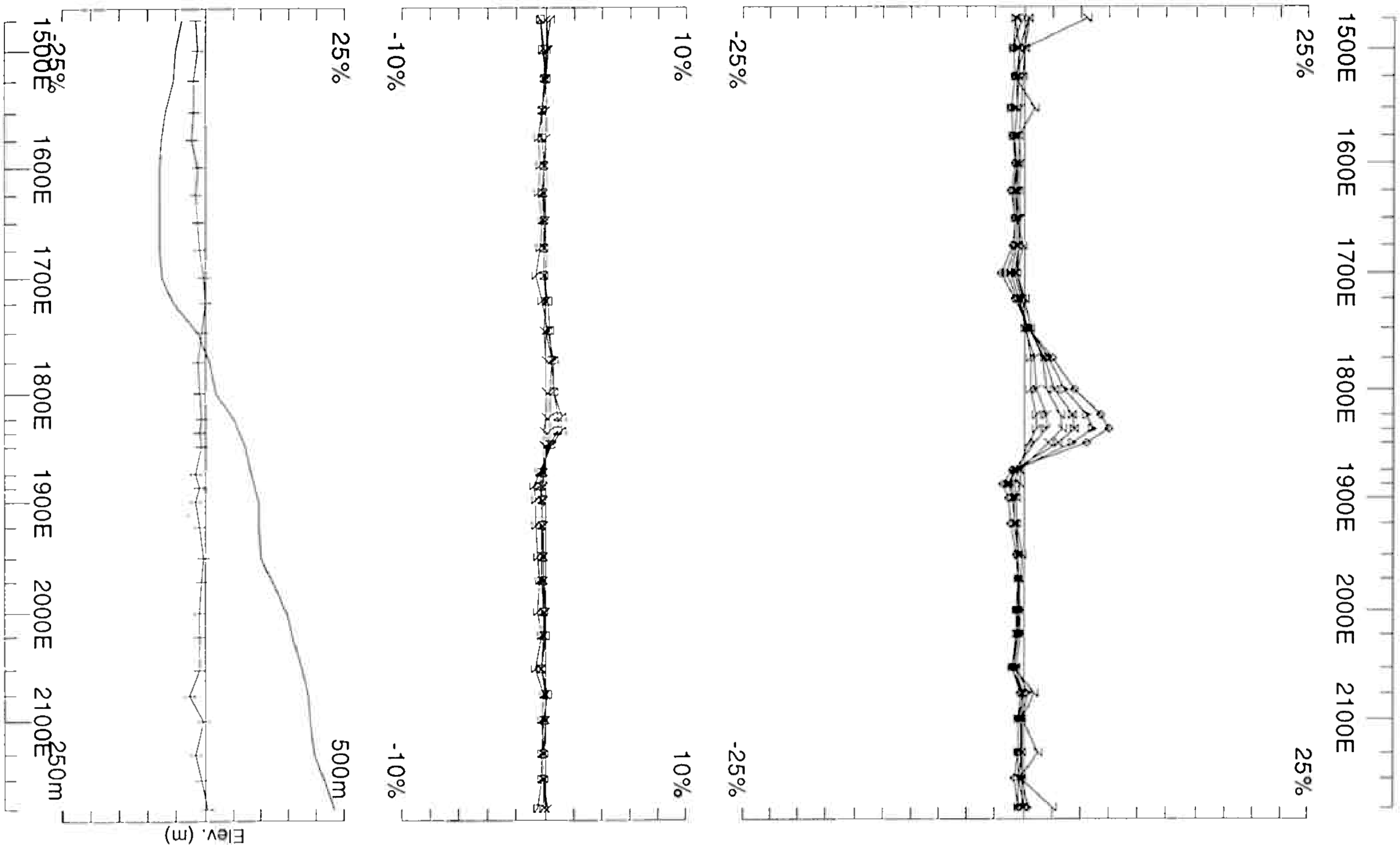
Loop: 05 Line: 4900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 1/4/6 Reduced : 29/5/6 Plotted : 13/6/6



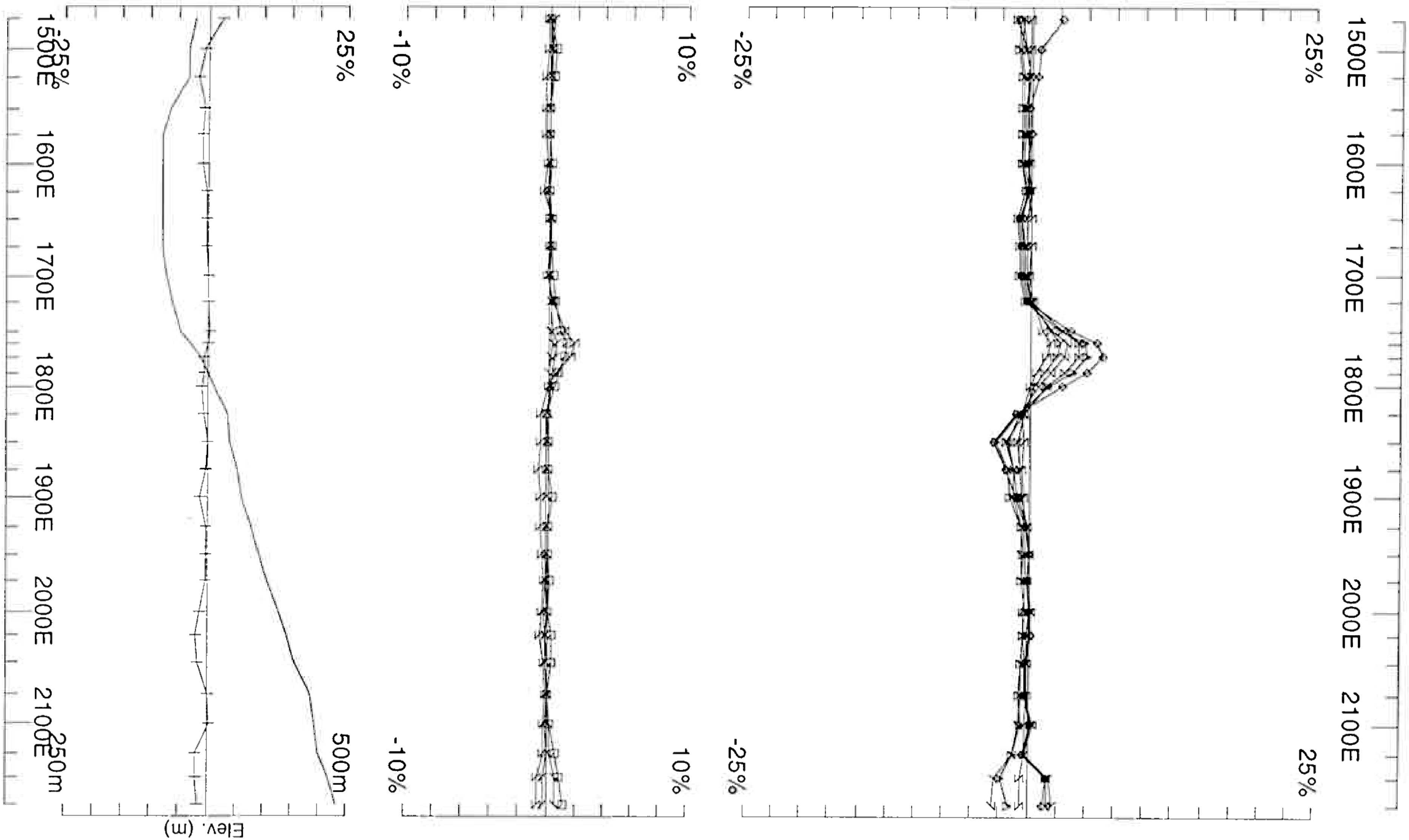
Loop: 05 Line: 5000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



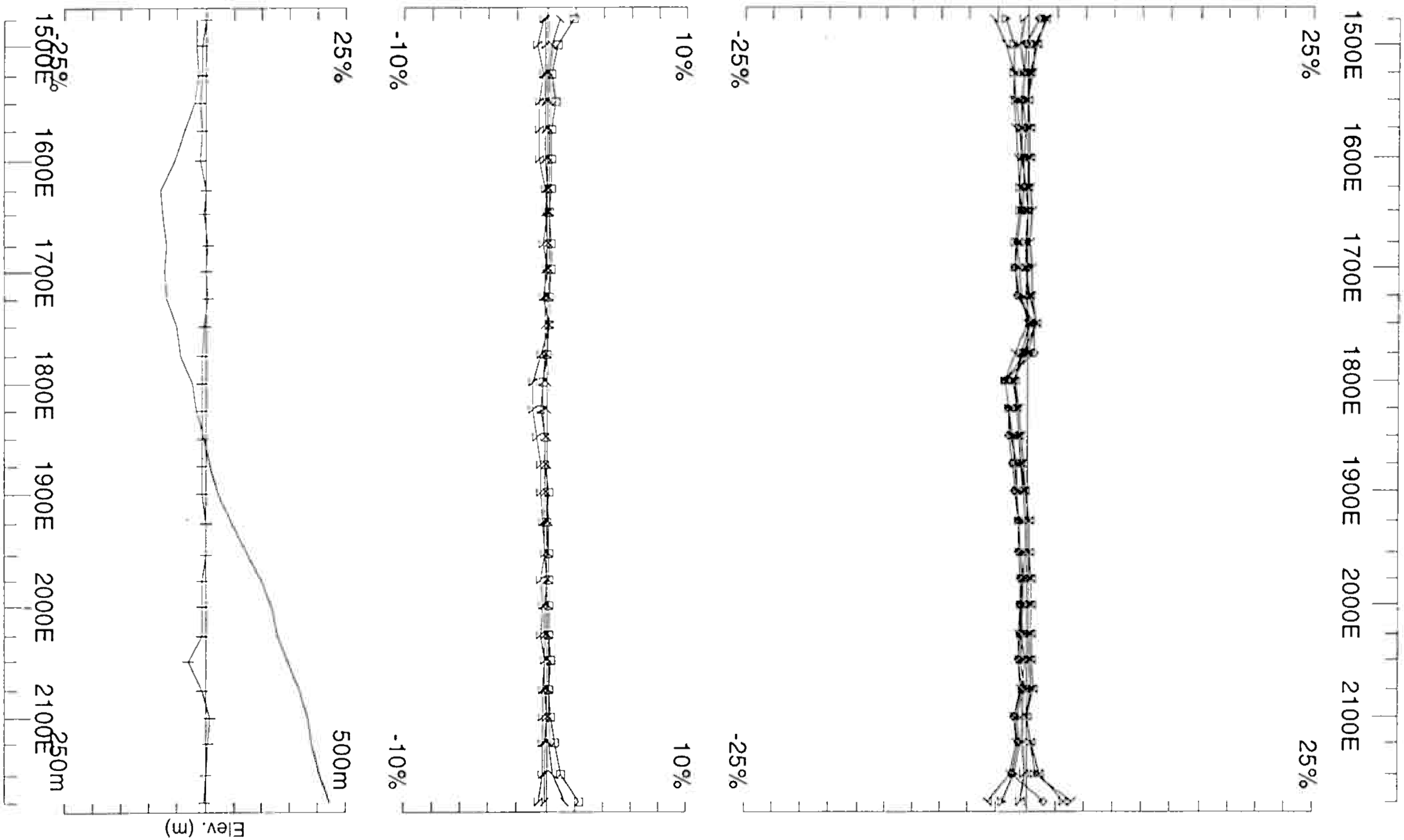
Loop: 05 Line: 5100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 29/5/6 Plotted : 13/6/6



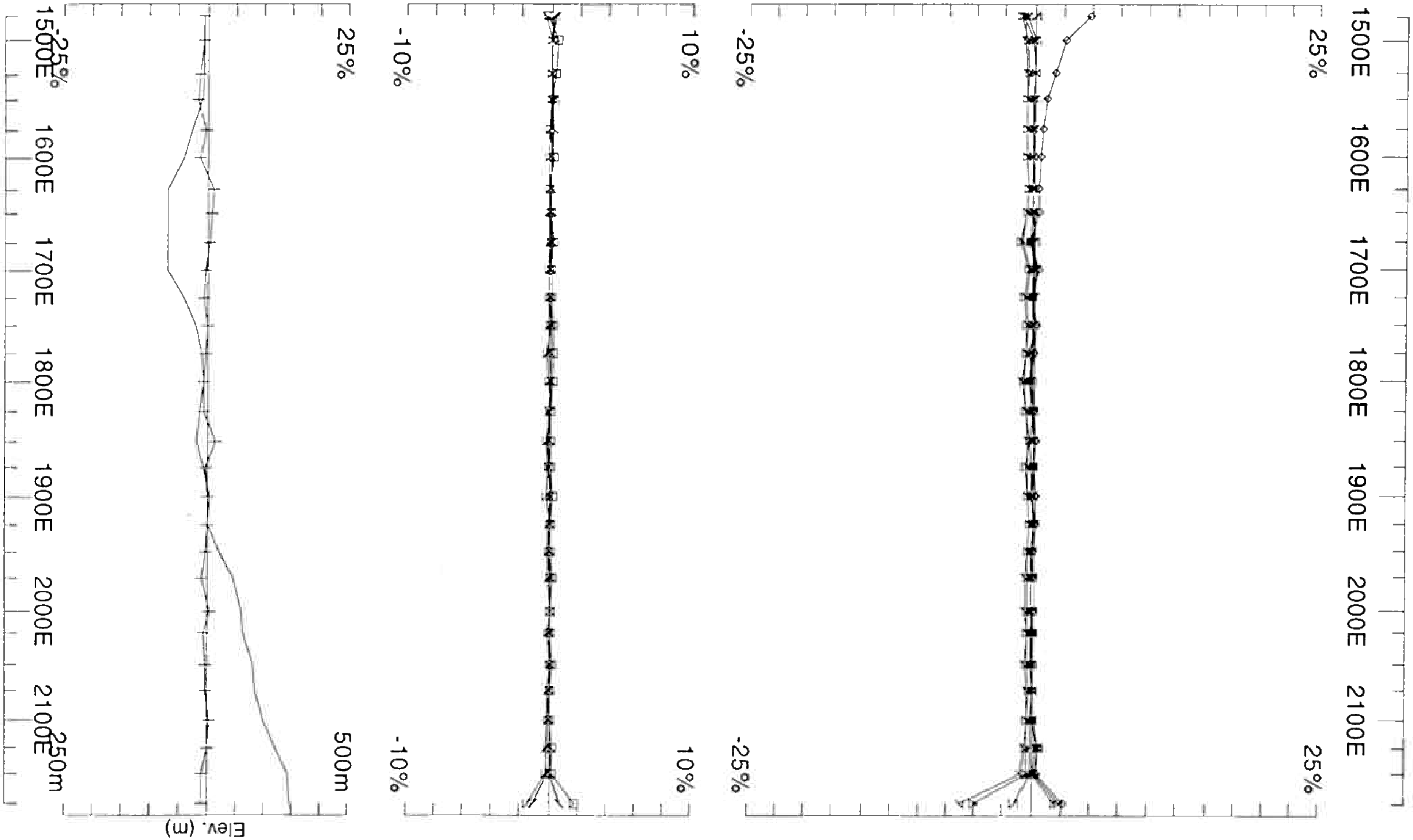
Loop: 05 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



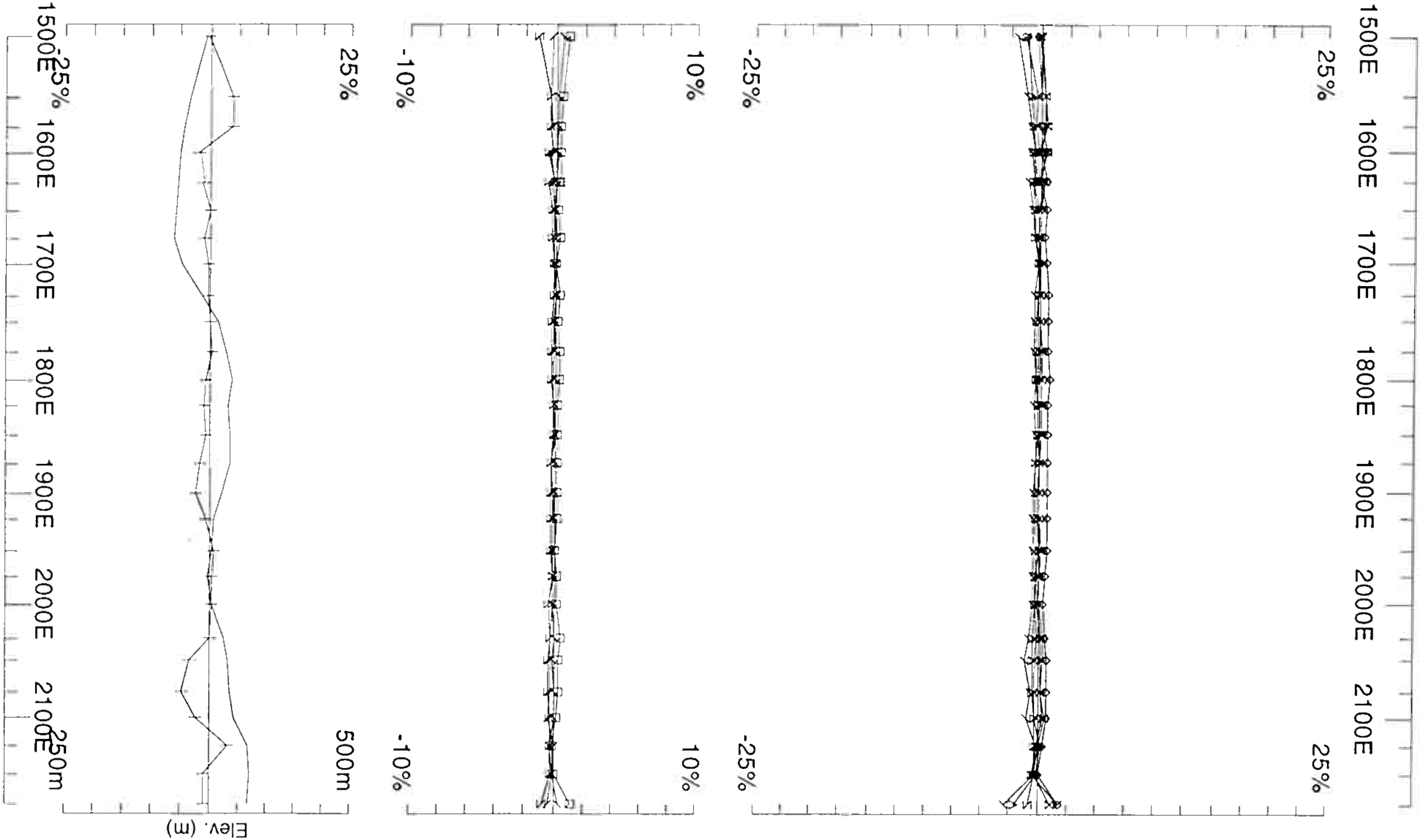
Loop: 05 Line: 5250N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 31/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,5050,410) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6

Langedalen Grid

Loop 05: Off-loop Profiles

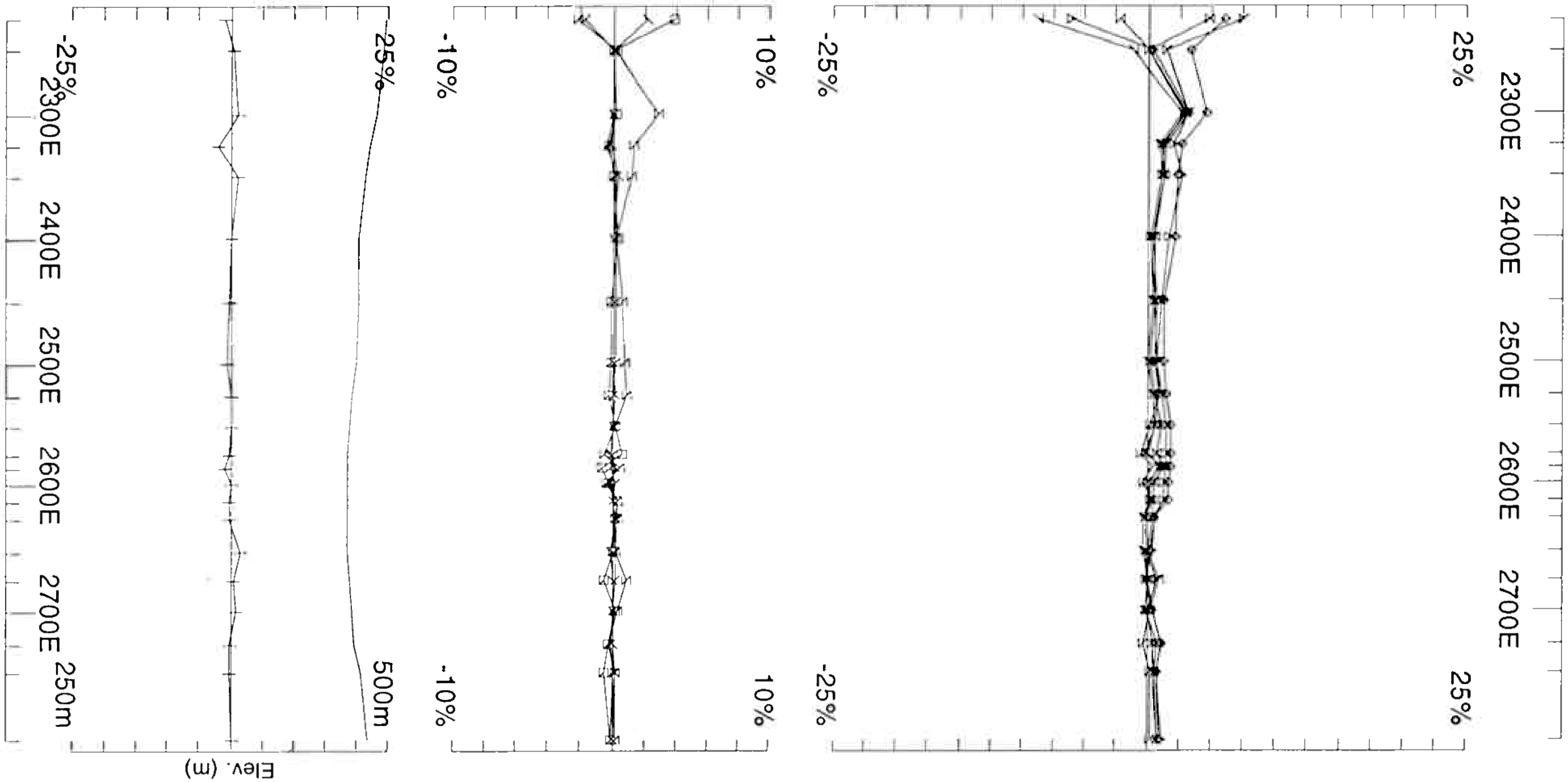
Hz
@3.251 Hz frequency

point norm
@ ~300m outside the loop centre
(x,y,z) = (2500E,5050N, 470 m.a.s.l.)

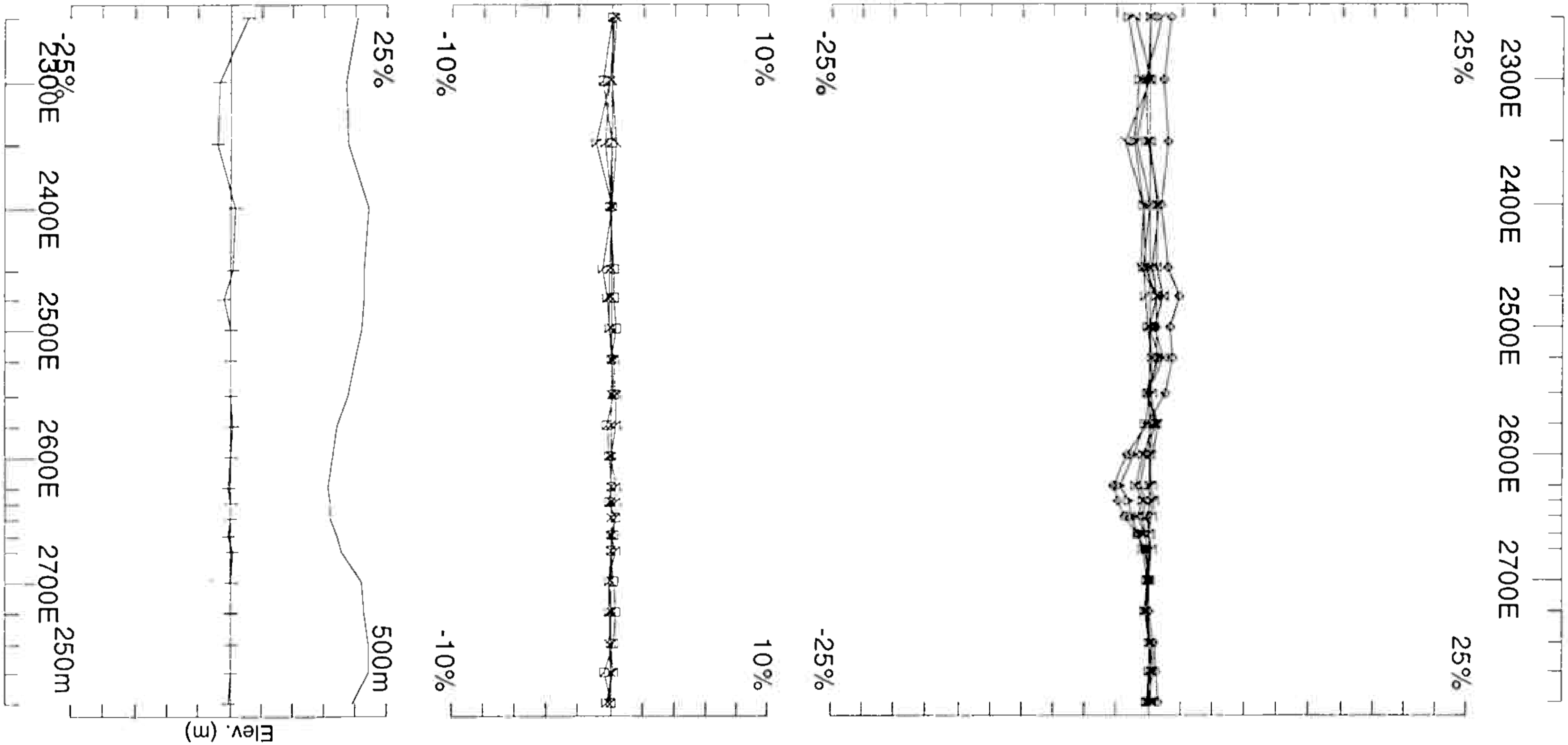
Ch1 reduced

Off-Loop 05 Langedalen	Line 5200N	2225E - 2800E	575m	1:5000
	Line 5300N	2250E - 2800E	550m	1:5000
	Line 5400N	2225E - 2800E	575m	1:5000
	Langedalen	Off-Loop 05 Total	1700m	

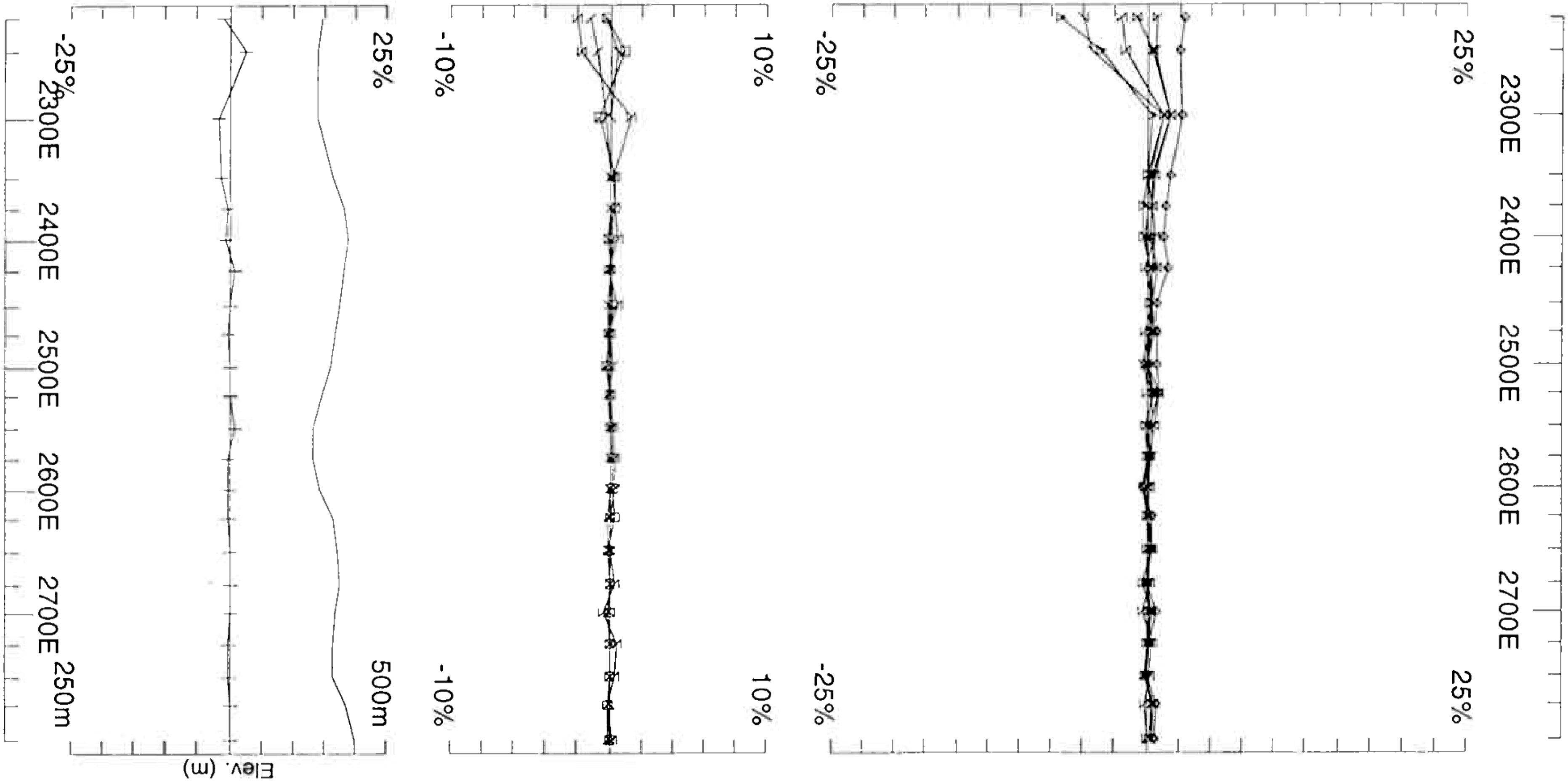
Loop 05 - point norm



Loop: 05 Line: 5200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,5050,470) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,5050,470) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 05 Line: 5400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,5050,470) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 30/3/6 Reduced : 2/6/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: Full Profiles

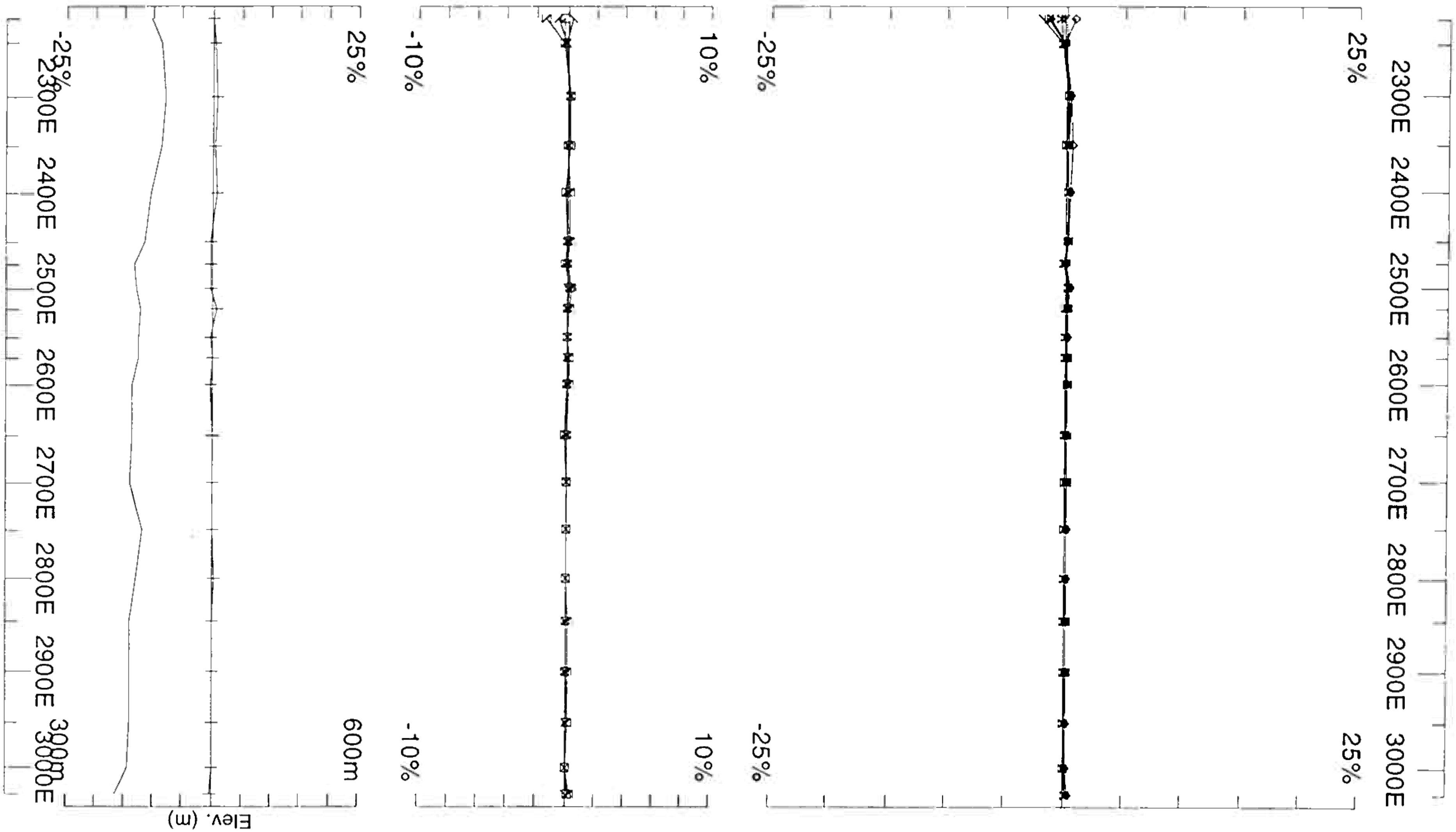
Hz
@3.251 Hz frequency

point norm
@~ centre of the loop
(x,y,z) = (1825E,4100N, 380 m.a.s.l.)

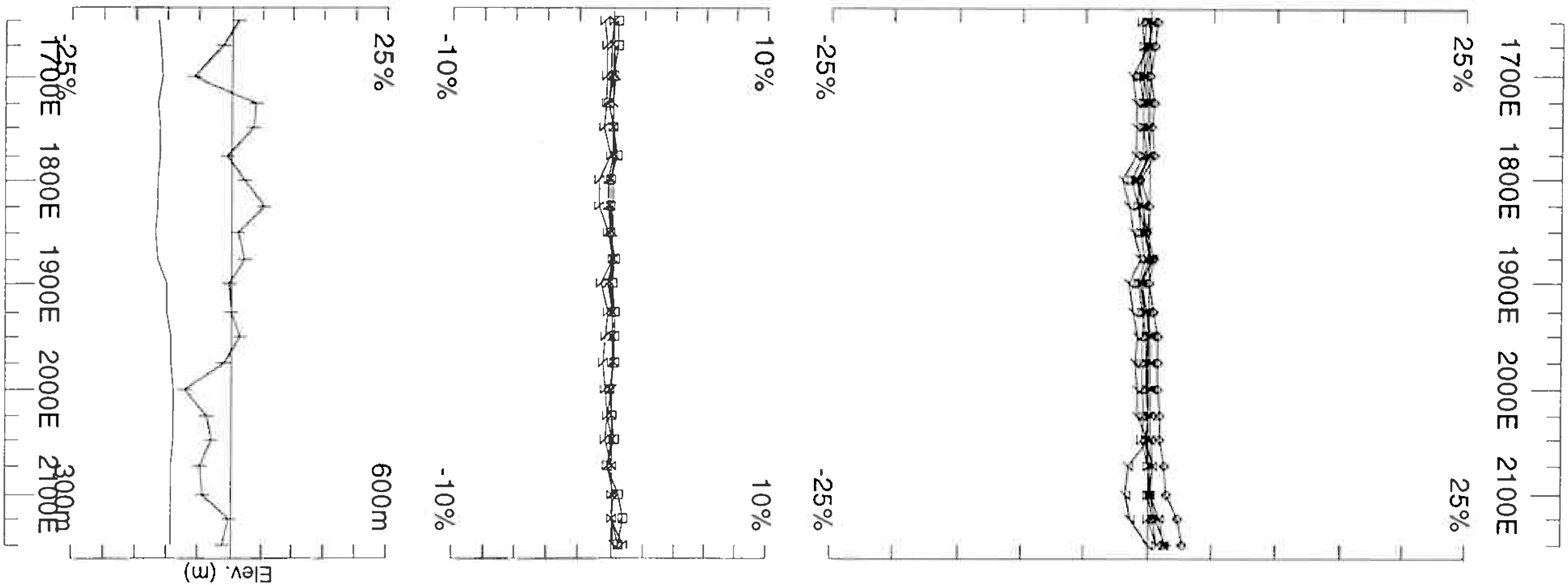
Ch1 reduced

Loop 06	Line 3600N	2225E - 3025E	800m	1:6000
Langedalen	Line 3700N	1650E - 2150E	500m	1:6000
	Line 3800N	1475E - 2175E	700m	1:11000
		2225E - 3025E	800m	
	Line 3900N	1650E - 2150E	500m	1:6000
	Line 4000N	1475E - 2175E	700m	1:11000
		2250E - 3025E	775m	
	Line 4100N	1500E - 2150E	650m	1:11000
		2250E - 2900E	650m	
	Line 4200N	1500E - 2150E	650m	1:11000
		2250E - 2750E	500m	
	Line 4300N	1475E - 2150E	675m	1:11000
		2250E - 2575E	325m	
	Line 4400N	1475E - 2175E	700m	1:6000
	Line 4500N	1500E - 2150E	650m	1:6000
	Langedalen	Loop 06 Total	9575m	

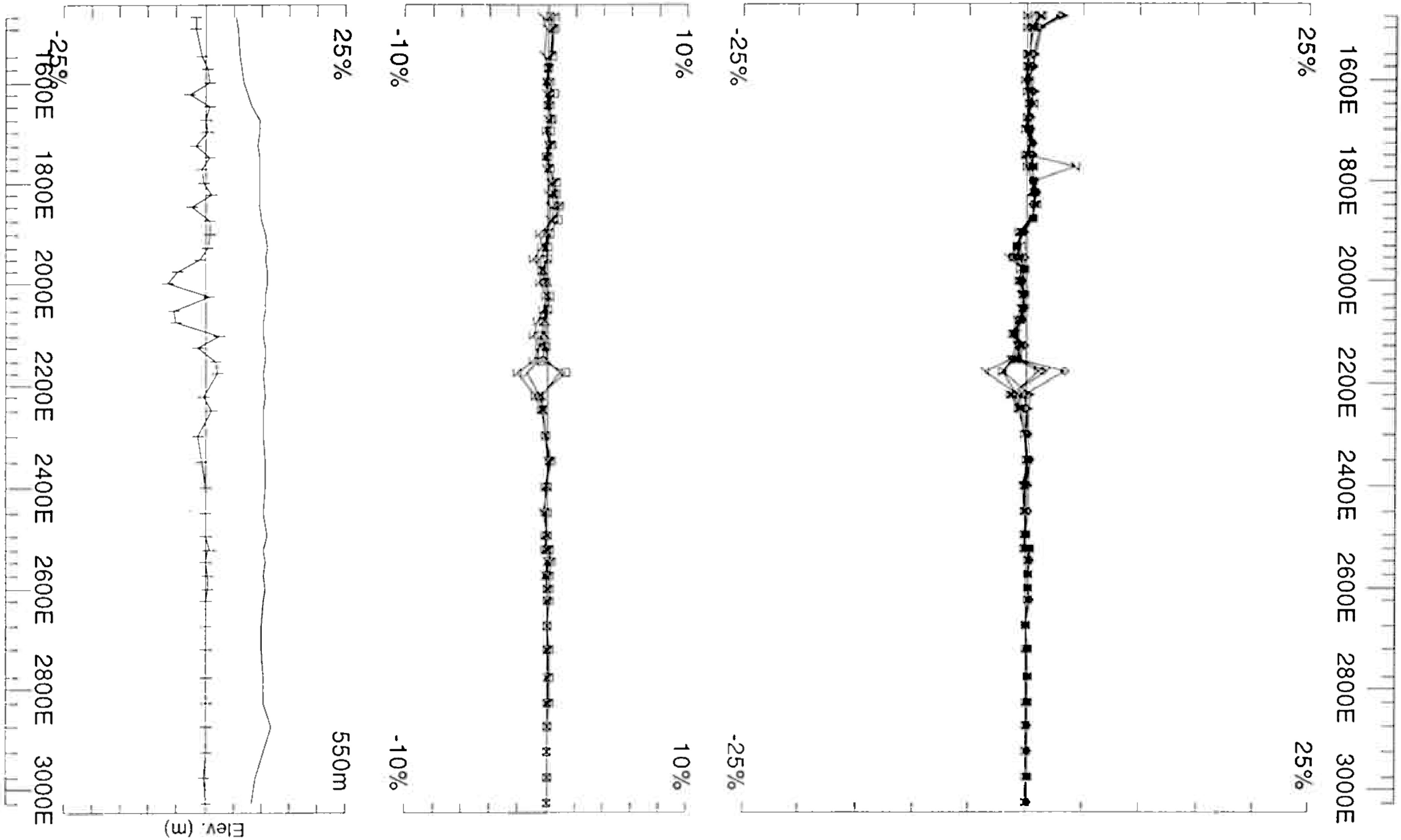
Loop 06 - point norm



Loop: 06 Line: 3600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 06 Line: 3700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6



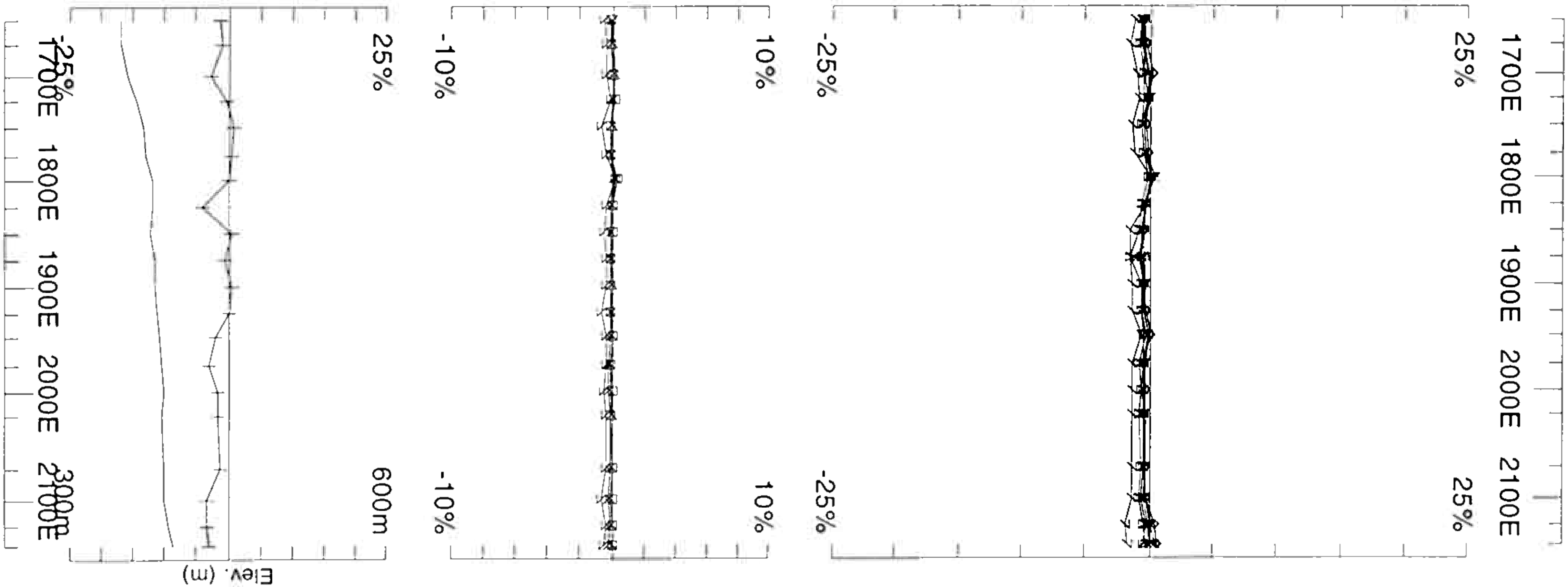
Loop: 06
Line: 3800N
Compt: Hz

Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(1825,4100,405)
Base Freq. 3.251 Hz

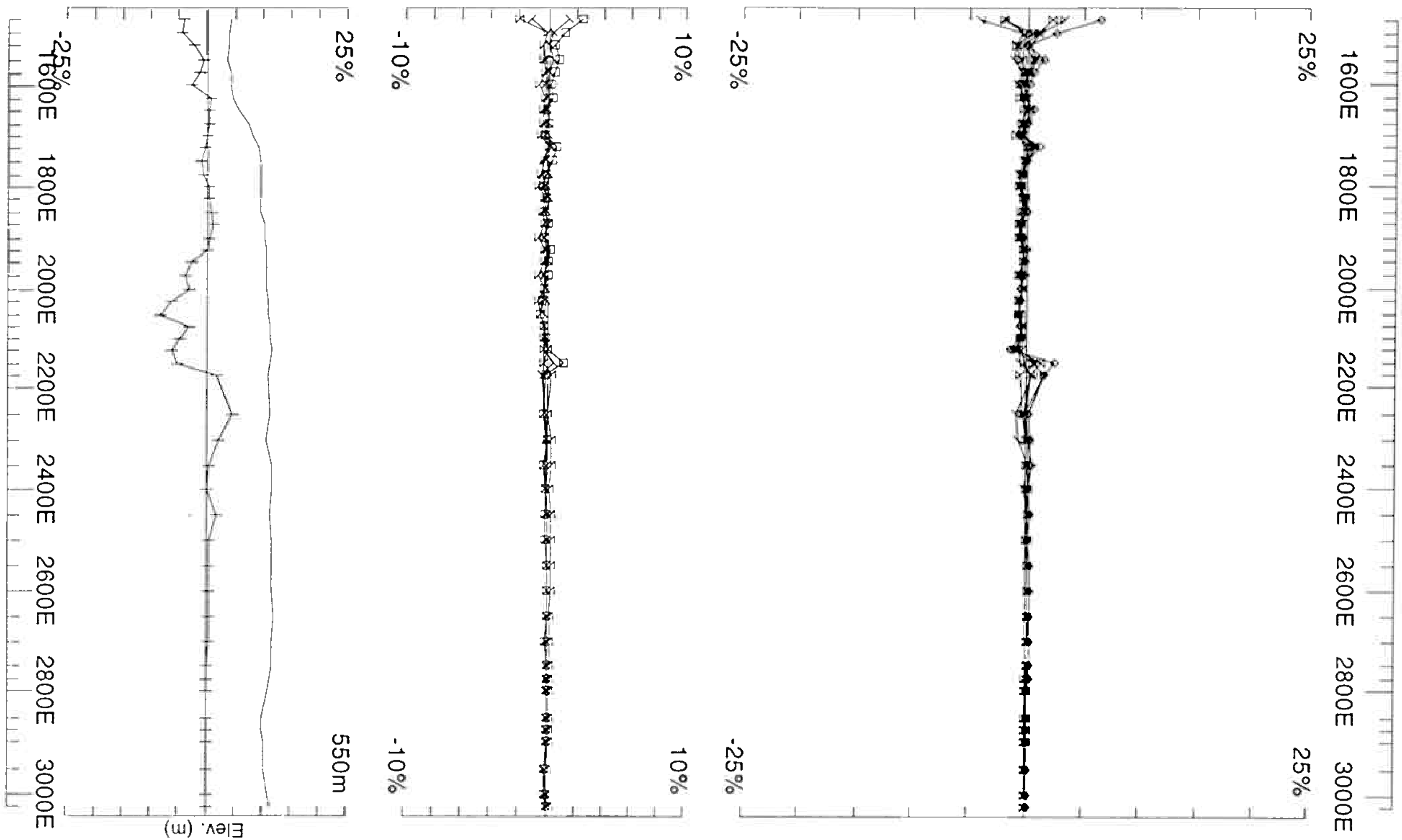
UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

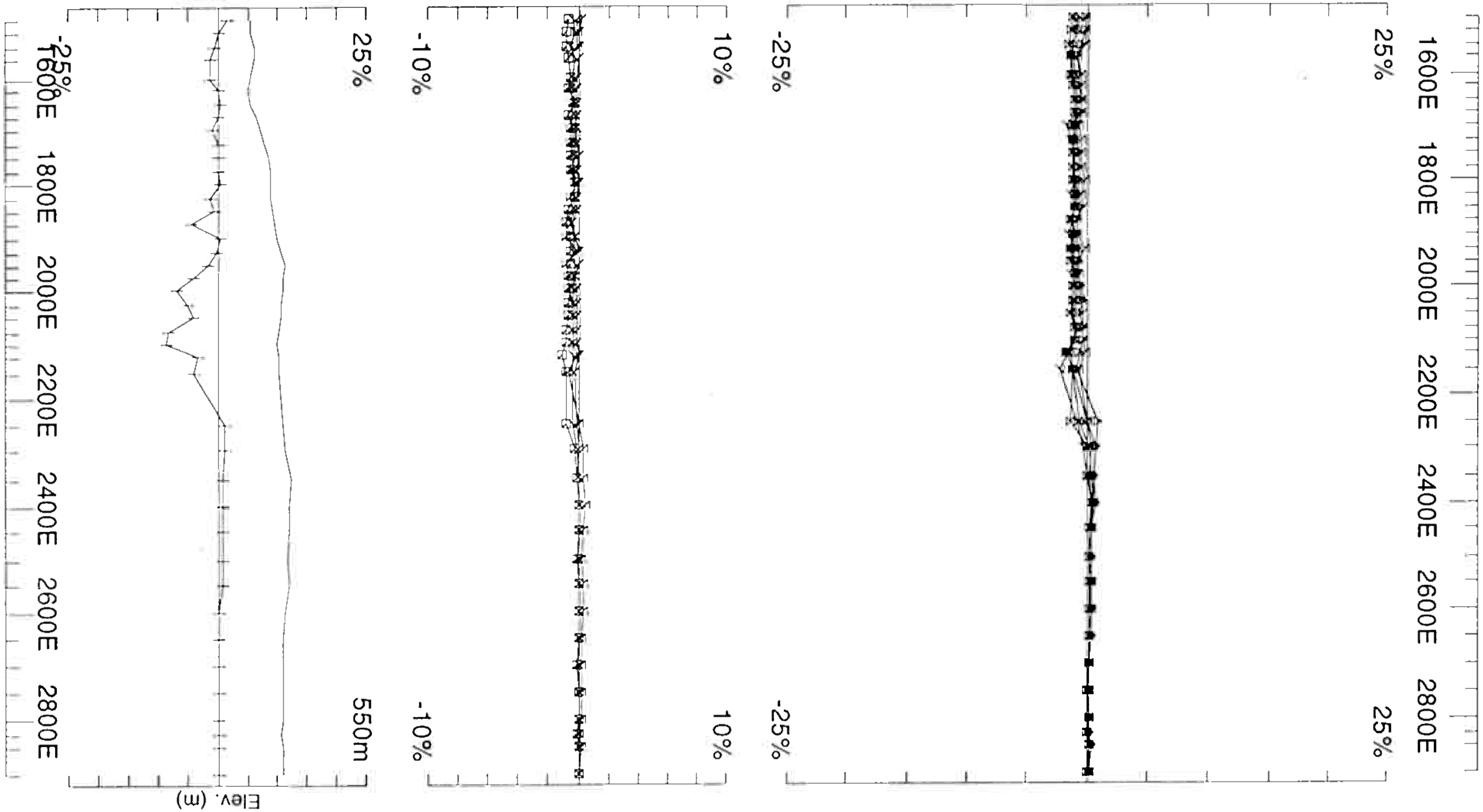
Job 0612 Plotted : 13/6/6



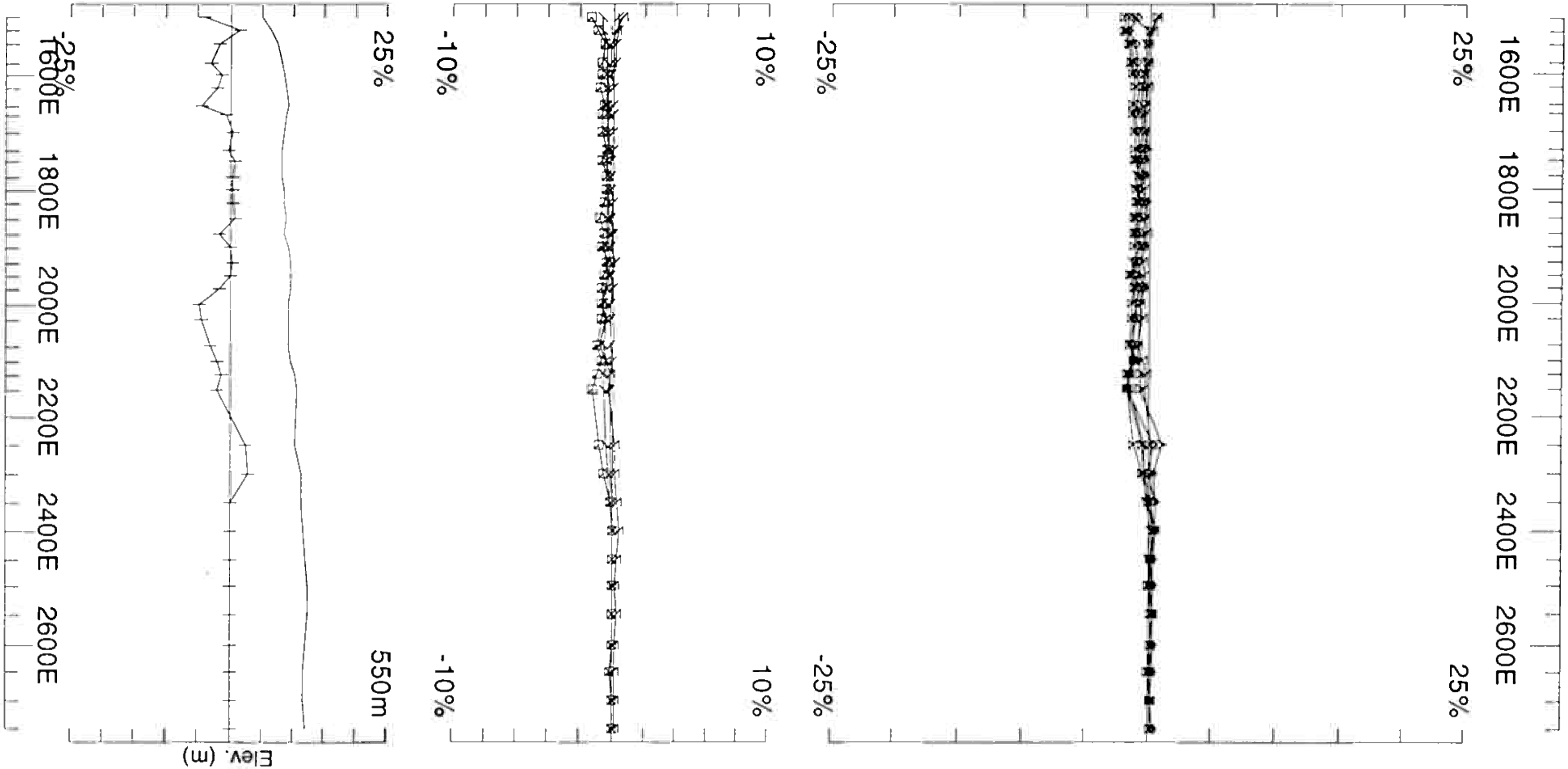
Loop: 06 Line: 3900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6



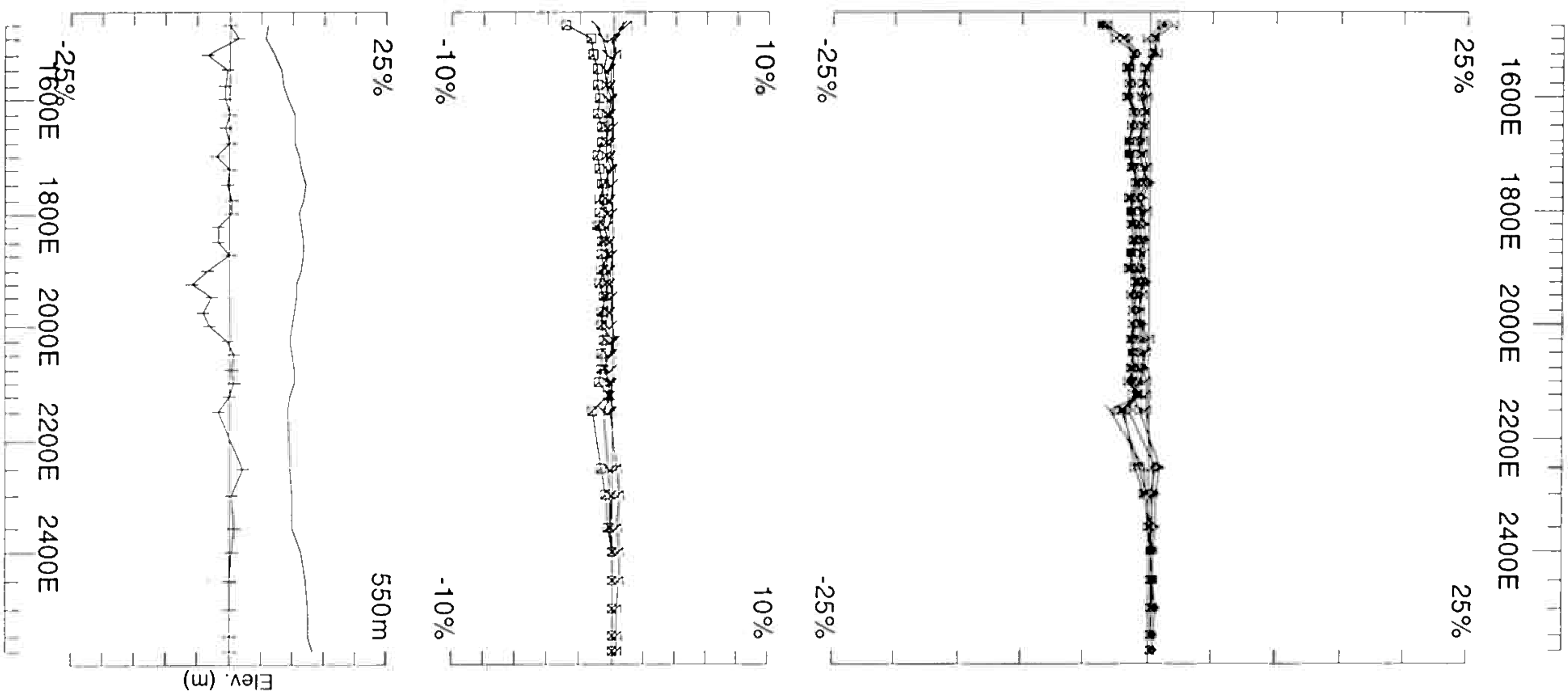
Loop: 06 Line: 4000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



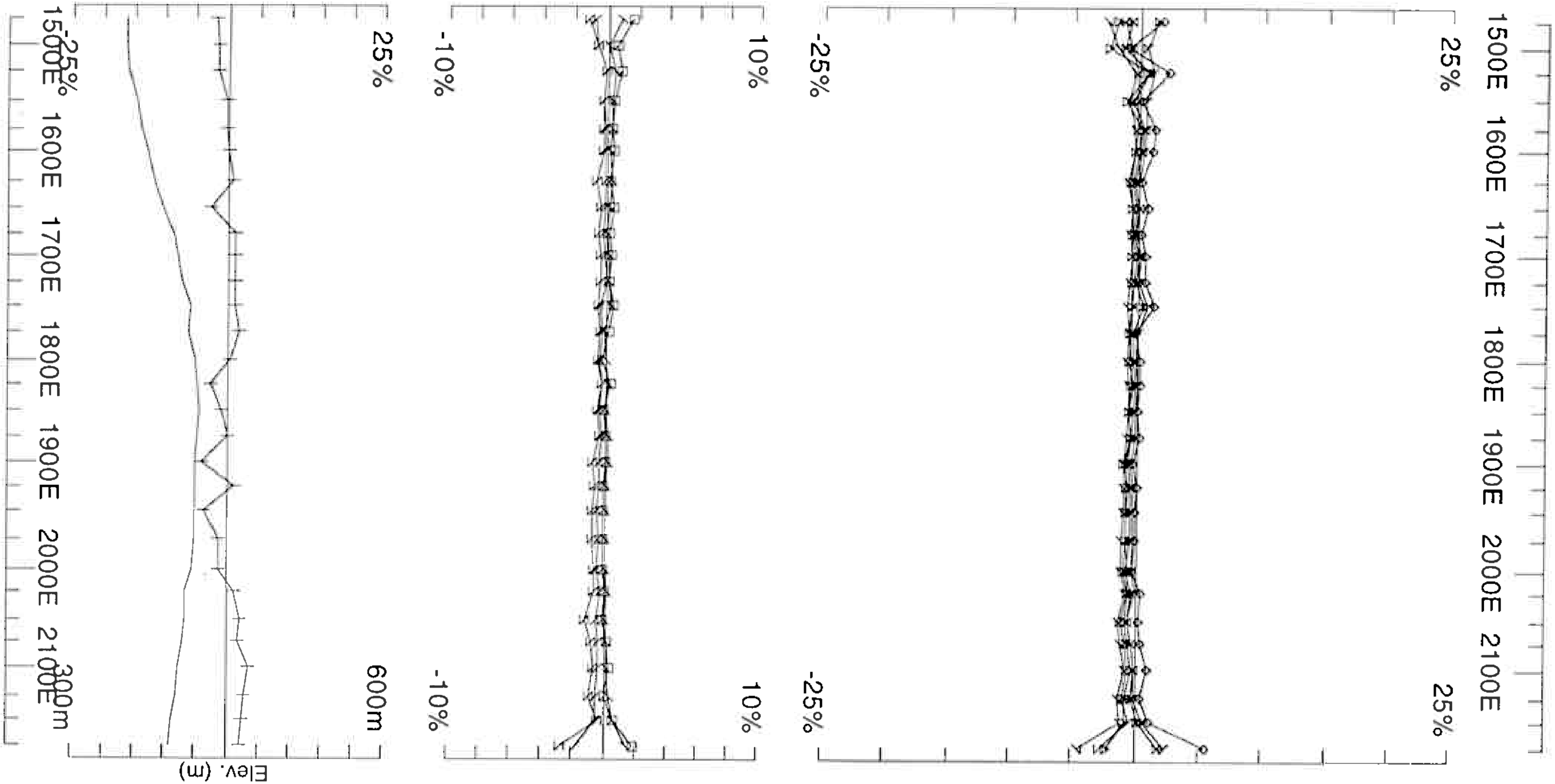
Loop: 06 Line: 4100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



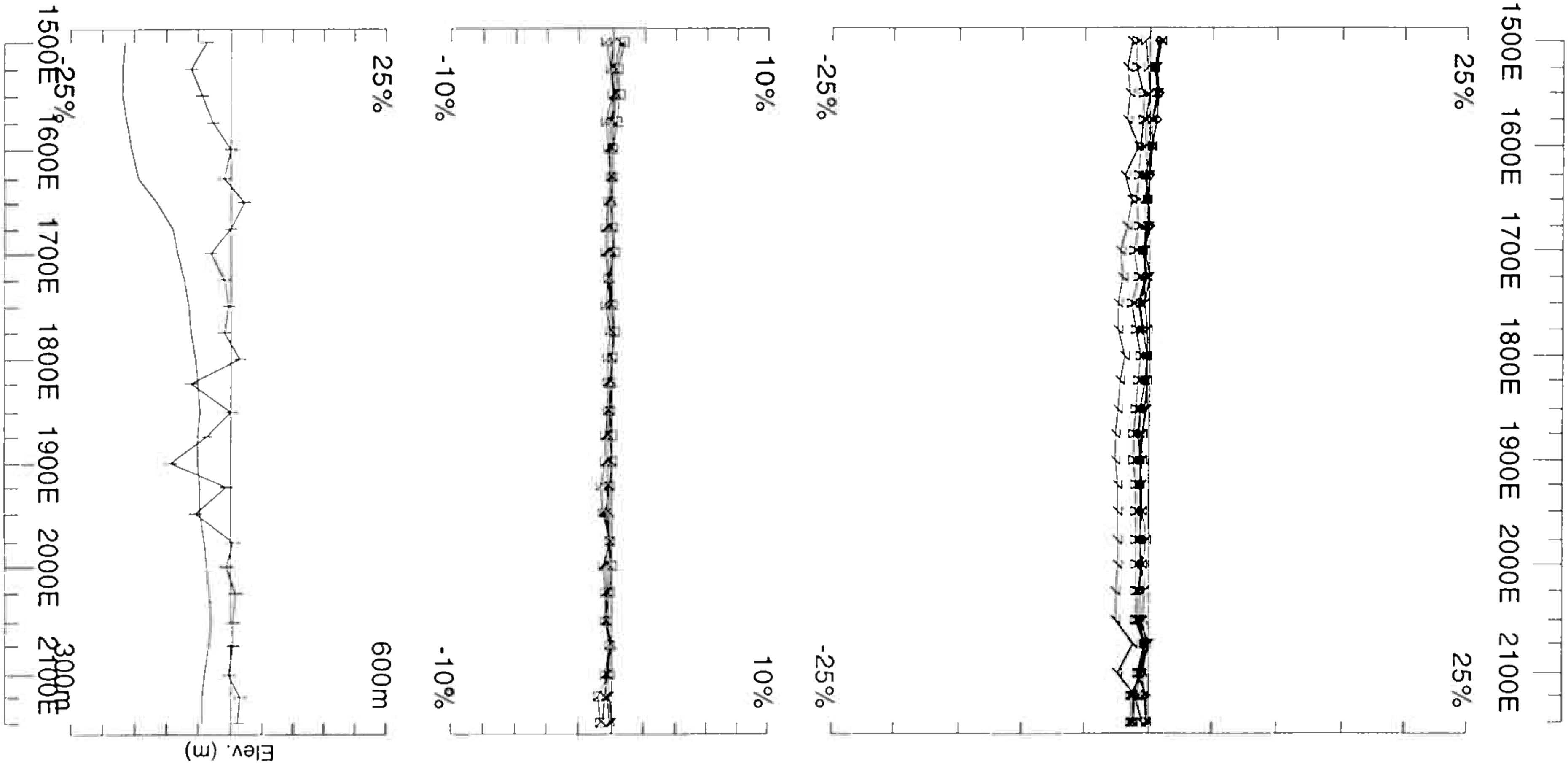
Loop: 06 Line: 4200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 06 Line: 4300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Plotted : 13/6/6



Loop: 06 Line: 4400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 06 Line: 4500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 29/5/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: In-loop Profiles

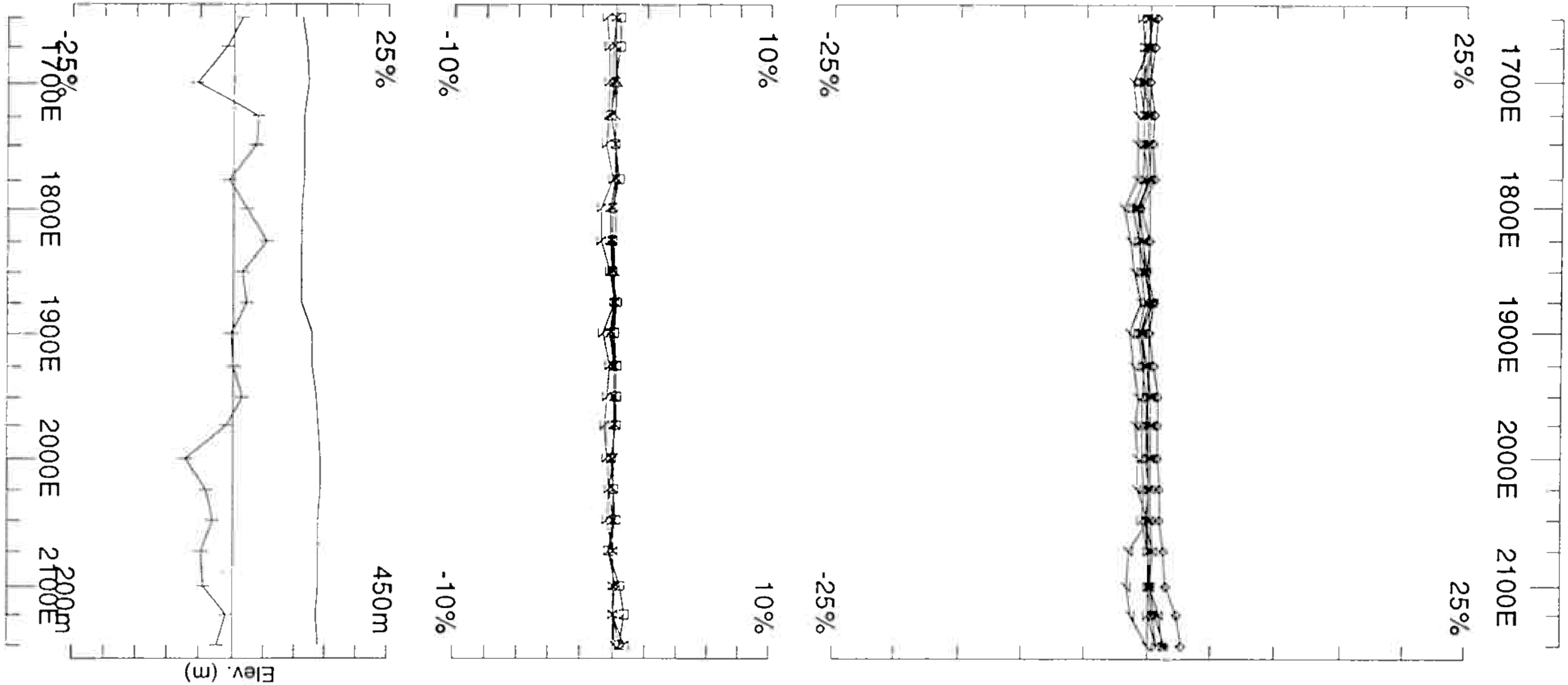
Hz
@3.251 Hz frequency

point norm
@~ centre of the loop
(x,y,z) = (1825E,4100N, 380 m.a.s.l.)

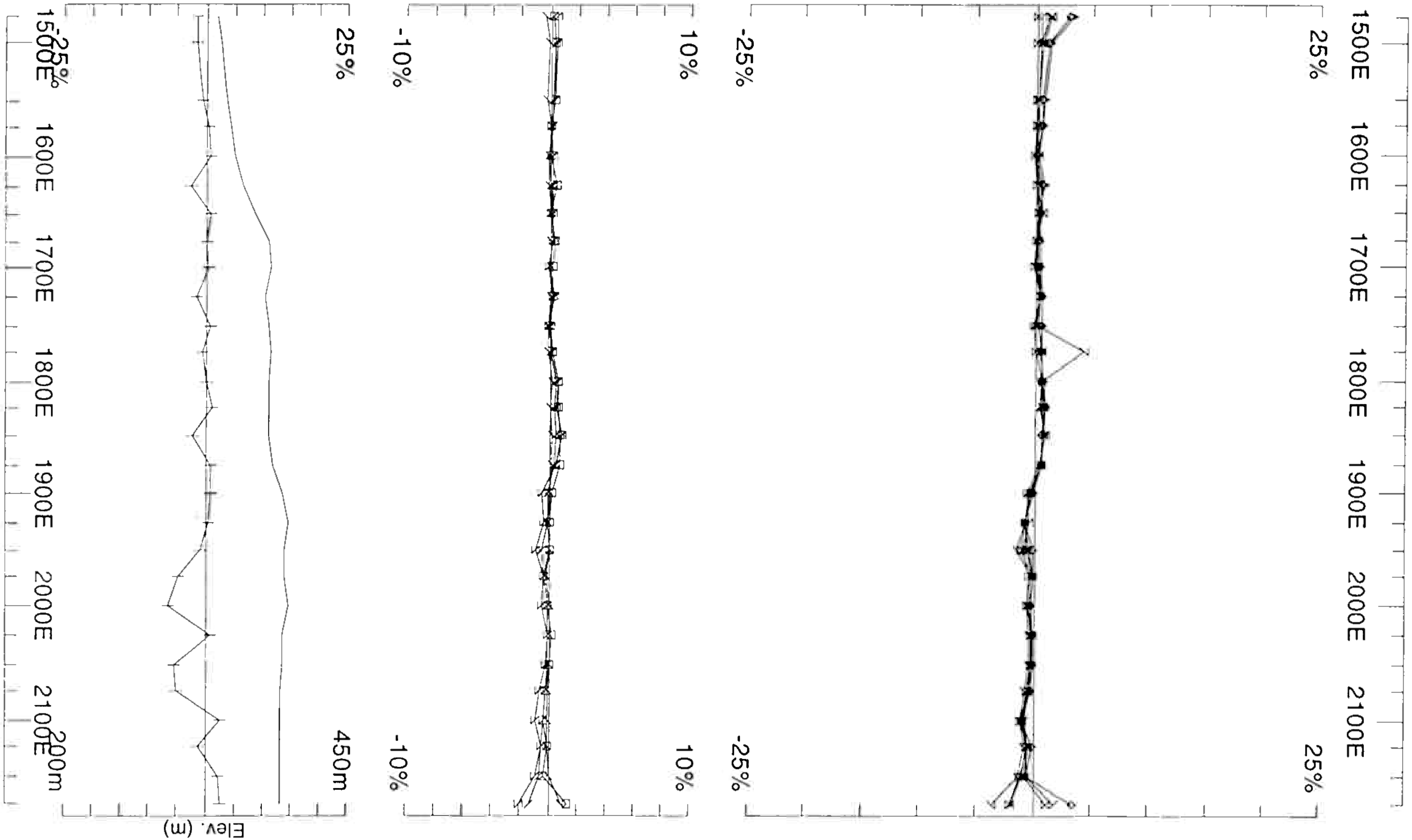
Ch1 reduced

In-Loop 06 Langedalen	Line 3600N	2225E - 3025E	800m	1:5000
	Line 3700N	1650E - 2150E	500m	1:5000
	Line 3800N	1475E - 2175E	700m	1:5000
	Line 3900N	1650E - 2150E	500m	1:5000
	Line 4000N	1475E - 2175E	700m	1:5000
	Line 4100N	1500E - 2150E	650m	1:5000
	Line 4200N	1500E - 2150E	650m	1:5000
	Line 4300N	1475E - 2150E	675m	1:5000
	Line 4400N	1475E - 2175E	700m	1:5000
	Line 4500N	1500E - 2150E	650m	1:5000
	Langedalen	In-Loop 06 Total	6525m	

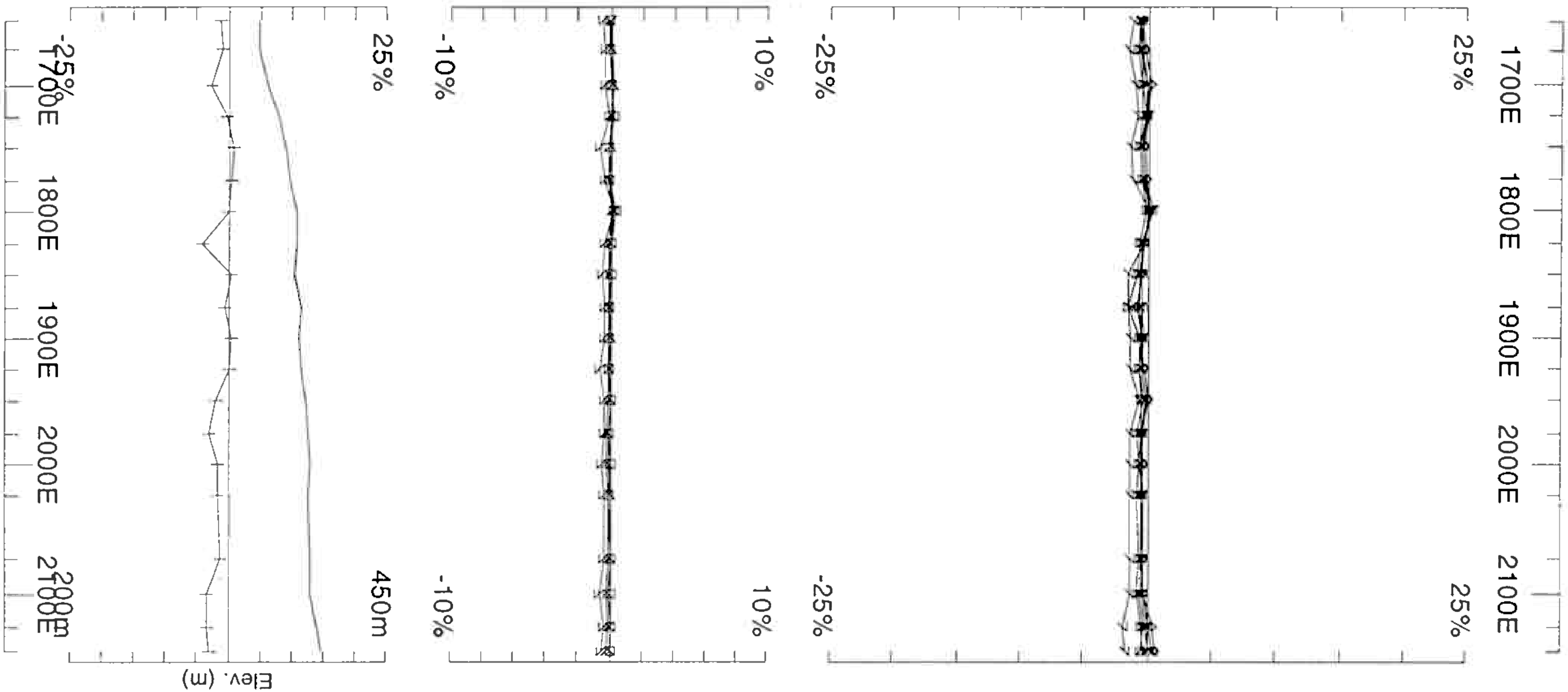
Loop 06 - point norm



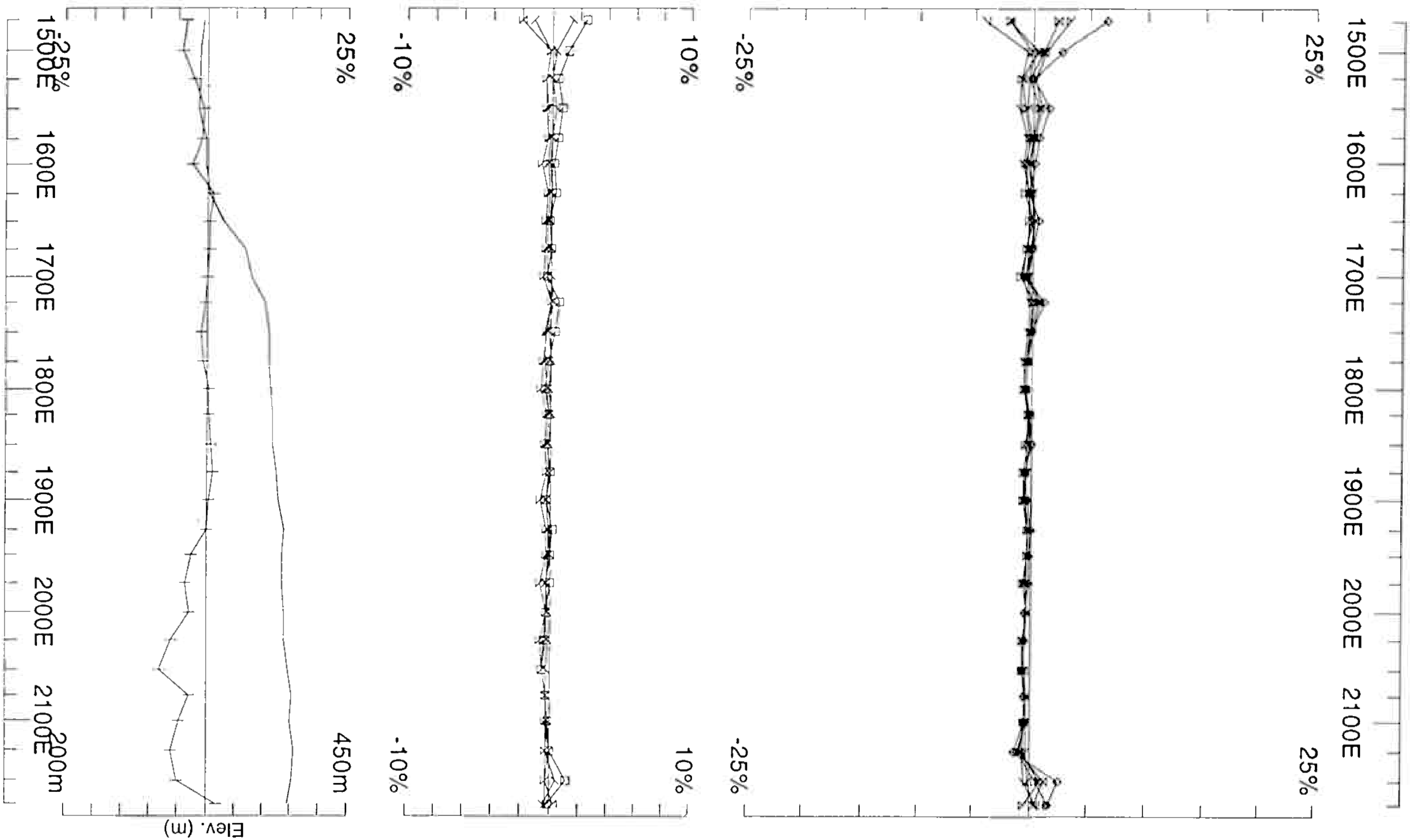
Loop: 06 Line: 3700N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6



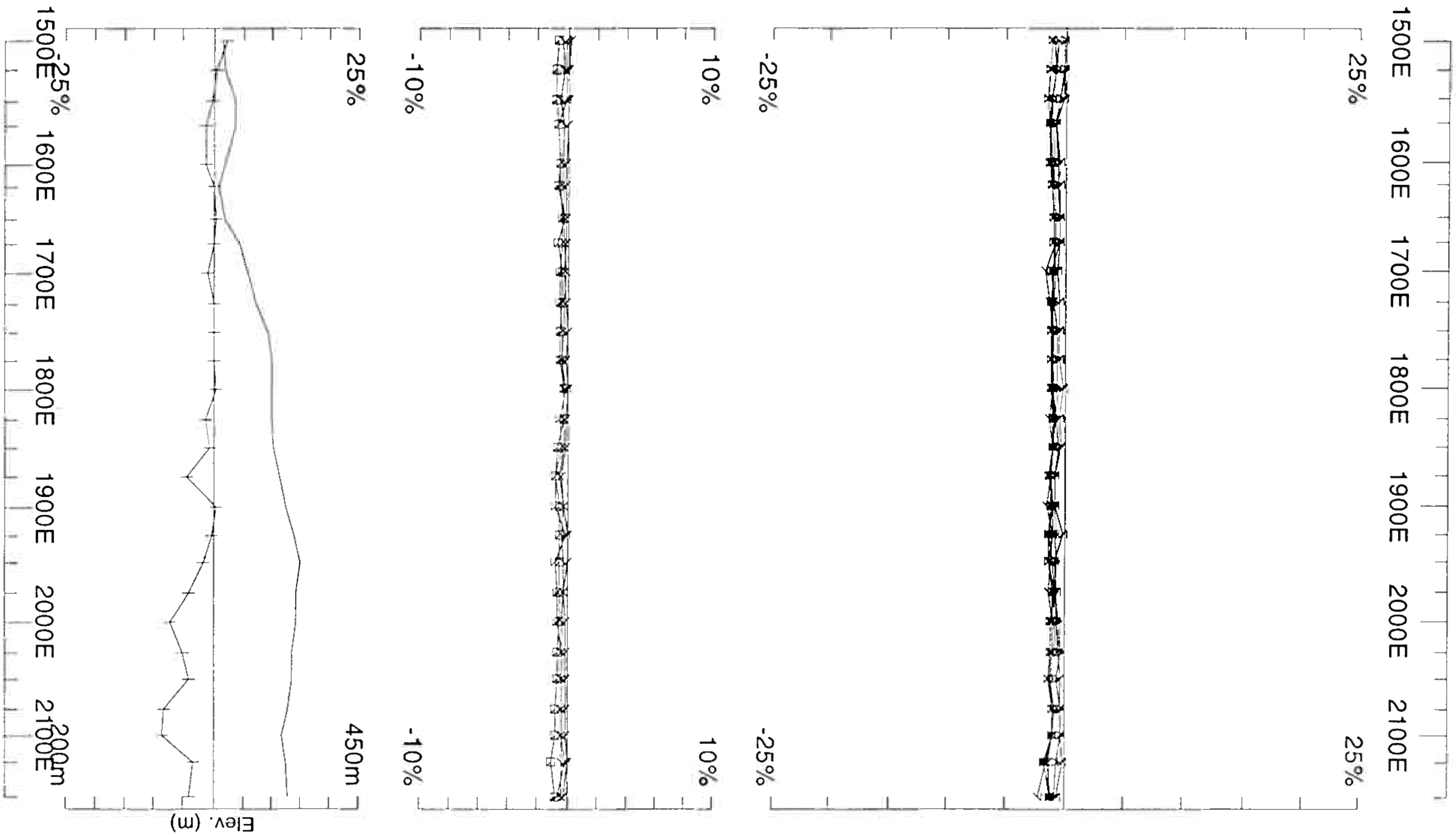
Loop: 06 Line: 3800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



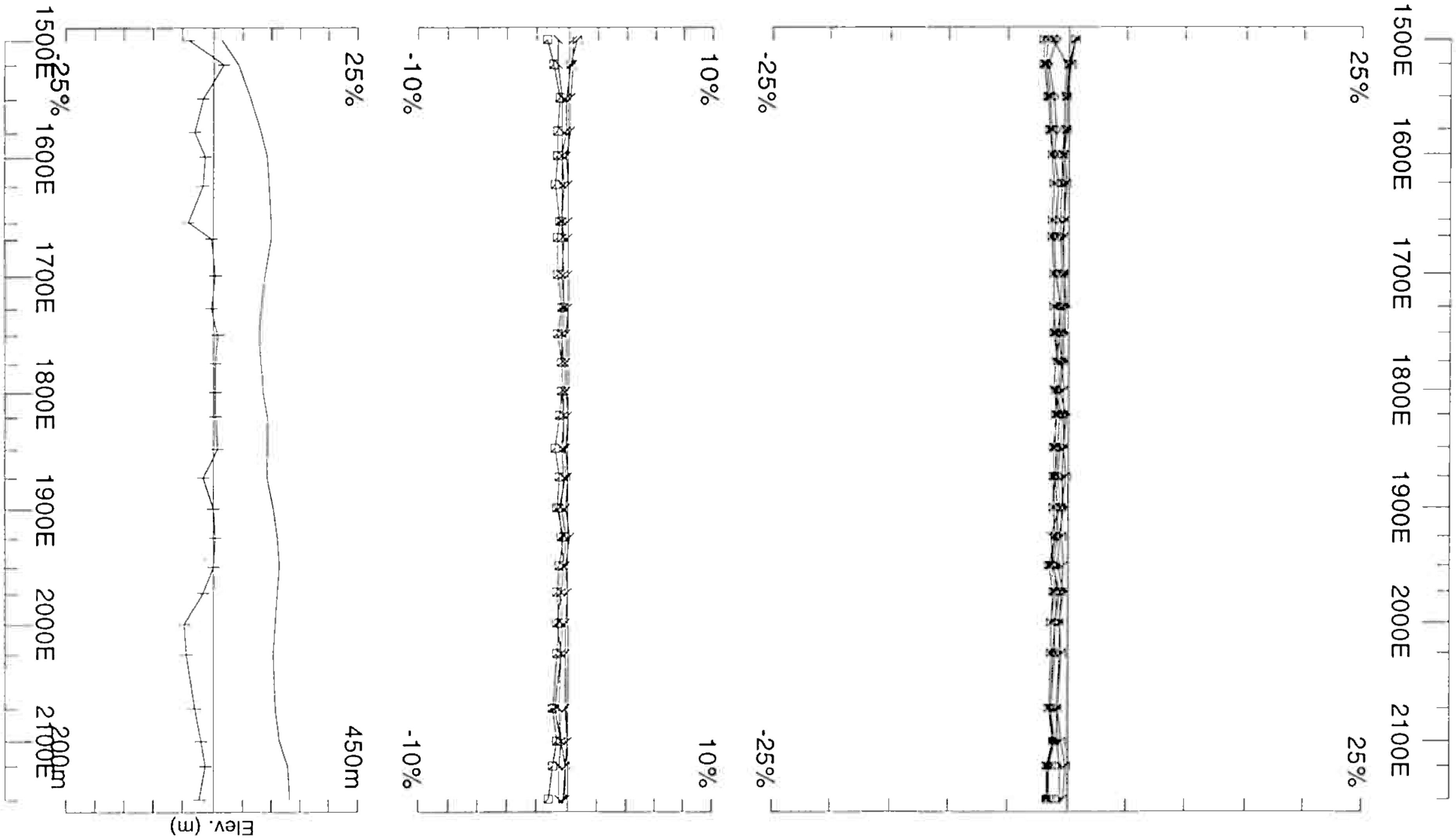
Loop: 06 Line: 3900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6



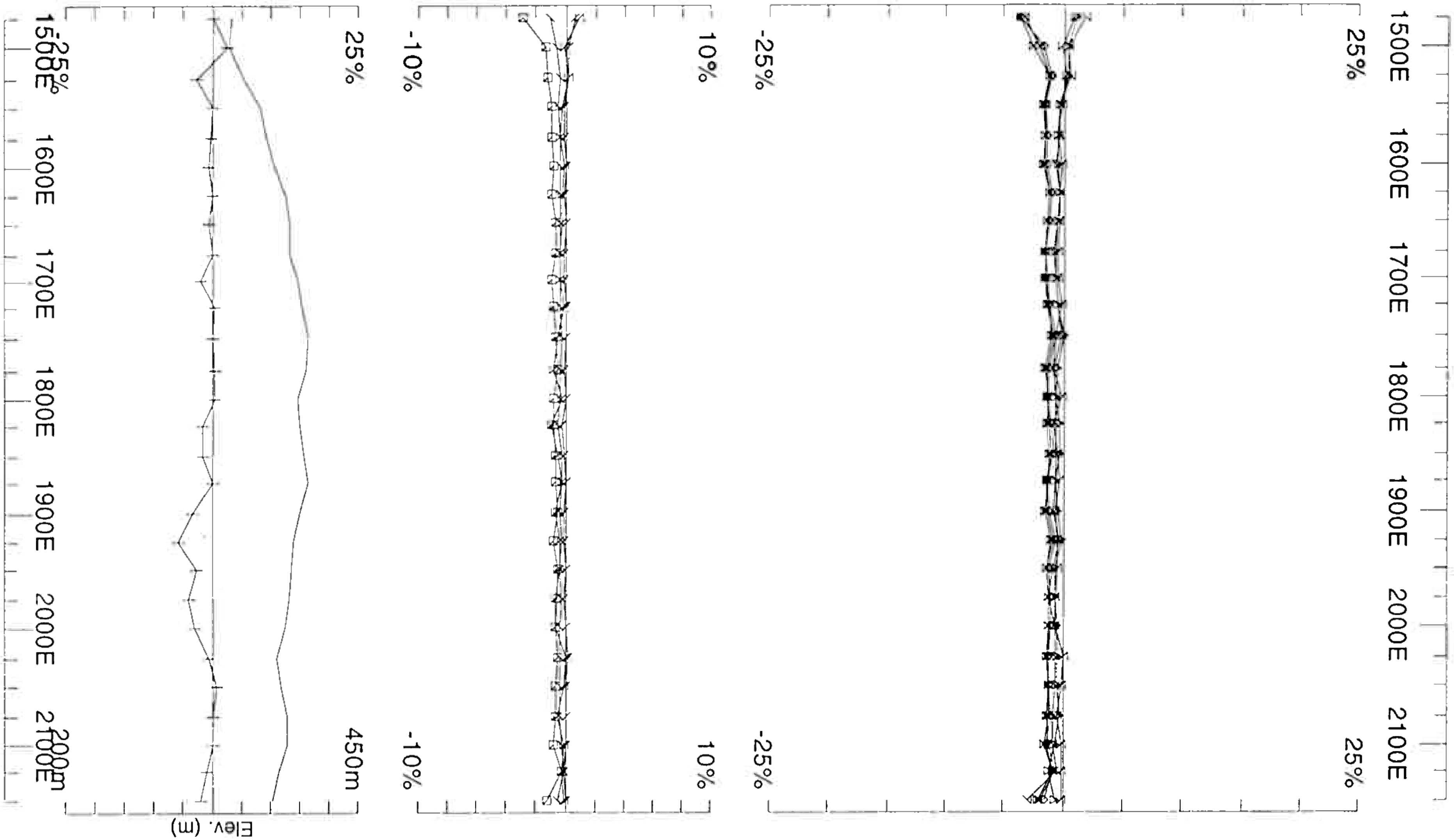
Loop: 06 Line: 4000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



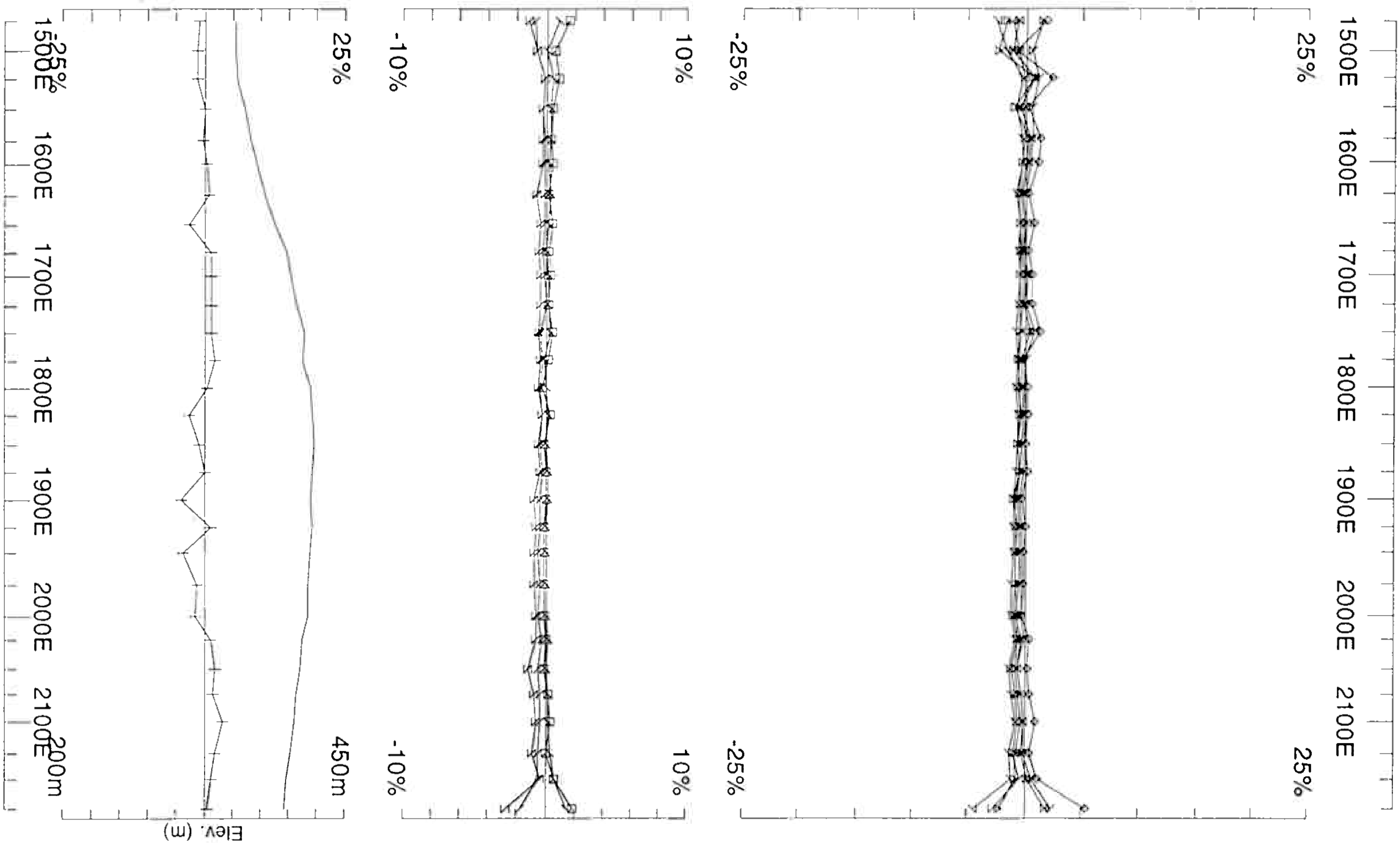
Loop: 06 Line: 4100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



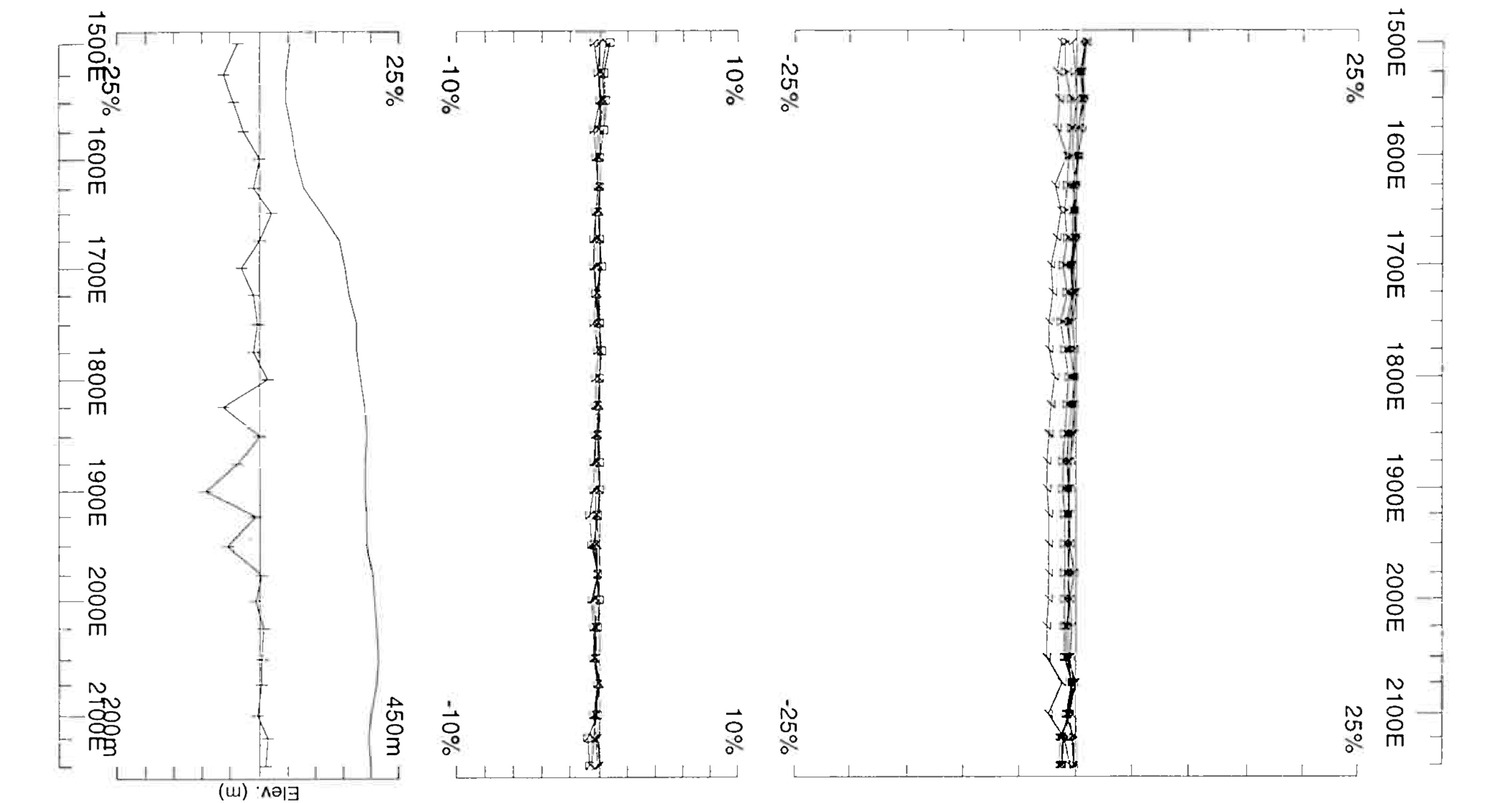
Loop: 06 Line: 4200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 3/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4500N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (1825,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 4/4/6 Reduced : 2/6/6 Plotted : 13/6/6

Langedalen Grid

Loop 06: Off-loop Profiles

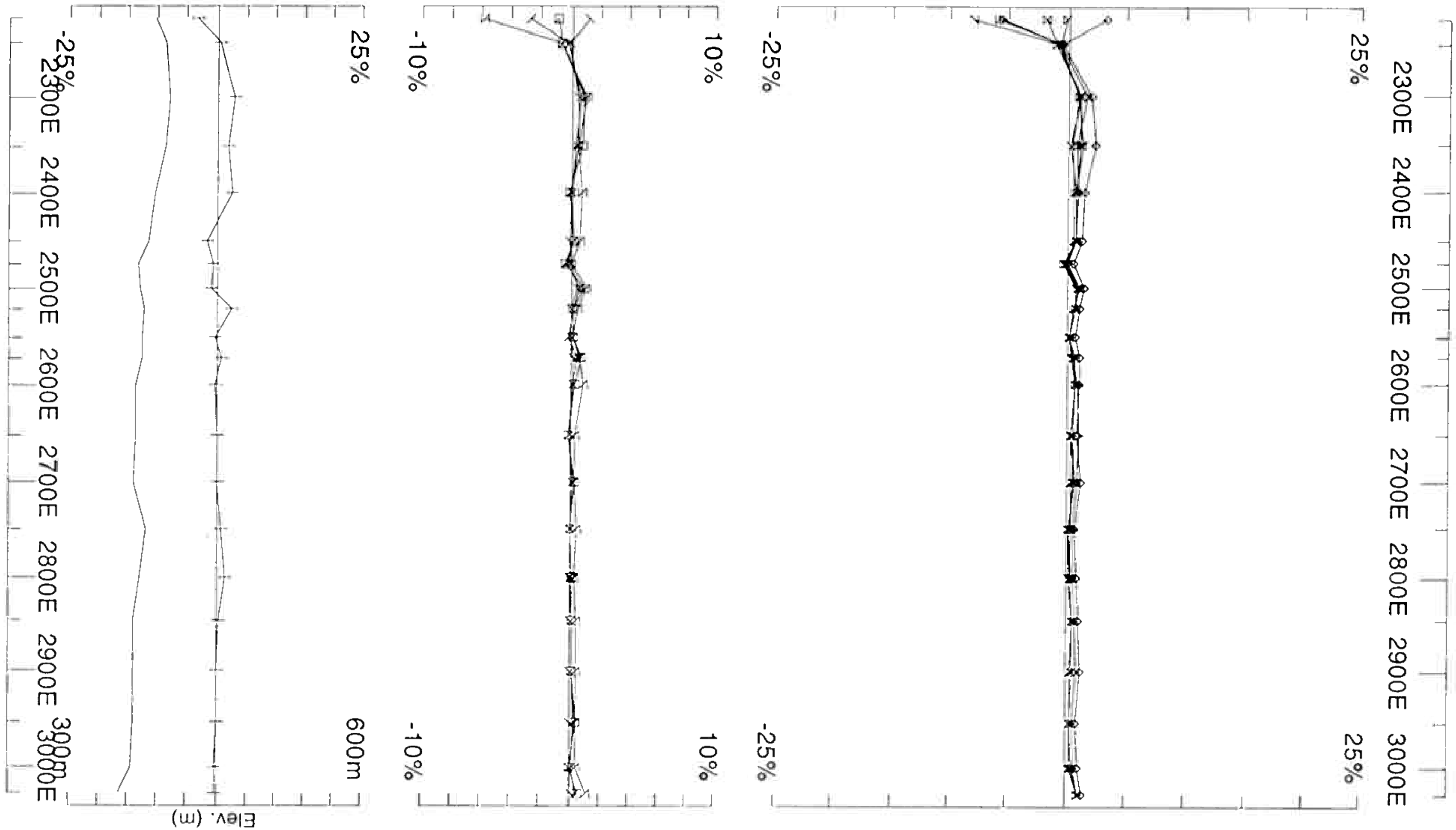
Hz
@3.251 Hz frequency

point norm
@ ~300m outside the loop centre
(x,y,z) = (2500E,4100N, 405 m.a.s.l.)

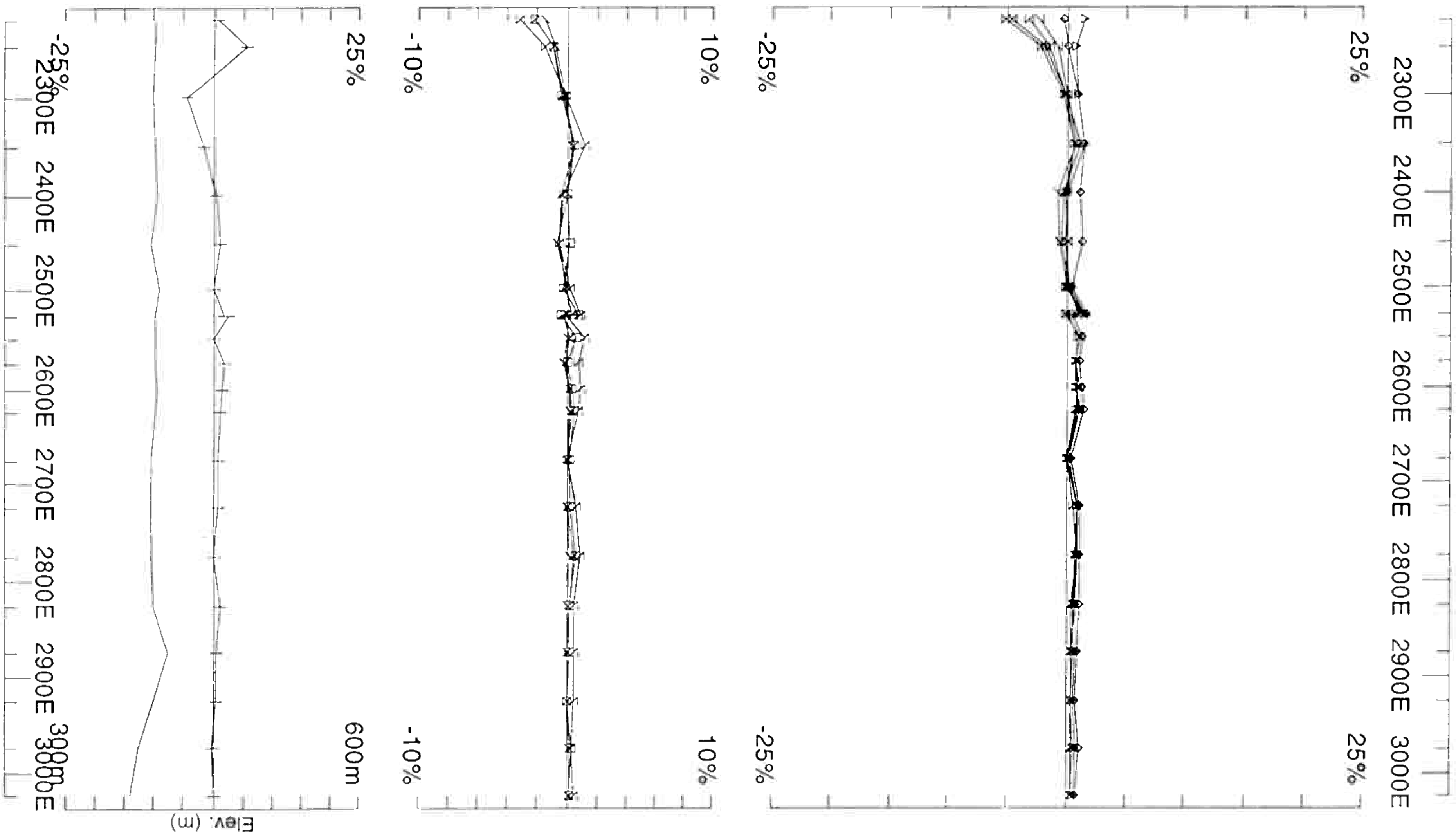
Ch1 reduced

Off-Loop 06 Langedalen	Line 3800N	2225E - 3025E	800m	1:6000
	Line 4000N	2250E - 3025E	775m	1:6000
	Line 4100N	2250E - 2900E	650m	1:6000
	Line 4200N	2250E - 2750E	500m	1:6000
	Line 4300N	2250E - 2575E	325m	1:6000
	Langedalen	Off-Loop 06 Total	3050m	

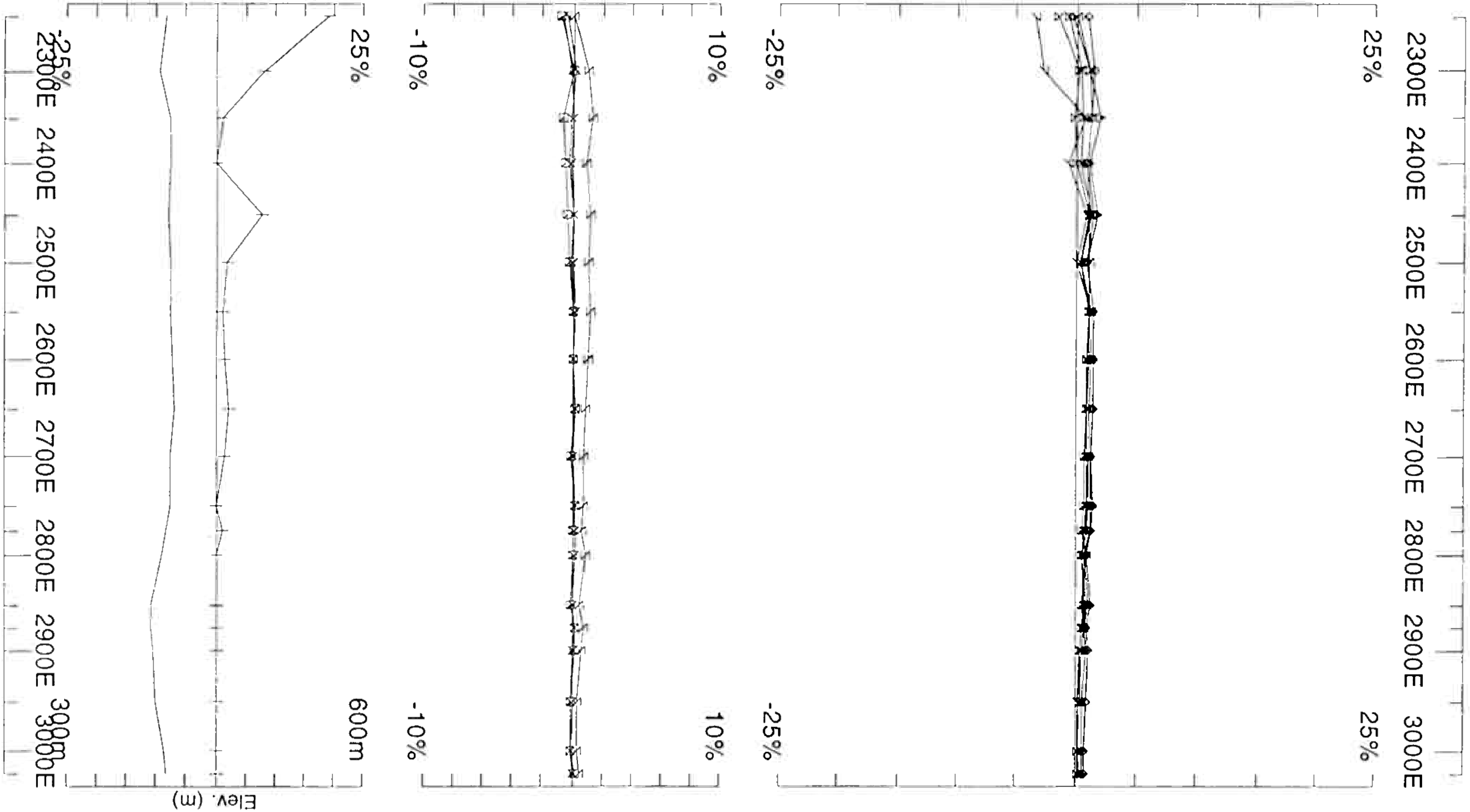
Loop 06 - point norm



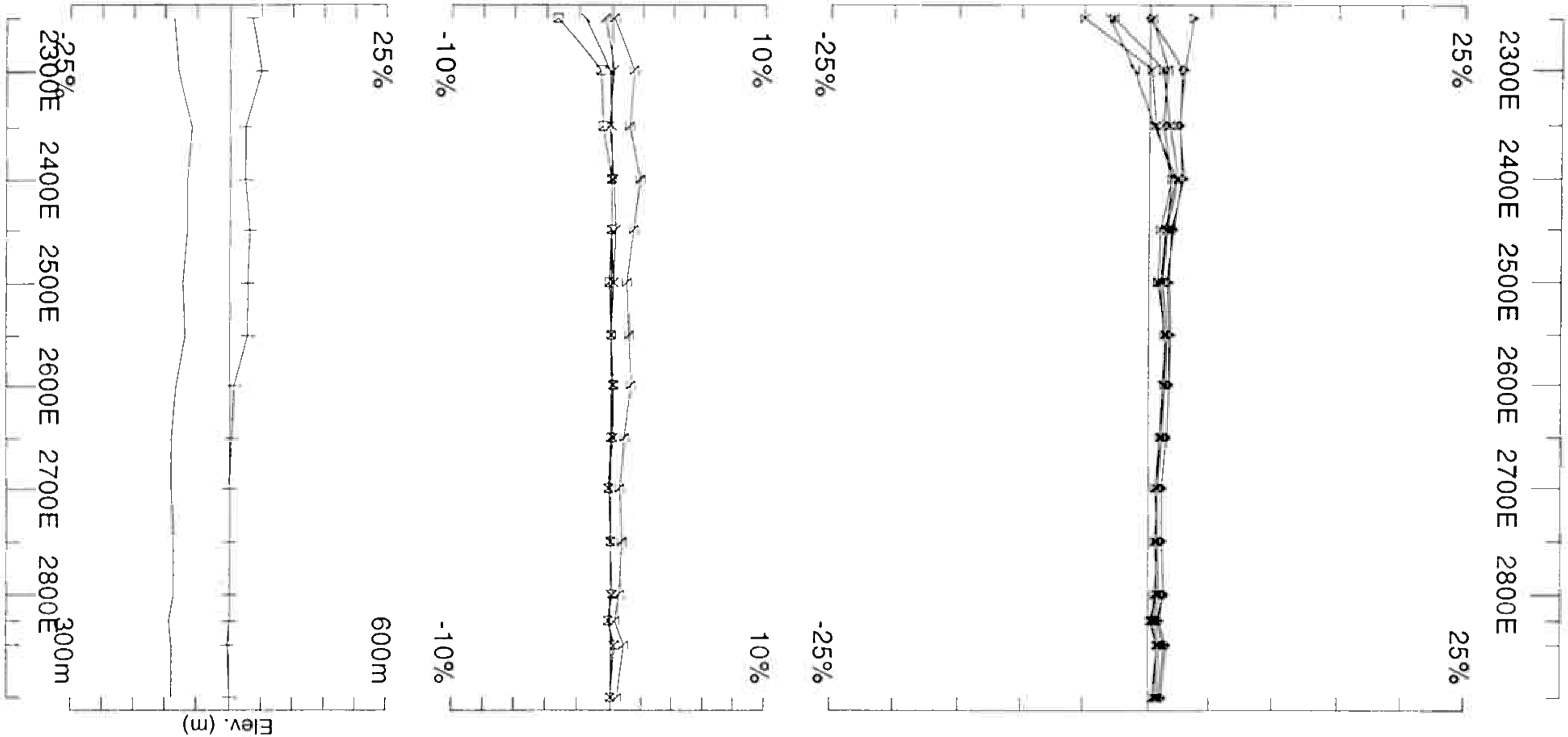
Loop: 06 Line: 3600N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 3800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4000N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6

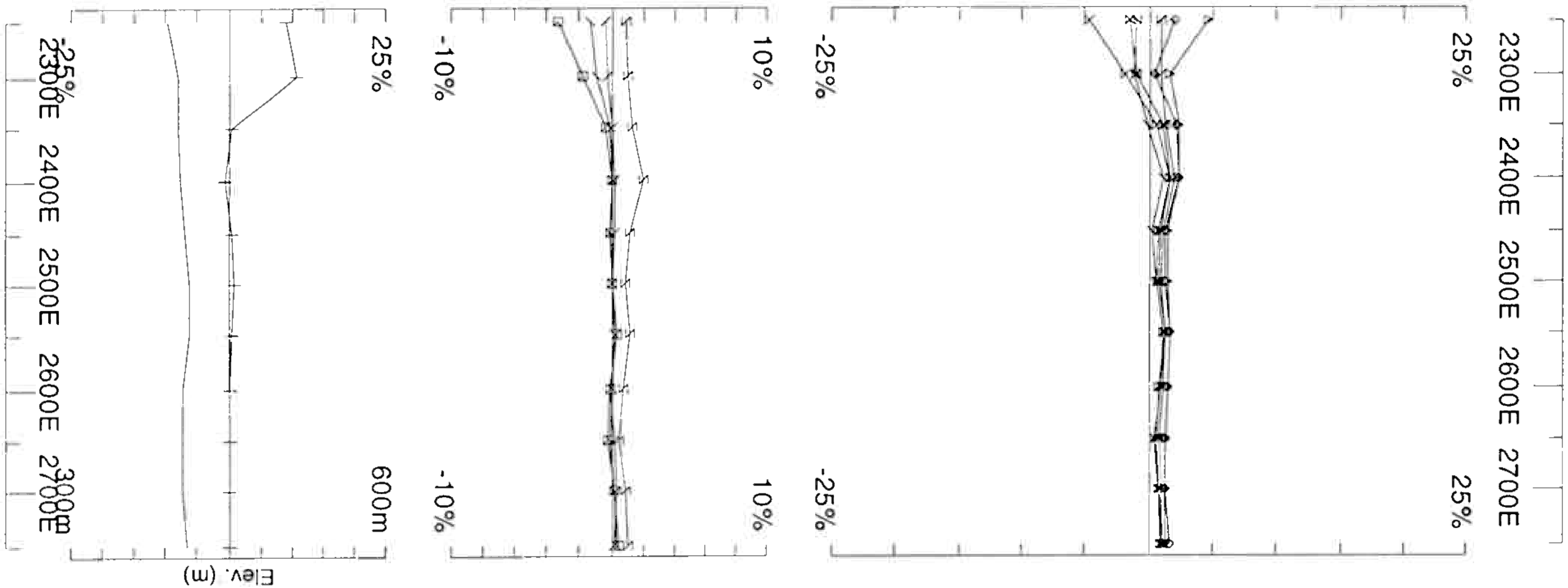


Loop: 06
Line: 4100N
Compt: Hz

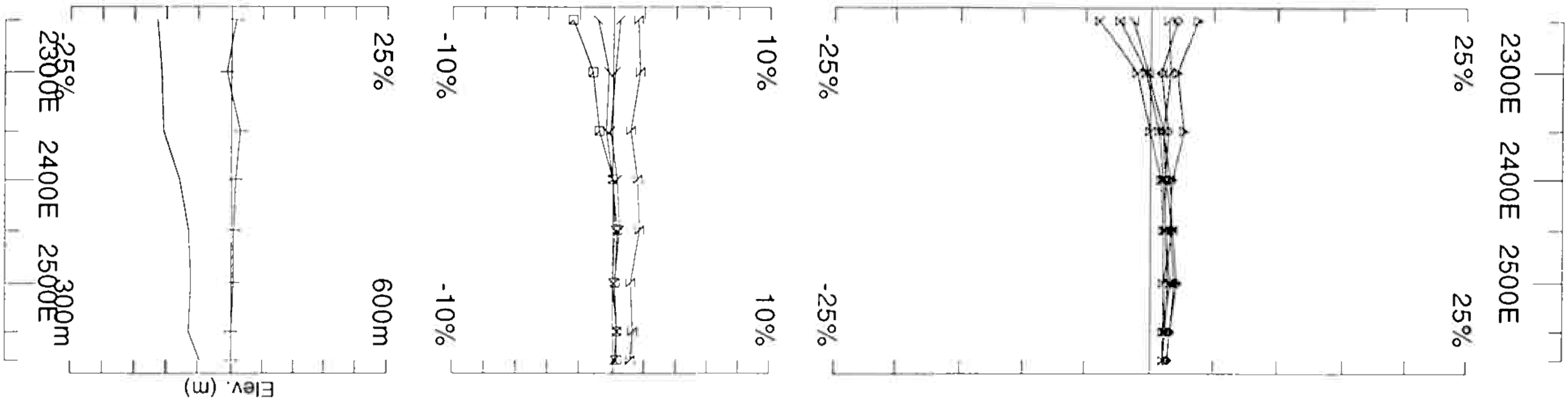
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(2500,4100,405)
Base Freq. 3.251 Hz

UTEM Survey at: Langedalen Grid
For: A/S Sulfidmalm

LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE
Job 0612
Surveyed : 2/4/6
Reduced : 2/6/6
Plotted : 13/6/6



Loop: 06 Line: 4200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6



Loop: 06 Line: 4300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (2500,4100,405) Base Freq. 3.251 Hz	UTEM Survey at: Langedalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 2/4/6 Reduced : 2/6/6 Plotted : 13/6/6

Storebraten Grid

Loop 07

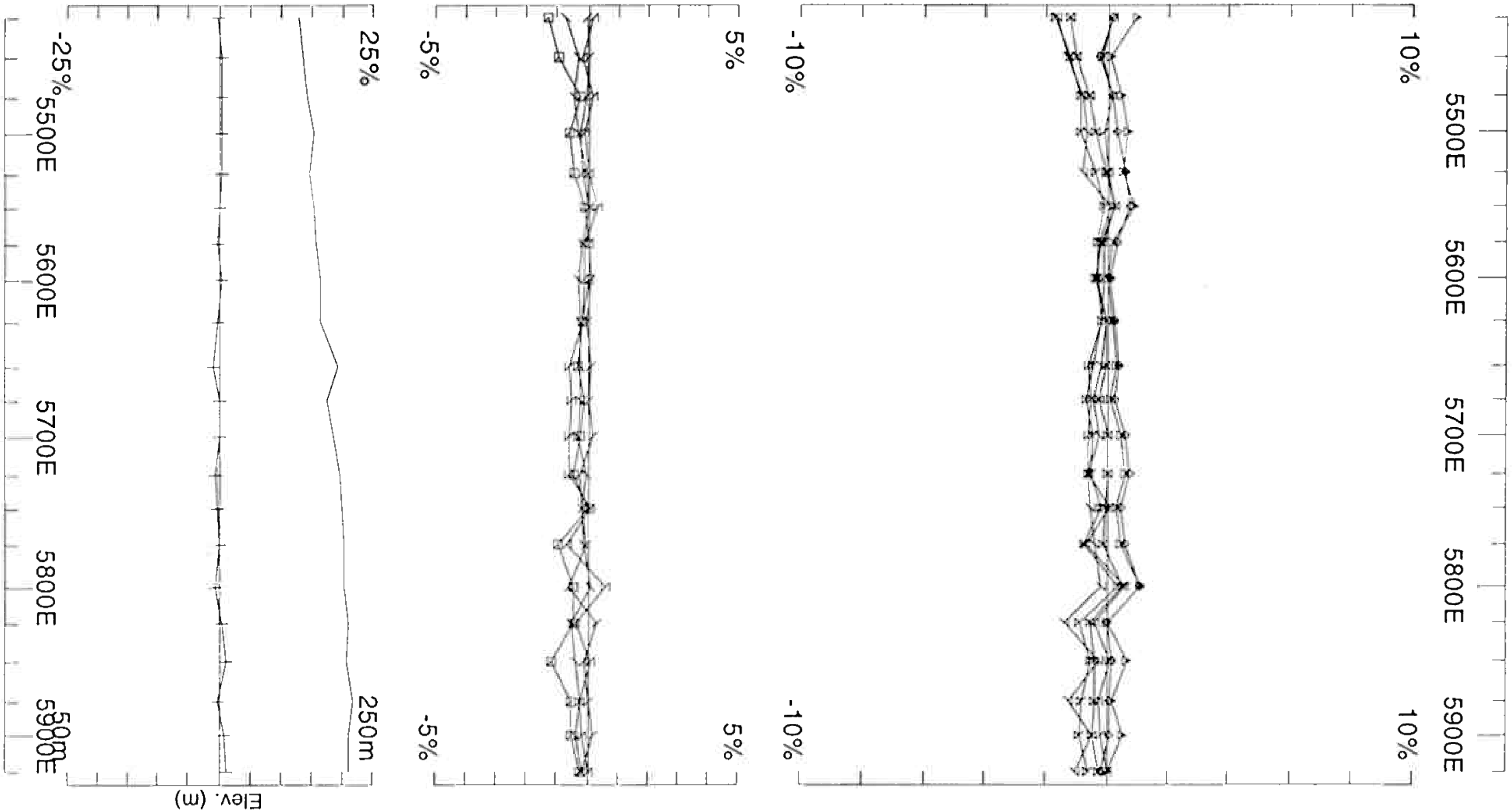
Hz
@3.251 Hz frequency

point norm
@ ~centre of the loop
(x,y,z) = (5700E,6000N, 210 m.a.s.l.)

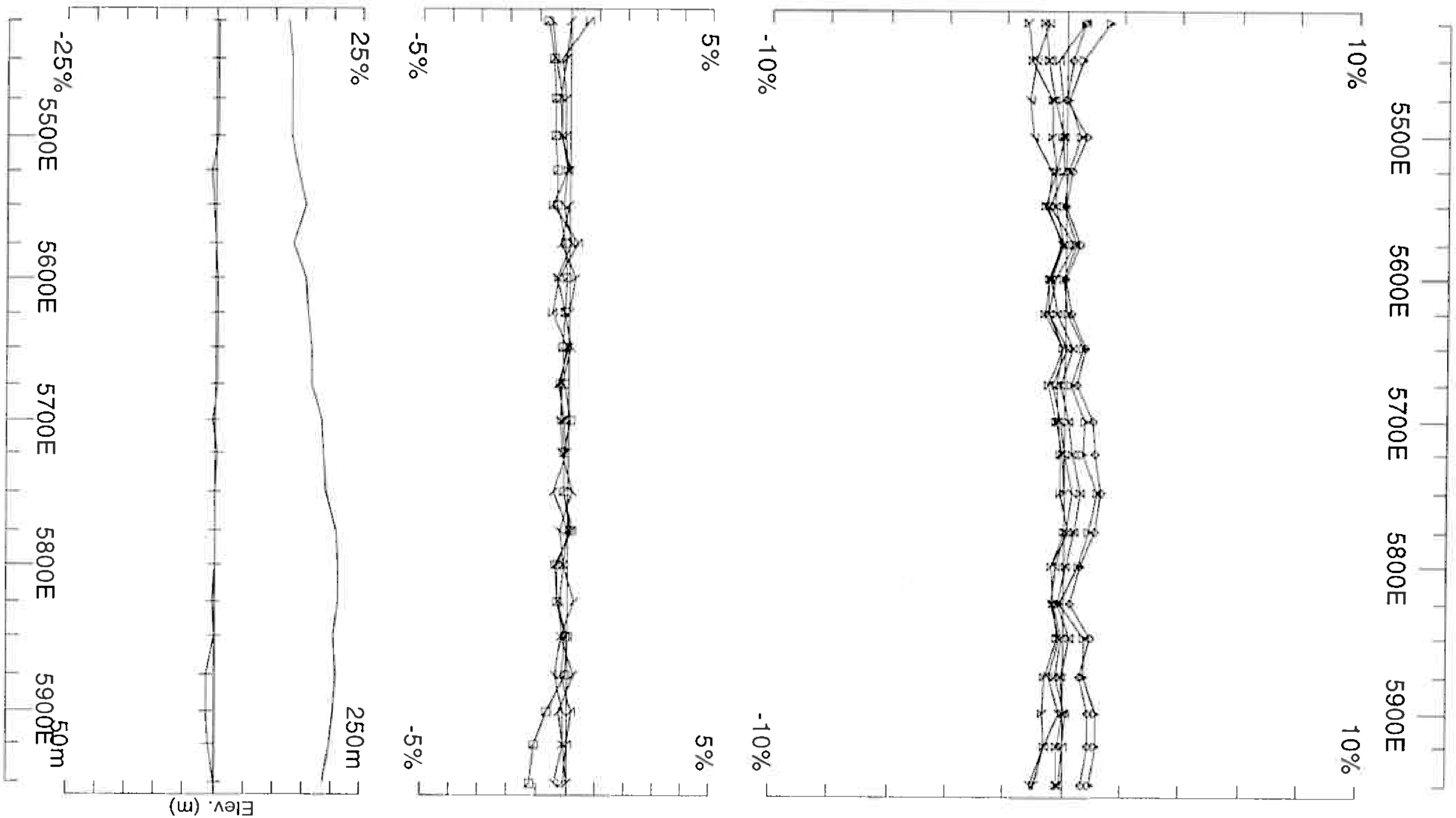
Ch1 reduced

Loop 07 Storebraten	Line 5800N	5425E - 5925E	500m	1:4000
	Line 5900N	5425E - 5950E	525m	1:4000
	Line 5950N	5425E - 5950E	525m	1:4000
	Line 6000N	5450E - 5950E	500m	1:4000
	Line 6050N	5425E - 5975E	550m	1:4000
	Line 6100N	5425E - 5950E	525m	1:4000
	Line 6200N	5425E - 5950E	525m	1:4000
	Storebraten	Loop 07 Total	3650m	

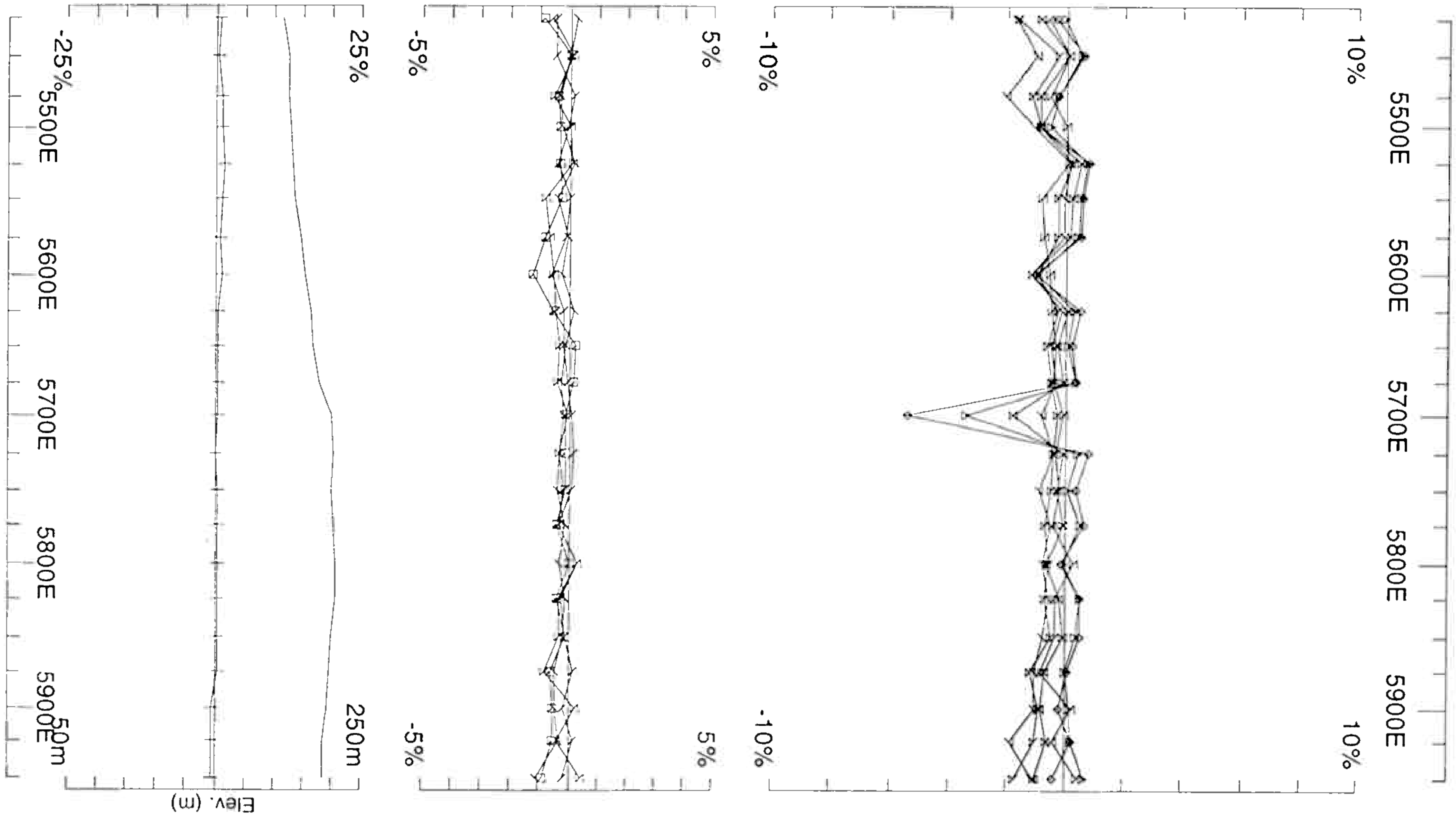
Loop 07 - point norm



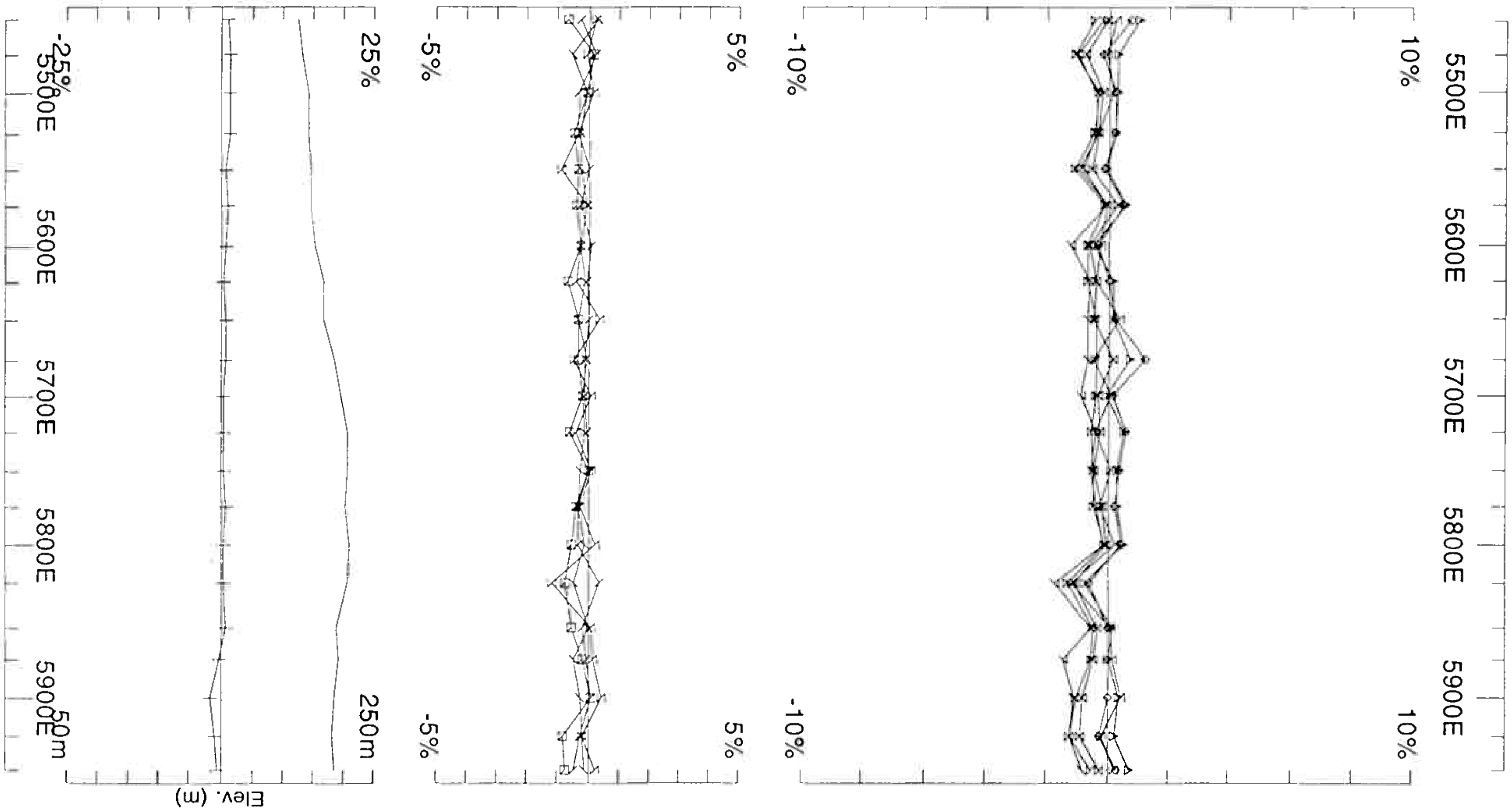
Loop: 07 Line: 5800N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 5900N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 5950N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07
Line: 6000N
Compt: Hz

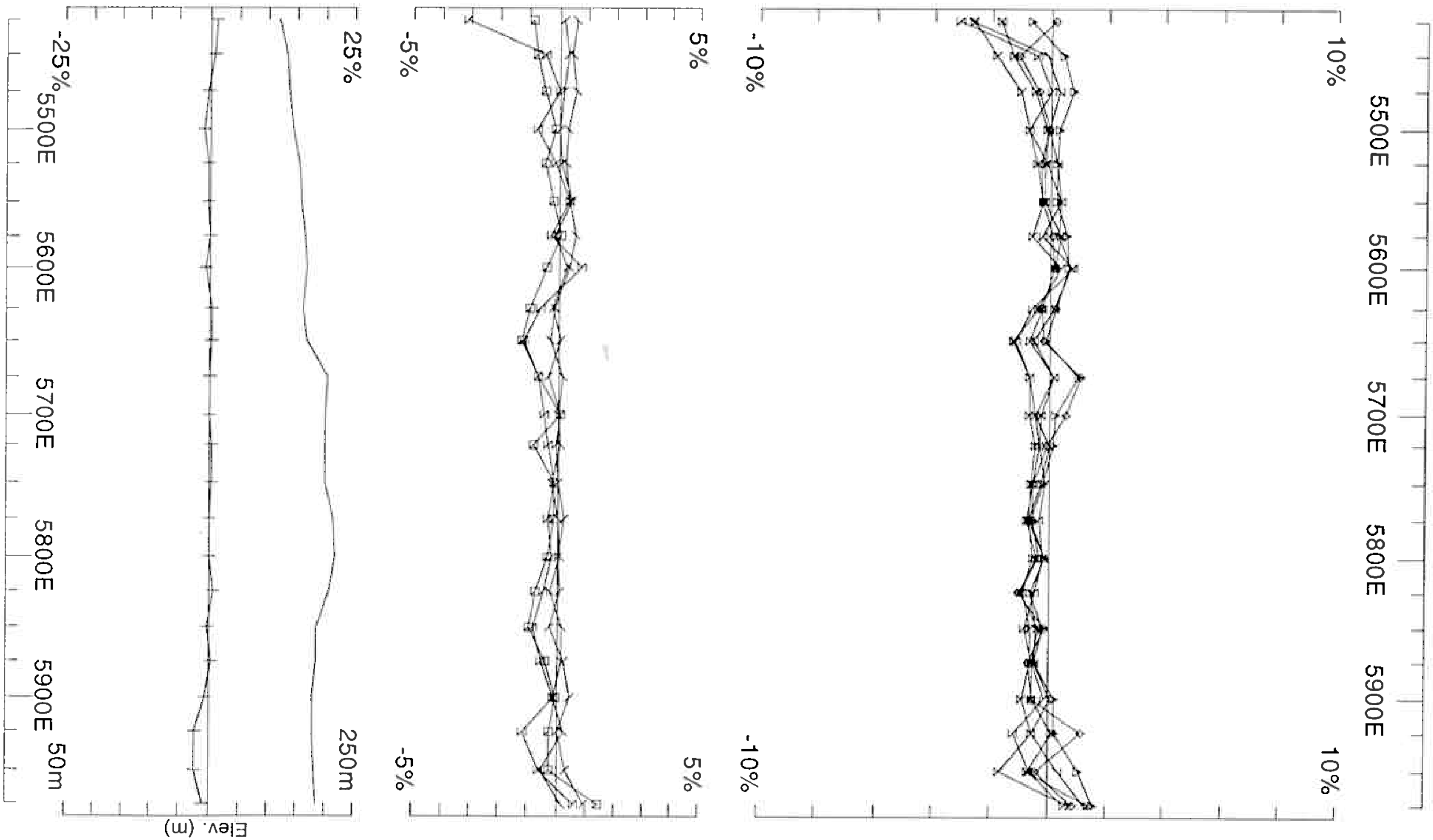
Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(5700,6000,210)
Base Freq. 3.251 Hz

UTEM Survey at: Storebraten Grid
For: A/S Sulfidmalm

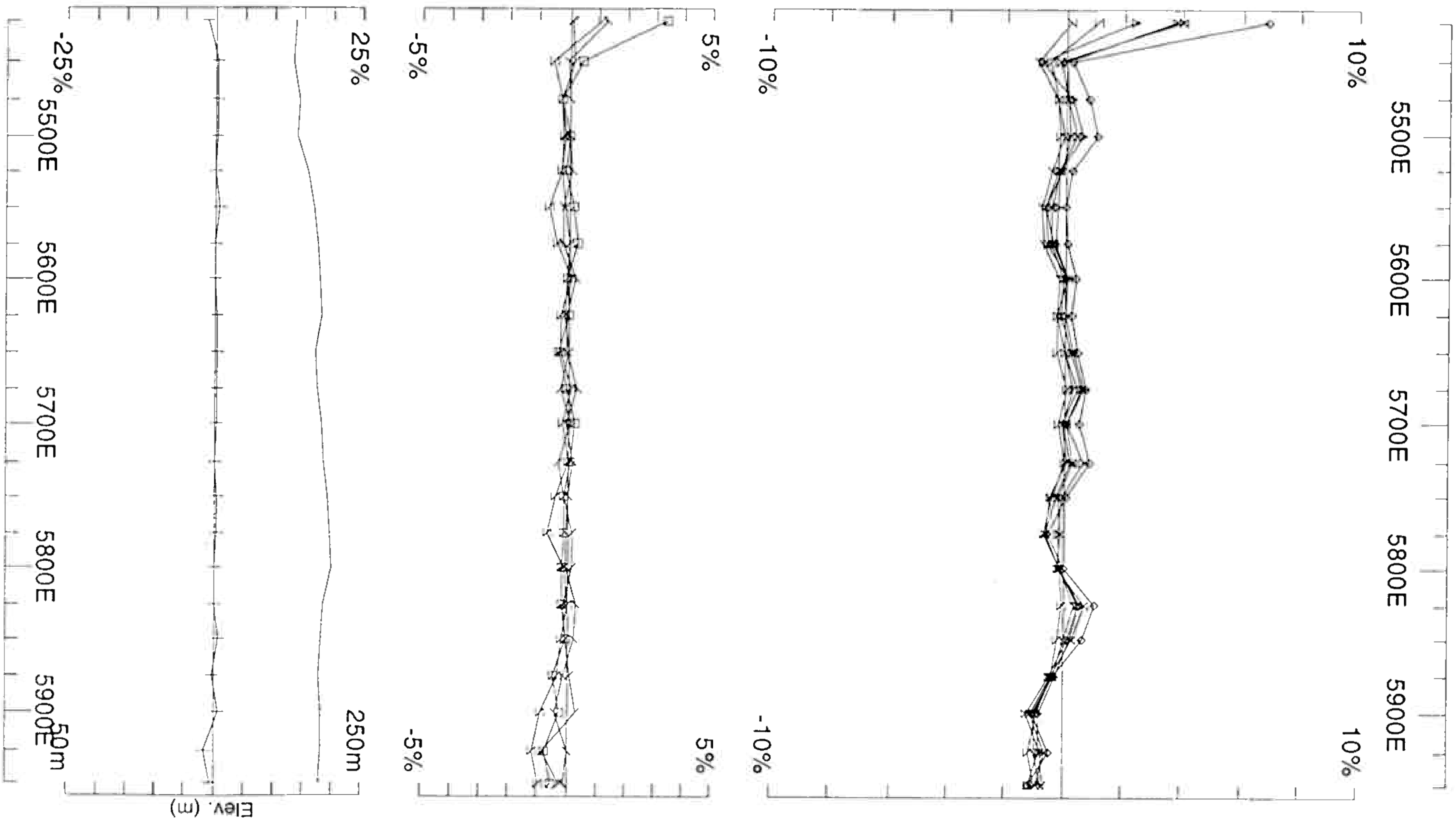
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Job 0612

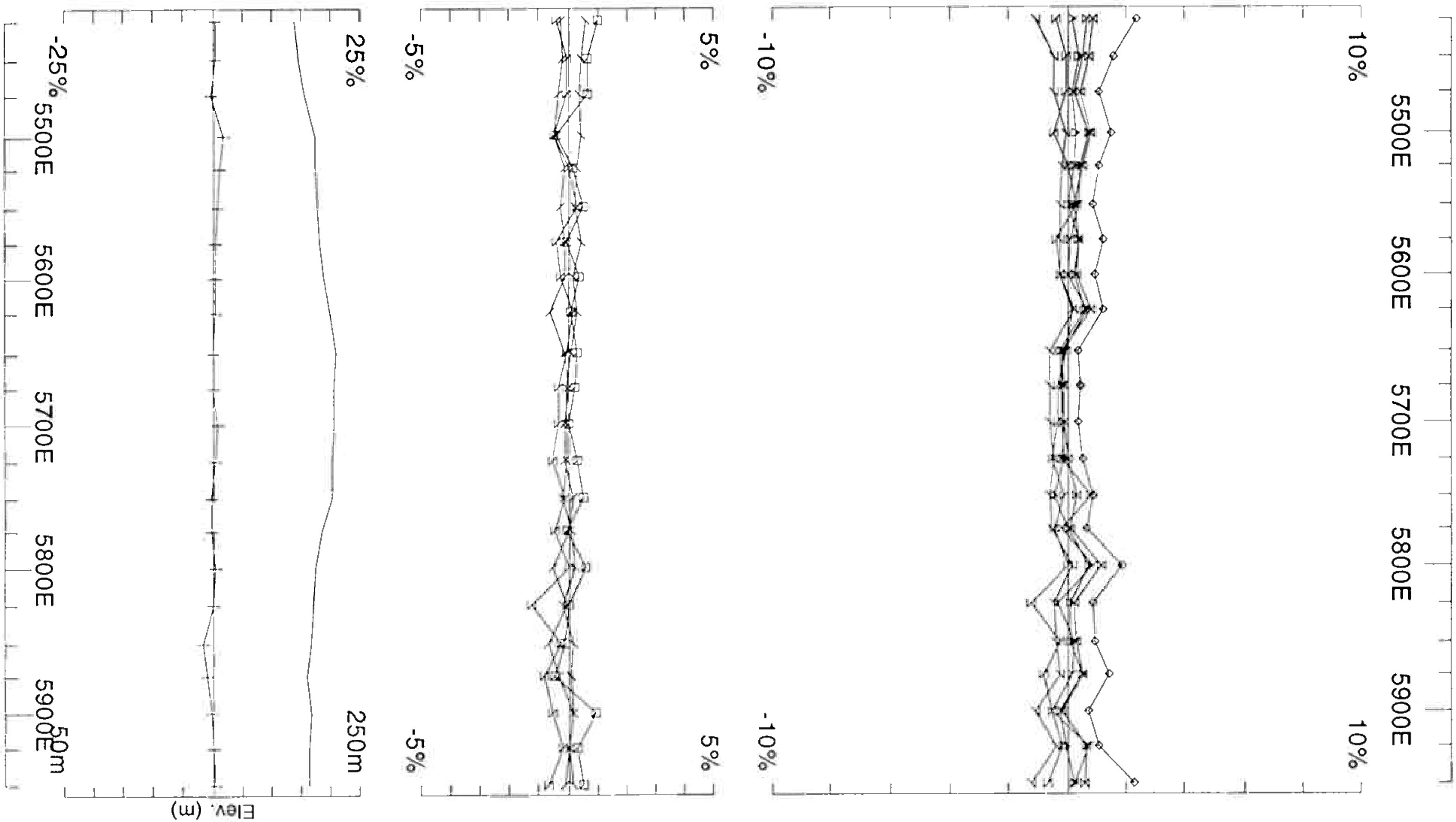
Surveyed : 5/4/6
Reduced : 29/5/6
Plotted : 13/6/6



Loop: 07 Line: 6050N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 6100N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 07 Line: 6200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5700,6000,210) Base Freq. 3.251 Hz	UTEM Survey at: Storebraten Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 5/4/6 Reduced : 29/5/6 Plotted : 13/6/6

Soknadalen Grid

Loop 08

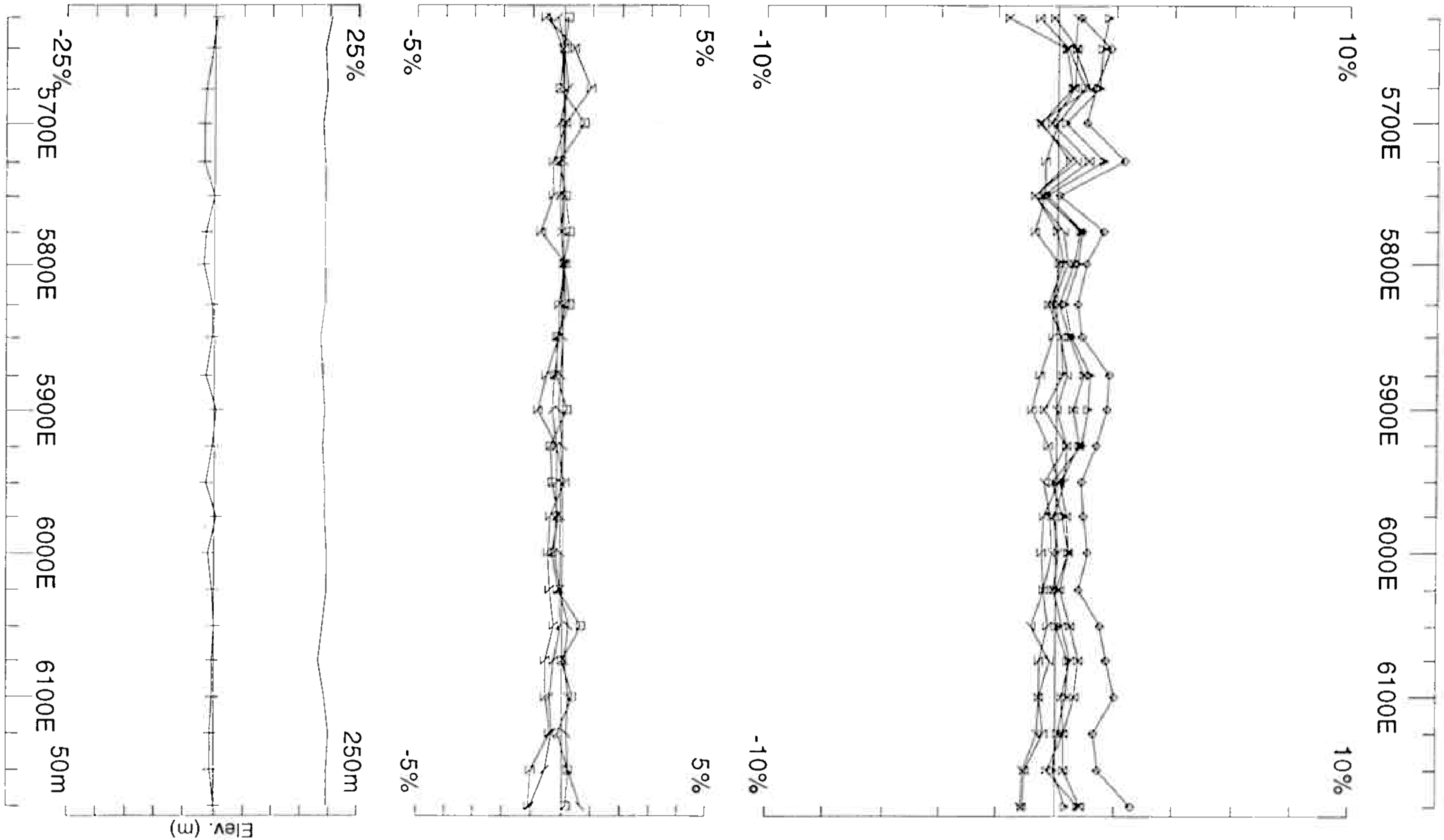
Hz
@3.251 Hz frequency

point norm
@ ~centre of the loop
(x,y,z) = (5900E,4330N, 210 m.a.s.l.)

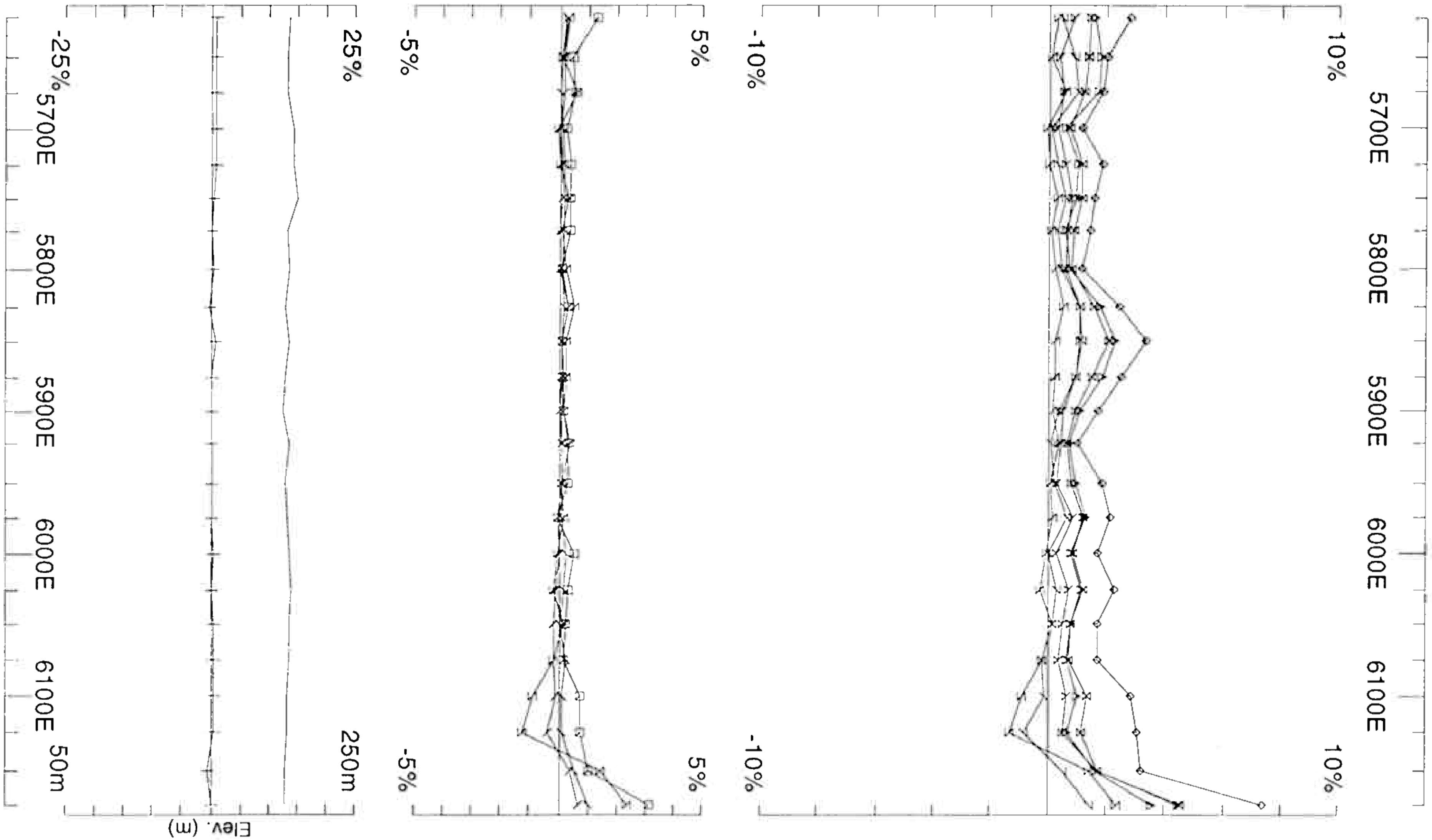
Ch1 reduced

Loop 08 Soknadalen	Line 4200N	5625E - 6175E	550m	1:4000
	Line 4300N	5625E - 6175E	550m	1:4000
	Line 4350N	5625E - 6200E	575m	1:4000
	Line 4400N	5650E - 6150E	500m	1:4000
	Line 4450N	5650E - 6175E	525m	1:4000
	Soknadalen	Loop 08 Total	2700m	

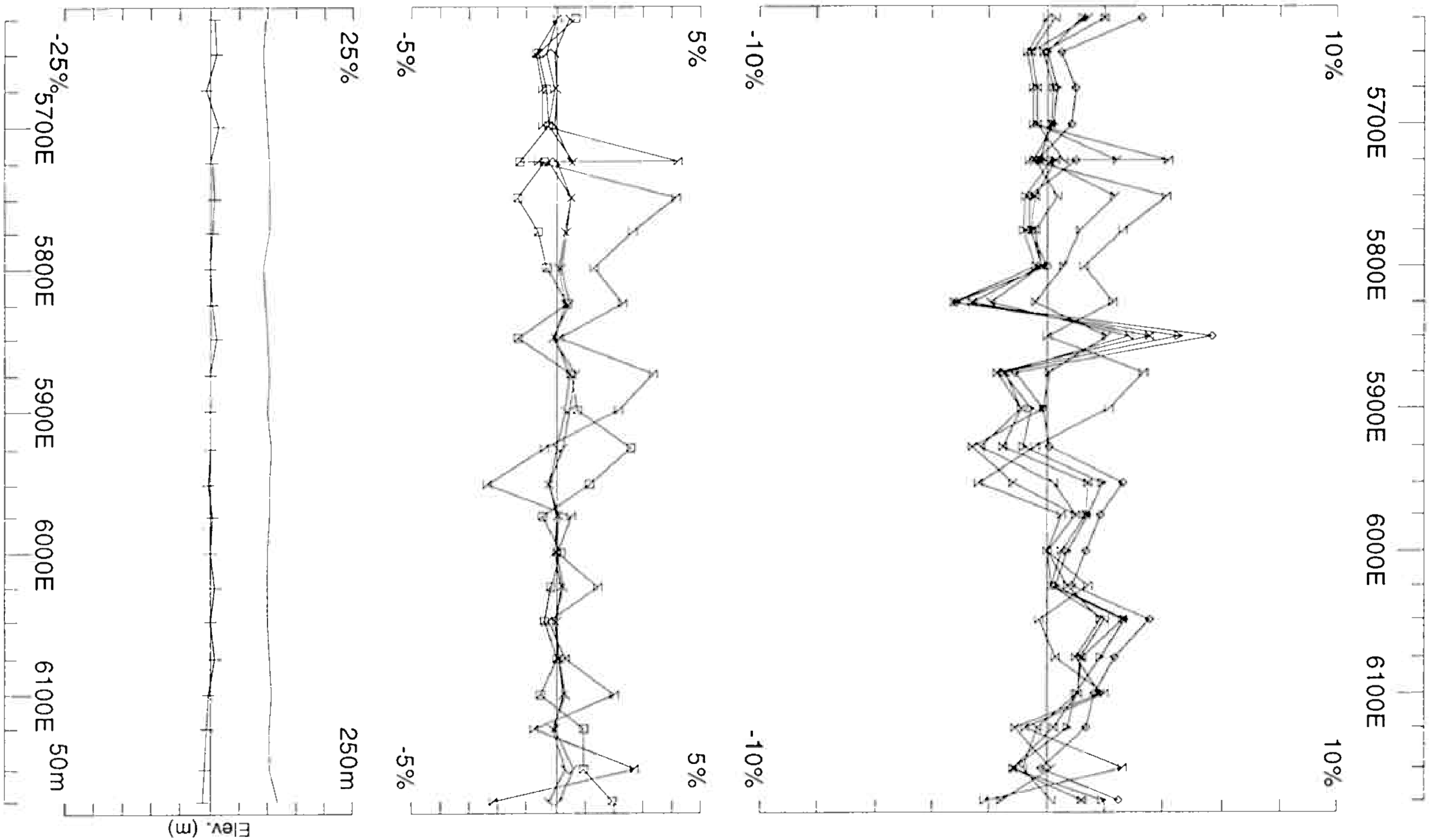
Loop 08 - point norm



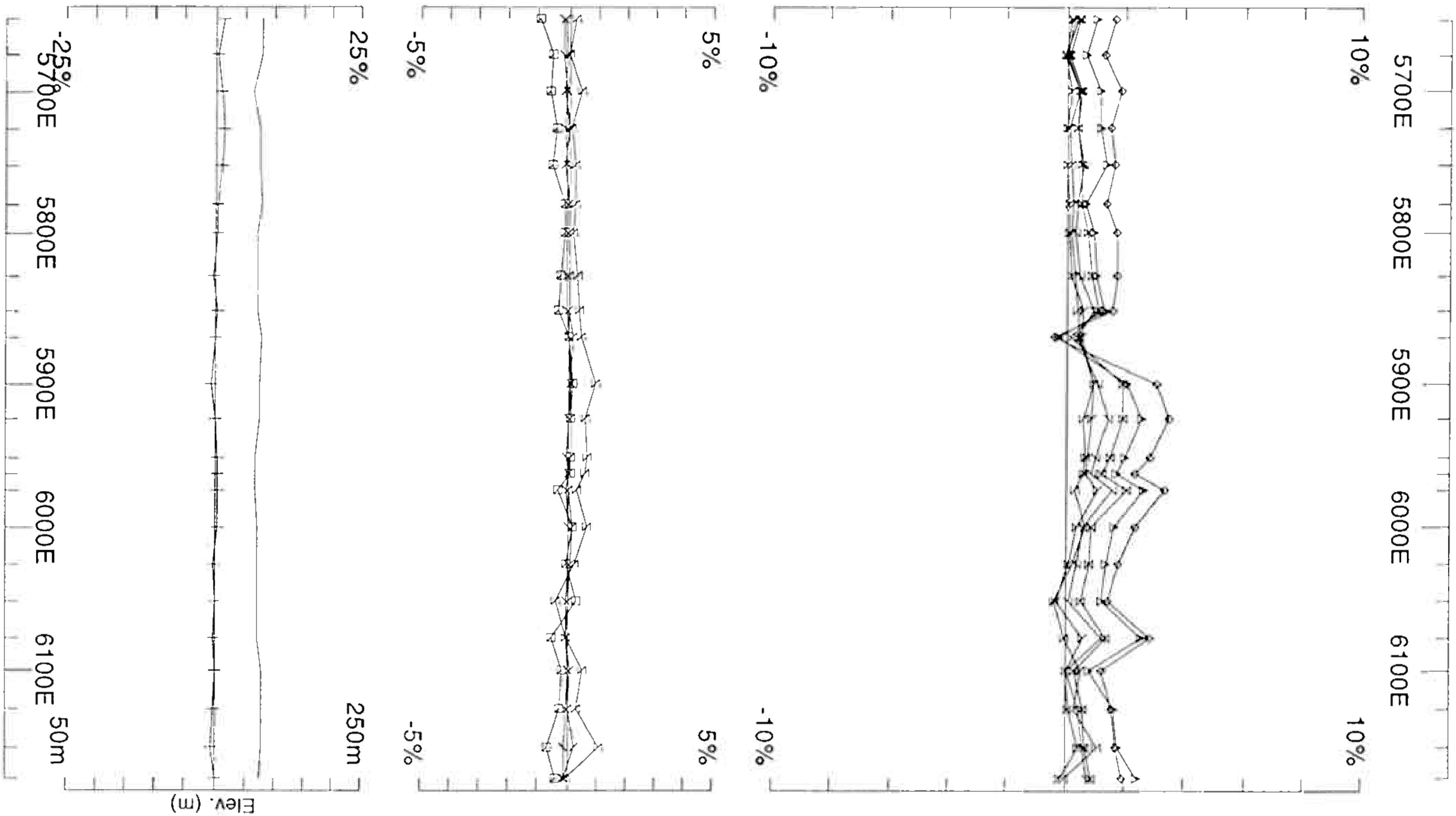
Loop: 08 Line: 4200N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5900,4330,210) Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



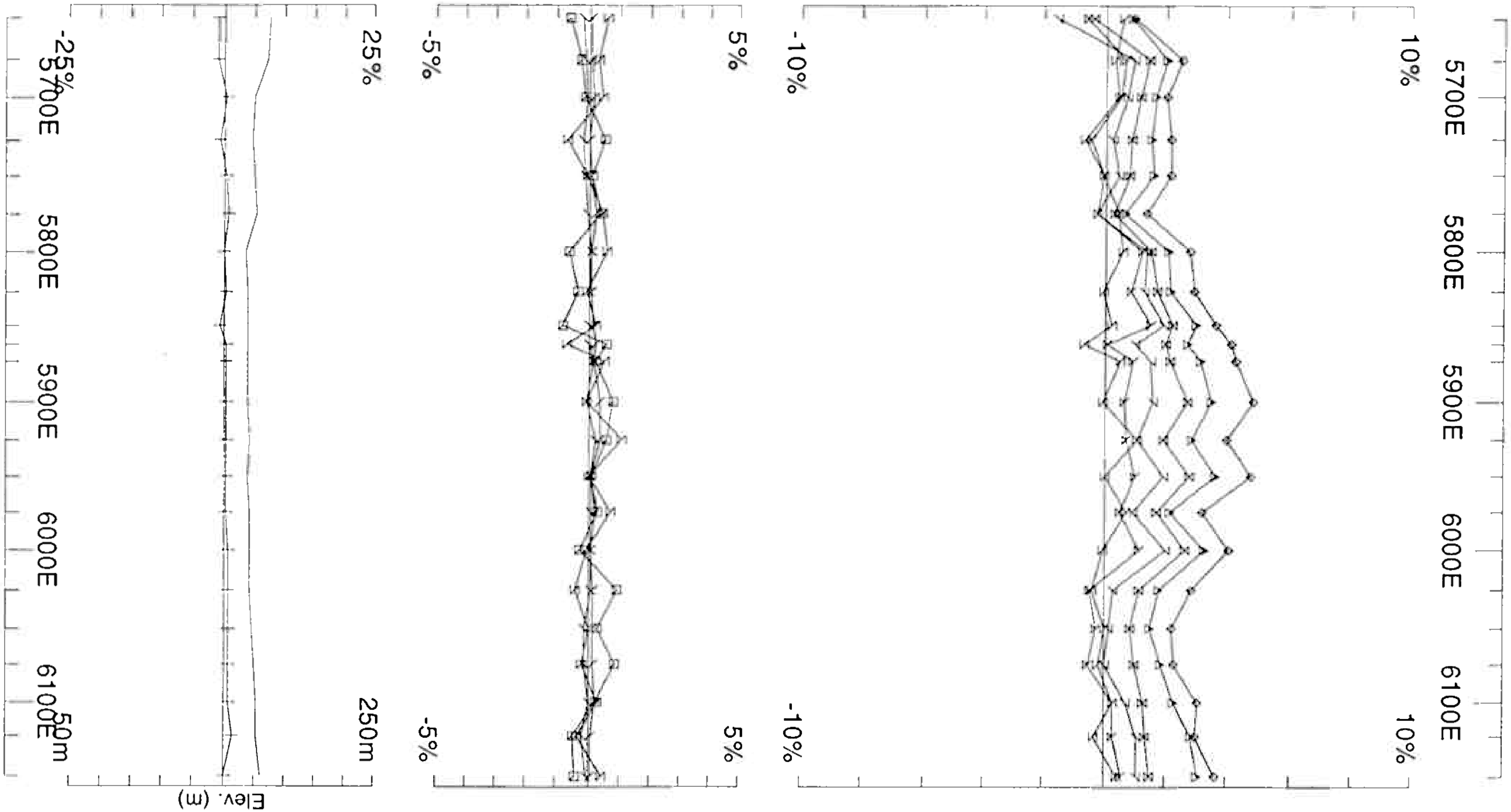
Loop: 08 Line: 4300N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5900,4330,210) Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 08 Line: 4350N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5900,4330,210) Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 7/4/6 Reduced : 7/4/6 Plotted : 13/6/6



Loop: 08 Line: 4400N Compt: Hz	Secondary, (Chn - Ch1)/|Hp| Point Norm.at x,y,z (5900,4330,210) Base Freq. 3.251 Hz	UTEM Survey at: Soknadalen Grid For: A/S Sulfidmalm LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE Job 0612 Surveyed : 6/4/6 Reduced : 29/5/6 Plotted : 13/6/6



Loop: 08
Line: 4450N
Compt: Hz

Secondary, (Chn - Ch1)/|Hp|
Point Norm.at x,y,z
(5900,4330,210)
Base Freq. 3.251 Hz

UTEM Survey at: Soknadalen Grid
For: A/S Sulfidmalm

LAMONTAGNE GEOPHYSICS LTD
GEOPHYSIQUE LTEE

Job 0612

Surveyed : 6/4/6
Reduced : 29/5/6
Plotted : 13/6/6

Appendix B

0612 Production Log

UTEM 3 Surface Survey

Ertelien Project
Norway

for

A/S Sulfidmalm

Production Log (0612)
UTEM Survey on the Ertelien Project, Norway
A/S Sulfidmalm

Date	Rate	Production	Comments
Mar 9	-	-	The UTEM equipment is picked-up by truck for shipping to Norway.
Mar 13	Mob	-	S. Elson, J. Frost, K. Arseanault fly from Kingston, to Toronto, Ontario. T. Pinkerton flies from Ottawa to Toronto, Ontario. They entire crew flies on an overnight flight from Toronto, Ontario to London, England. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Mar 14	Mob	-	The entire crew arrives in London, England and catches a connecting flight to Oslo, Norway. The crew is picked-up at the airport and taken to the field house in Tyristrand, Norway. The UTEM gear is at the field house when the crew arrives. The gear is unpacked and the clocks are turned on. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Mar 15	n/c	-	The entire crew was exhausted in the morning and most had slept very little during the night. It was decided not to lay wire today and give the crew the day to rest. Doris Fox from Falconbridge Ltd. was consulted about the decision and said it was fine as long as LGL did not charge a stand- by day but charged a down day. The crew spooled some wire onto the LGL spools and S. Elson and J. Frost went to the grid in the afternoon to meet the skidoo supplier and to orient themselves. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Mar 16	L(2)-4	-	Laid all of Loop 1 at the Sigdal Grid. The loop was continuous by ~3:45pm. The adapter plug for the transformer was not compatible with the generator. The receivers and coils tested the background noise in the area. The transformer plug was changed in the evening. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Mar 17	P(2)-4	650m	Read: **Loop 1- Sigdal Grid** 3.251 Hz **Line 10100N** **5050E-4750E** Hz **Line 9400N** **5050E-4700E** Hz

Production Log (0612)
UTEM Survey on the Ertelien Project, Norway
A/S Sulfidmalm

Date	Rate	Production	Comments
cont'd			Began reading from Loop 1. At ~12:00 pm the signal was lost from the loop. The generator had stopped operating. One crew member was left with the transmitter and generator to identify and solve the generator problem. At ~1:45pm the generator stopped working again. The generator would begin oscillating then stop. There was also a small amount of fuel leaking from the carburetor chamber. The throttle adjustment was also toggled since this was a known problem with this type of generator. The generator started again however stopped working after 15 minutes. Multiple adjustments were made however the generator would not operate for longer than 5 minutes at a time. The crew left the grid at 5:00 pm. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 0.650km
Mar 18	P(2)-4	1250m	Read: **Loop 1- Sigdal Grid** **3.251 Hz** **Line 10100N** **4350E-4750E** **Hz** **Line 9400N** **4350E-4700E** **Hz** **Line 9500N** **4350E-4500E** **Hz** **5050E-4700E** **Hz** The synchronization between the clocks was lost after 45 minutes of reading. This was not identified until later in the day. Channels 6-10 were affected by this synchronization problem. It was unclear what the cause of this loss of synchronization was. The generator stopped working at ~3:15 pm. The crew-chief decided to restart the transmitter and get the two crews to read one line together at 50m stations. At 6:15pm the generator stopped working. The receivers were 200m apart at this point. It was decided to stop surveying for the day so the crew could depart the grid before dark. The crew returned to the field house at 8:00 pm. A second generator was purchased for the LGL crew during the day. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 1.900km

Production Log (0612)
UTEM Survey on the Ertelien Project, Norway
A/S Sulfidmalm

Date	Rate	Production	Comments
Mar 19	P(1)-2 D(1)-2	700m	Read: **Loop 1- Sigdal Grid** **3.251 Hz** **Line 9600N** **4350E-5050E** **Hz** The new generator operated properly for the entire day of reading. Receiver 5 was synced in the morning and a valid calibration was performed. At the first reading of the day the receiver began overloading. The receiver was shut-off but would not restart. The receiver was reset multiple times but would not turn on properly. The battery was disconnected and the receiver was eventually restarted. The transmitter was shut down and an attempt was made to resync the receiver however the clock shut-off as the receiver was being synced and the receiver would not shut off or turn on properly. The transmitter was energized so the other receiver in the field could continue reading. Receiver 5 was brought back to the truck to be fixed and attempted to be synced to the spare transmitter. After multiple resets Receiver 5 was turned on and was synced to the spare transmitter. The receiver was then brought back into the field, the transmitter was shut down and Rx 5 was synced again. A valid calibration was performed and the receiver began reading. During the first reading the receiver again shutdown and could not be restarted. The crew-chief decided to bring this receiver back to the field house and attempt to fix it or get the spare receiver working at low frequency. At 4:00 pm the spare receiver was running at low frequency. The crew-chief drove back to the field and synced it with the transmitter. A calibration was performed and the spare receiver was working properly. The crew returned to the field house at 7:00 pm. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 2.600km
Mar 20	P(2)-4	1400m	Read: **Loop 1- Sigdal Grid** **3.251 Hz** **Line 9700N** **4350E-5050E** **Hz** **Line 9650N** **4350E-5050E** **Hz** A broken wire for the sync cable inside Receiver 6 needed to be soldered in the morning. The lines

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Date	Rate	Production	Comments
cont'd			took ~8 hours to read. The crew departed the field house at 7:30 am and returned at 8:00 pm. **Crew:** S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date:** 4.000km
Mar 21	P(2)-4	1400m	Read: **Loop 1- Sigdal Grid** 3.251 Hz **Line 9900N** **4350E-5050E** **Hz** **Line 9850N** **4350E-5050E** **Hz** Full day of reading. Crew returned to the field house at 6:15 pm. **Crew:** S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date:** 5.400km
Mar 22	P(2)-4	1400m	Read: **Loop 1- Sigdal Grid** 3.251 Hz **Line 9800N** **4350E-5050E** **Hz** **Line 9750N** **4350E-5050E** **Hz** Repaired loop break from trail groomer in the morning. **Crew:** S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date:** 6.800km
Mar 23	P(2)-4	2475m	Read: **Loop 1B- Sigdal Grid** 3.251 Hz **Line 9950N** **4575E-5050E** **Hz** **Line 9900N** **4575E-5075E** **Hz** **Line 9850N** **4575E-5075E** **Hz** **Line 9750N** **4575E-5075E** **Hz** **Line 9700N** **4575E-5075E** **Hz** Laid Loop 1B on the Sigdal grid in the morning. **Crew:** S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date:** 9.275km
Mar 24	P(2)-4	1000m	Read: **Loop 1B- Sigdal Grid** 3.251 Hz **Line 9650N** **4575E-5075E** **Hz** **Line 9800N** **4575E-5075E** **Hz** Finished reading Loop 1B at the Sigdal Grid. Picked-up Loop 1 and Loop 1B at Sigdal. R. Jones and R. MacKleod, from Falconbridge laid 3km of wire for Loop 3 at the Urellen Grid. **Crew:** S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date:** 10.275km

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Date	Rate	Production	Comments		
Mar 25	P(2)-4	1525m	Read: **Loop 3- Ulleren Grid**	**3.251 Hz**	
			Line 6200N	**9450E-10225E**	**Hz**
			Line 6300N	**9450E-10200E**	**Hz**
			Finished laying Loop 3 at Ulleren in the morning.		
			Crew: S. Elson, J. Frost, T. Pinkerton, K. Arsenault		
				To Date: 11.800km	
Mar 26	P(2)-4	4600m	Read: **Loop 3- Ulleren Grid**	**3.251 Hz**	
			Line 6100N	**9450E-10225E**	**Hz**
			Line 6050N	**9450E-10225E**	**Hz**
			Line 6000N	**9450E-10225E**	**Hz**
			Line 5900N	**9450E-10225E**	**Hz**
			Line 5800N	**9450E-10200E**	**Hz**
			Line 5700N	**9450E-10200E**	**Hz**
			Crew: S. Elson, J. Frost, T. Pinkerton, K. Arsenault		
				To Date: 16.400km	
Mar 27	P(2)-4 0.5 L(1)-1	5275m	Read: **Loop 3- Ulleren Grid**	**3.251 Hz**	
			Line 5600N	**9450E-10200E**	**Hz**
			Line 5500N	**9450E-10225E**	**Hz**
			Line 5400N	**9450E-10200E**	**Hz**
			Line 5300N	**9450E-10200E**	**Hz**
			Line 5200N	**9450E-10200E**	**Hz**
			Line 5100N	**9450E-10200E**	**Hz**
			Line 5000N	**9450E-10200E**	**Hz**
			Finished reading Loop 3 at the Urellen Grid.		
			Rob Langridge arrives from Espedalen to assist with the reading of the Ertelien Mine Grid.		
			Loop 2 at the Ertelien Mine Grid was laid by T. Blair, D. Fox and R. Jones from Falconbridge Ltd..		
			Crew: S. Elson, J. Frost, T. Pinkerton, K. Arsenault		
				To Date: 21.675km	
Mar 28	P(2)-4 P(1)-1	5325m	Read: **Loop 2- Ertelien Mine Grid**	**3.251 Hz**	
			Line 9900N	**7450E-8450E**	**Hz**
			Line 9800N	**7425E-7825E**	**Hz**
				8000E-8450E	**Hz**
			Line 9750N	**8000E-8450E**	**Hz**
			Line 9700N	**8000E-8450E**	**Hz**
			Line 9600N	**7900E-8400E**	**Hz**
			Line 9200N	**7850E-8425E**	**Hz**
			Line 9100N	**7850E-8425E**	**Hz**

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Date	Rate	Production	Comments		
cont'd			**Line 9000N**	**7850E-8425E**	**Hz**
			Line 8900N	**7850E-8200E**	**Hz**
			Began reading from Loop 2 in the morning. A plow broke the wire after 20 minutes of reading. 50 meters of wire had to be retrieved from the field house to repair the break.		
			Half of Loop 5 at Langedalen was laid by Falconbridge employees.		
			D. Fox from Falconbridge assisted the Lamontagne crew.		
			Crew: R. Langridge, S. Elson, J. Frost, T. Pinkerton, K. Arsenault	**To Date**: 27.000km	
Mar 29	P(2)-4 P(1)-1	2700m	Read: **Loop 2- Ertelien Mine Grid**	**3.251 Hz**	
			Line 9300N	**7850E-8450E**	**Hz**
			Line 9400N	**8100E-8450E**	**Hz**
			Line 9500N	**7925E-8450E**	**Hz**
			Line 9600N	**7475E-7800E**	**Hz**
			Line 9650N	**7950E-8450E**	**Hz**
			Line 9700N	**7425E-7825E**	**Hz**
			Finished reading from Loop 2 at the Ertelien Mine Grid. Picked-up Loop 3 at Urellen.		
			The rest of Loop 5 at Langedalen was laid by Falconbridge employees.		
			D. Fox from Falconbridge assisted the Lamontagne crew.		
			Crew: R. Langridge, S. Elson, J. Frost, T. Pinkerton, K. Arsenault	**To Date**: 29.700km	
Mar 30	P(2)-4 P(1)-1	3775m	Read: **Loop 5- Langedalen Grid**	**3.251 Hz**	
			Line 5000N	**1500E-2175E**	**Hz**
			Line 5100N	**1475E-2175E**	**Hz**
			Line 5200N	**1475E-2175E**	**Hz**
				2225E-2800E	**Hz**
			Line 5300N	**2250E-2800E**	**Hz**
			Line 5400N	**2225E-2800E**	**Hz**
			Read from Loop 5 at Langedalen.		
			Picked-up Loop 2 at the Ertelien Mine Grid. J. Frost and K. Arsenault assisted T. Blair from Falconbridge picking-up line pickets in the afternoon.		
			R. Jones from Falconbridge assisted the Lamontagne crew.		

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Date	Rate	Production	Comments
cont'd			**Crew**: R. Langridge, S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 33.475km
Mar 31	P(2)-4 P(1)-1	3600m	Read: **Loop 5- Langedalen Grid 3.251 Hz** **Line 4600N 1500E-2150E Hz** **Line 4700N 1475E-2175E Hz** **Line 5250N 1475E-2175E Hz** **Line 5300N 1450E-2175E Hz** **Line 5400N 1475E-2175E Hz** **Line 5500N 1500E-1625E Hz** Read from Loop 5 at Langedalen. Laid Loop 6 at Langedalen. R. Jones from Falconbridge assisted the Lamontagne crew. **Crew**: R. Langridge, S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 37.075km
Apr 1	P(2)-4 P(1)-1	2400m	Read: **Loop 5- Langedalen Grid 3.251 Hz** **Line 4750N 1650E-2100E Hz** **Line 4800N 1475E-2175E Hz** **Line 4900N 1475E-2175E Hz** **Line 5500N 1625E-2175E Hz** Finished reading from Loop 5 at Langedalen and switched over loops and transmitter site to Loop 6 at Langedalen. Laid Loop 7 at Storebraten. R. Jones from Falconbridge assisted the Lamontagne crew. **Crew**: R. Langridge, S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 39.475km
Apr 2	P(2)-4	3850m	Read: **Loop 6- Langedalen Grid 3.251 Hz** **Line 3600N 2225E-3025E Hz** **Line 3800N 2225E-3025E Hz** **Line 4000N 2250E-3025E Hz** **Line 4100N 2250E-2900E Hz** **Line 4200N 2250E-2750E Hz** **Line 4300N 2250E-2575E Hz** Began reading from Loop 6 at Langedalen. R. Langridge returns to Espedalen. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 43.325km

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Date	Rate	Production	Comments
Apr 3	P(2)-4	4075m	Read: **Loop 6- Langedalen Grid** **3.251 Hz** **Line 3800N** **1475E-2175E** **Hz** **Line 4000N** **1475E-2175E** **Hz** **Line 4100N** **1500E-2150E** **Hz** **Line 4200N** **1500E-2150E** **Hz** **Line 4300N** **1475E-2150E** **Hz** **Line 4400N** **1475E-2175E** **Hz** Read from Loop 6 at Langedalen. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 47.400km
Apr 4	P(2)-4	1650m	Read: **Loop 6- Langedalen Grid** **3.251 Hz** **Line 3700N** **1650E-2150E** **Hz** **Line 3900N** **1650E-2150E** **Hz** **Line 4500N** **1500E-2150E** **Hz** Finished reading from Loop 6 at Langedalen. The LGL crew GPS'ed and picketed Lines 3700N and 3900N from 1650E to 2150E in the morning. Picked-up Loop 5 at Langedalen. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 49.050km
Apr 5	P(2)-4	3650m	Read: **Loop 7- Storebraten Grid** **3.251 Hz** **Line 5800N** **5425E-5925E** **Hz** **Line 5900N** **5425E-5950E** **Hz** **Line 5950N** **5425E-5950E** **Hz** **Line 6000N** **5450E-5950E** **Hz** **Line 6050N** **5425E-5975E** **Hz** **Line 6100N** **5425E-5950E** **Hz** **Line 6200N** **5425E-5950E** **Hz** Read all of Loop 7 at Storebraten. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 52.700km
Apr 6	P(2)-4	2225m	Read: **Loop 8- Soknadalen Grid** **3.251 Hz** **Line 4200N** **5625E-6175E** **Hz** **Line 4300N** **5625E-6175E** **Hz** **Line 4350N** **5625E-5725E** **Hz** **Line 4400N** **5650E-6150E** **Hz** **Line 4450N** **5650E-6175E** **Hz** Laid Loop 8 at Soknadalen in the morning. A slow day of reading due to the cultural noise in the area.

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Date	Rate	Production	Comments
cont'd			**Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 54.925km
Apr 7	P(2)-4	475m	Read: **Loop 8- Soknadalen Grid 3.251 Hz** **Line 4350N 5725E-6200E Hz** The client requested that an additional line in the north of the Soknadalen Grid was GPS'ed and read. The line was ~65m from a regional powerline. The operator began GPS'ing the line and started to read a few stations however, the gain could not be increased above 1/5 and 2K stacks were not repeating 75m away from the wire. Trevor Blair, the Falconbridge geologist, was contacted and it was decided not to read this line. The noise level from the powerline was significantly higher than yesterday. Line 4350N took over 5 hours to read. Picked-up Loop 7 at Storebraten and Loop 8 at Soknadalen. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault **To Date**: 55.400km
Apr 8	L(2)-4	-	Picked-up Loop 6 at Langedalen and spooled all the wire onto the factory spools. Began packing the UTEM equipment. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Apr 9	S(2)-4	-	Finished packing all the UTEM equipment and gear. Helped clean the field house and trucks. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Apr 10	Demob	-	Dropped the UTEM gear at Wilhelmsen Agencies for shipping to Kingston. The crew flies from Oslo to London. T. Pinkerton flies to Ottawa, Canada and the rest of the crew heads on vacation from London. **Crew**: S. Elson, J. Frost, T. Pinkerton, K. Arsenault
Apr 11	Demob	-	UTEM equipment in transit.
Apr 19	Demob	-	UTEM equipment arrives in Kingston.

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Date	Rate	Production	Comments

LEGEND

P(n)-x	Surface Production (# of receivers)- # of personnel
L(n)-x	Looping (# of receivers)- # of personnel
S(n)-x	Standby (# of receivers)- # of personnel
D(n)-x	Down (# of receivers)- # of personnel

Appendix C

The UTEM SYSTEM

The UTEM System

UTEM Data Reduction and Plotting Conventions

Data Presentation

The UTEM SYSTEM

UTEM uses a large, fixed, horizontal transmitter loop as its source. Loops range in size from 300m x 300m up to as large as 4km x 4km. Smaller loops are generally used over conductive terrain or for shallow sounding work. The larger loops are only used over resistive terrain. The UTEM receiver is typically syncronized with the transmitter at the beginning of a survey day and operates remotely after that point. The clocks employed - one in each of the receiver and transmitter - are sufficiently accurate to maintain synchronisation.

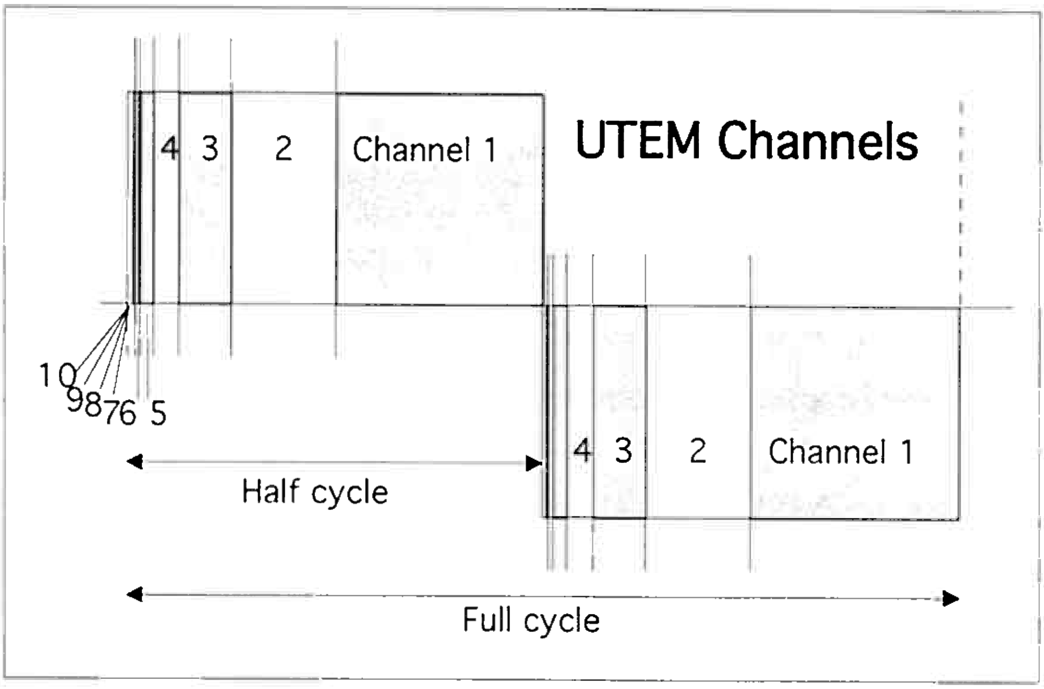
Measurements are routinely taken to a distance of 1.5 to twice the loop dimensions, depending on the local noise levels, and can be continued further. Lines are typically surveyed out from the edge of the loop but may also be read across the loop wire and through the centre of the loop, a configuration used mainly to detect horizontal conductors. BHUTEM - the borehole version of UTEM -surveys have been carried out to depths up to 3000+ metres.

System Waveform

The UTEM transmitter passes a low-frequency (4 Hz to 90 Hz) current of a precisely regulated triangular waveform through the transmitter loop. The frequency can be set to any value within the operating range of the transmitter, however, it is usually set at 31 Hz to minimise power line (60 Hz in North America) effects. Since a receiver coil responds to the time derivative of the magnetic field, the UTEM system really "sees" the step response of the ground. UTEM is the only time domain system which measures the step response of the ground. All other T.D.E.M. systems to date transmit a modified step current and "see" the (im)pulse response of the ground at the receiver. In practice, the transmitted UTEM waveform is tailored to optimize signal-to-noise. Deconvolution techniques are employed within the system to produce an equivalent to the conceptual "step response" at the receiver.

System Sampling

The UTEM receiver measures the time variation of the magnetic field in the direction of the receiver coil at 10 delay times (channels). UTEM channels are spaced in a binary, geometric progression across each half-cycle of the received waveform. Channel **10** is the earliest channel and it is $1/2^{10}$ of the half-cycle wide. Channel **1**, the latest channel, is $1/2^{1}$ of the half-cycle wide (see Figure below). The measurements obtained for each of 10 channels are accumulated over many half-cycles. Each final channel value, as stored, is the average of the measurements for that time channel. The number of half-cycles averaged generally ranges between 2048 (1024 full-cycles - 1K in UTEM jargon) to 32768 (16K) depending on the level of ambient noise and the signal strength.



System Configurations

For surface work the receiver coil is mounted on a portable tripod and oriented. During a surface UTEM survey the vertical component of the magnetic field (Hz) of the transmitter loop is always measured. Horizontal in-line (Hx) and cross-line (Hy) components are also measured if more detailed information is required. The UTEM System is also capable of measuring the two horizontal components of the electric field, Ex and Ey. A dipole sensor comprised of two electrodes is used to measure the electric field components. This is generally used for outlining resistive features to which the magnetic field is not very sensitive.

BHUTEM surveys employ a receiver coil that is smaller in diameter than the surface coil. The borehole receiver coil forms part of a down-hole receiver package used to measure the axial (along-borehole) component of the magnetic field of the transmitter loop. Due to the distance between coil and receiver in borehole surveys the signal must be transmitted up to the receiver. In BHUTEM the signal is transmitted to surface digitally using a kevlar-reinforced fibre-optic cable as a data link. Using a fibre-optic link avoids signal degradation problems and allows surveying of boreholes to 3000+m. The cable is also very light - the specific gravity is nearly 1.0 - making the cable handling hardware quite portable.

The EM Induction Process

Any time-varying transmitted ("primary") field induces current flow in conductive regions of the ground below and around the transmitter loop (i.e. in the earth or "half-space"). This current flow produces a measurable EM field, the secondary field, which has an inherent "inertia" that resists the change in primary field direction. This "inertial" effect is called self-inductance; it limits the rate at which current can change and is only dependent on the shape and size of a conductive path.

It takes a certain amount of time for the transmitted current flow to be redirected (reversed) and reestablished to full amplitude after the rate-of-change of the primary field reverses direction. This measurable reversal time is characteristic for a given conductor. In general, for a good conductor this time is greater than that of a poor conductor. This is because in a good conductor the terminal current level is greater, whereas its rate of change is limited by the inductance of the current path. The time-varying current causes an Emf in the sensor proportional to the time derivative of the current. This Emf decays with time - it vanishes when the reversal is complete - and the characteristic time of the Emf decay as measured by the sensor is referred to as the **decay time** of the conductor.

The large-scale current which is induced in the half-space by the primary field produces the half-space response as seen in typical UTEM profiles. This background response is influenced by the finite conductivity of the surrounding rock. Other currents may be induced in locally more conductive zones (conductors) that have longer decay times than the half-space response. The responses of these conductors are superimposed upon the background response. The result is that the UTEM receiver detects:

- the primary field waveform, a square-wave
- the half-space (background) response of the surrounding rock
- a slight-to-large response due to any conductors present.

The result is that in the presence of conductors the primary field waveform is substantially (and anomalously) distorted.

UTEM DATA REDUCTION and PLOTTING CONVENTIONS

The UTEM data as it appears in the data files is in total field, continuously normalized form. In this form, the magnetic field data collected by the receiver is expressed as a % of the calculated primary magnetic field vector magnitude at the station. These are total field values - the UTEM system measures during the "on-time" and as such samples both the primary and secondary fields.

For plotting purposes, the reduced magnetic field data (as it appears in the data file) are transformed to other formats as required. The following is provided as a description of the various plotting formats used for the display of UTEM data. A plotting format is defined by the choice of the *normalization* and *field type* parameters selected for display.

NORMALIZATION

UTEM results are always expressed as a % of a normalizing field at some point in space.

In **continuously normalized** form the normalizing factor (the denominator) is the magnitude of the computed local primary field vector. As the primary exciting field magnitude diminishes with increasing distance from the transmitter loop the response is continuously amplified as a function of offset from the loop. Although this type of normalization considerably distorts the response shape, it permits anomalies to be easily identified at a wide range of distances from the loop.

Note: An optional form of continuous normalization permits the interpreter to normalize the response to the magnitude of the primary field vector at a fixed depth below each station. This is useful for surface profiles which come very close to the loop. Without this adjustment option, the normalizing field is so strong near the loop that the secondary effects become too small in the presence of such a large primary component. In such circumstances interpretation is difficult, however; by "normalizing at some depth" the size of the normalizing field, near the loop in particular, is reduced and the resulting profile can be more effectively interpreted to a very close distance from the transmitter wire. The usual choice for the depth is the estimated target depth is used.

In **point normalized form** the normalizing factor is the magnitude of the computed primary field vector at a single point in space. When data is presented in this form, the point of normalization is displayed in the title block of the plot. Point normalized profiles show the non-distorted shape of the field profiles. Unfortunately, the very large range in magnitude of anomalies both near and far from the loop means that small anomalies, particularly those far from the loop, may be overlooked on this type of plot in favor of presenting larger amplitude anomalies.

Note: Selecting the correct plot scales is critical to the recognition of conductors over the entire length of a point normalized profile. Point normalized data is often used for interpretation where an analysis of the shape of a specific anomaly is required. Point normalized profiles are therefore plotted selectively as required during interpretation. An exception to this procedure occurs where surface data has been collected entirely inside a transmitter loop. The primary field does not vary greatly inside the loop, therefore, the benefits of continuous normalization are not required in the display of such results. In these cases data is often point normalized to a fixed point near the loop centre.

FIELD TYPE

The type of field may be either the **Total field** or the **Secondary field.** In general, it is the secondary field that is most useful for the recognition and interpretation of discrete conductors.

UTEM Results as Secondary Fields

Because the UTEM system measures during the transmitter on-time the determination of the secondary field requires that an estimate of the primary signal be subtracted from the observations. Two estimates of the primary signal are available:

1) UTEM Channel 1

One estimate of the primary signal is the value of the latest time channel observed by the UTEM System, channel 1. When Channel 1 is subtracted from the UTEM data the resulting data display is termed ***Channel 1 Reduced***. This reduction formula is used in situations where it can be assumed that all responses from any target bodies have decayed away by the latest time channel sampled. The Channel 1 value is then a reasonable estimate of the primary signal present during Channels 2....10.

In practice the ***Channel 1 Reduced*** form is most useful when the secondary response is very small at the latest delay time. In these cases channel 1 is indeed a good estimate of the primary field and using it avoids problems due to geometric errors or transmitter loop current/system sensitivity errors.

2) Calculated primary field

An alternate estimate of the primary field is obtained by computing the primary field from the known locations of the transmitter loop and the receiver stations. When the computed primary field is subtracted from the UTEM data the resulting data display is termed ***Primary Field Reduced*** .

The calculated primary field will be in error if the geometry is in error - mislocation of the survey stations or the loop vertices - or if the transmitter loop current/system sensitivity is in error. Mislocation errors from loop/station geometry may give rise to very large secondary field errors depending on the accuracy of the loop and station location method used. Transmitter loop current/system sensitivity error is rarely greater than 2%. ***Primary Field Reduced*** is plotted in situations where a large Channel 1 response is observed. In this case the assumption that the Channel 1 value is a reasonable estimate of the primary field effect is not valid.

Note: When UTEM data is plotted in the ***Channel 1 Reduced*** form the secondary field data for Channel 1 itself are always presented in ***Primary Field Reduced*** form and are plotted on a separate axis. This plotting format serves to show any long time-constant responses, magnetostatic anomalies and/or geometric errors present in the data.

Mathematical Formulations

In the following expressions:

$\mathbf{Rn_j}$ is the result plotted for the n^{th} UTEM channel,

$\mathbf{R1_j}$ is the result plotted for the latest-time UTEM channel, channel 1,

$\mathbf{Chn_j}$ is the raw component sensor value for the n^{th} channel at station j,

$\mathbf{Ch1_j}$ is the raw component sensor value for channel 1 at station j,

$\mathbf{H^P{}_j}$ is the computed primary field component in the sensor direction

$|\mathbf{H^P}|$ is the magnitude of the computed primary field at:
- a fixed station for the entire line (point normalized data)
- the local station of observation (continuously normalized data)
- a fixed depth below the station (continuously normalized at a depth).

Channel 1 Reduced Secondary Fields : Here, the latest time channel, Channel 1 is used as an "estimate" of the primary signal and channels 2-10 are expressed as:

$$Rn_j = (Chn_j - Ch1_j) / |H^P| \quad x\,100\%$$

Channel 1 itself is reduced by subtracting a calculation of the primary field observed in the direction of the coil, H^P as follows:

$$R1_j = (Ch1_j - H^P{}_j) / |H^P| \quad x\,100\%$$

Primary Field Reduced Secondary Fields : In this form all channels are reduced according to the equation used for channel 1 above:

$$Rn_j = (Chn_j - H^P{}_j) / |H^P| \quad x\,100\%$$

This type of reduction is most often used in cases where very good geometric control is available (leading to low error in the calculated primary field, $H^P{}_j$) and where very slowly decaying responses result in significant secondary field effects remaining in channel 1 observations.

UTEM Results as a Total Field

In certain cases results are presented as a % of the **Total Field.** This display is particularly useful, in borehole surveys where the probe may actually pass through a very good conductor. In these cases the shielding effect of the conductor will cause the observed (total) field to become very small below the intersection point. This nullification due to shielding effects on the total field is much easier to see on a separate *Total Field* plot. In cases where the amplitude of the anomalies relative to the primary field is small, suggesting the presence of poorly conductive bodies, the *Total Field* plot is less useful.

The data contained in the UTEM reduced data files is in *Total Field,* continuously normalized form if:

$$Rn_j = Chn_j / |H^P| \quad x\,100\%$$

DATA PRESENTATION

All UTEM survey results are presented as profiles in an Appendix of this report. For BHUTEM surveys the requisite Vectorplots, presented as plan and section views showing the direction and magnitude of the calculated primary field vectors for each transmitter loop, are presented in a separate Appendix.

The symbols used to identify the channels on all plots as well as the mean delay time for each channel is shown in the table below.

UTEM System Mean Delay Times

10 Channel Mode @ 31 hz.(approx.)

(base freq: 30.974 hertz)

Channel #	Delay time (ms)	Plot Symbol
1	12.11	|
2	6.053	\
3	3.027	/
4	1.513	□
5	0.757	Σ
6	0.378	◭
7	0.189	7
8	0.095	X
9	0.047	Δ
10	0.024	◇

Notes on Standard plotting formats:

10 channel data in *Channel 1 Reduced* form - The data are usually displayed on three separate axes. This permits scale expansion, allowing for accurate determination of signal decay rates. The standard configuration is:

Bottom axis - Channel 1 (latest time) is plotted alone in *Primary Field Reduced* form using the same scale as the center axis.

Center axis - The intermediate to late time channels, ch5 to ch2 are plotted on the center axis using a suitable scale.

Top axis - The early time channels, ch10 to ch6 and a repeat of ch5 for comparison are plotted on the top axis at a reduced scale. The earliest channels, ch8 to ch10, may not be plotted to avoid clutter.

10 channel data in *Primary Field Reduced* form: The data are displayed using a

single axis plot format. Secondary effects are plotted using a Y axis on each data plot with peak to peak values up to 200%.

BHUTEM data plotted as total field profiles: Data are expressed directly as a percentage of the ***Total Field*** value. The Y axis on each single axis data plot shows peak values of up to 100%. These departures are always relative to the measured total field value at the observation station.

BHUTEM data plotted as secondary field profiles: Check the title block of the plot to determine if the data is in ***Channel 1 Reduced*** form or in ***Primary Field Reduced*** form.

Note that on all BHUTEM plots the ratio between the axial component of the primary field of the loop and the magnitude of the total primary field strength **(dc)** is plotted as a profile without symbols. In UTEM jargon this is referred to as the "primary field" and it is plotted for use as a polarity reference tool.

Appendix D

Note on sources of anomalous Ch1

Note on sources of anomalous Ch1

This section outlines the possible sources of anomalous channel 1 which is not correlated to the Ch2-10 data plotted on the upper axes of a *channel 1 normalized* plot.

1) **Mislocation of the transmitter loop and/or survey stations**

Mislocating the transmitter loop and/or the survey stations results in an error in the calculated primary field at the station and appears as an anomalous Ch1 value not correlated to *channel 1 normalized* Ch2-10. The effect is amplified near the loop front. This can be seen in the profiles - the error in Ch1 generally increases approaching the loop. As a rule a 1% error in measurement of the distance from the loop will result in, for outside the loop surveys, an error in Ch1 of:

- 1% near the loop front (long-wire field varies as 1/r)
- 3% at a distance from the loop front (dipolar field varies as $1/r^3$)
- 2% at intermediate distances (intermediate field varies as $\sim 1/r^2$)

Errors in elevation result in smaller errors but as they often affect the chainage they accumulate along the line.

The in-loop survey configuration generally diminishes geometric error since the field gradients are very low. At the centre of the loop the gradient in the vertical field is essentially zero so it is difficult to introduce geometric anomalies near the loop centre. Near the loop sides and at the closest approach of the lines to the wire mislocation of the loop and the station becomes more critical. Typically loop sides are designed to be >200m from any survey stations.

2) **Magnetostatic UTEM responses**

Magnetostatic UTEM responses arise over rocks which generate magnetic anomalies. Such magnetic materials will amplify the total (primary + secondary) field of the UTEM transmitter which is sensed by the receiver coil. The secondary field is generated by subtracting a computed primary which does not include magnetic effects. This can give rise to strong and abrupt channel 1 anomalies when the source of the magnetics is at surface. This is the case in a number of places on these grids. UTEM magnetostatic anomalies differ from DC magnetic anomalies in the following three major ways:

1) In the case of DC magnetics the field is dipping N and is very uniform over the scale of the survey area while the UTEM field inside the loop is vertical and it is stronger near the loop edges.
2) Most aeromagnetics are collected as total field while with UTEM we measure a given (in this case generally z,x) component.
3) DC magnetic instruments observe the total magnetization of the causative body which is due to its susceptibility as well as any remnant magnetization. An AC method such as UTEM will not respond to the remnant portion of the magnetization.

The larger amplitude of the UTEM Ch1 response is explained by the fact that the UTEM primary field is often more favourably coupled (magnetostatically speaking) to

magnetic mineralization as compared to the earths field. Another factor could be the presence of a reverse remnant component to the magnetization.
Note that positive magnetic anomalies will cause:

- positive Ch1 anomalies in data collected outside the loop
- negative Ch1 anomalies in data collected inside the loop

3) **Extremely good conductors**

An extremely good conductor will be characterized by a time constant much longer than the half-period (@ 30Hz >>16ms). This will give rise to an anomalous Ch1 which is not correlated to the Ch2-10 data plotted on the upper axes of a *channel 1 normalized* plot.

Appendix E

Note on 4 Hz UTEM data:
The effect of the presence of a 60-cycle powerline.

Note
While this Appendix uses data collected in the presence of a 60Hz powerline the issue dealt with applies equally to UTEM data collected in the presence of a 50Hz powerline.

Note: The standard presentation in Appendix A has Ch2-5 plotted on the middle axis. An alternative presentation - with Ch2 and Ch3 on the middle axis - is sometimes chosen when a powerline cuts through the surveyed area. This Appendix is a brief discussion of why the alternative presentation is chosen.

Note on 4 Hz UTEM data:The effect of the presence of a 60-cycle powerline.

This appendix outlines and discusses the effect of the presence of a 60-cycle powerline on ~4Hz (3.872Hz) UTEM data. This line is from a series of loops with a powerline cutting across the survey area. The UTEM data is affected by the presence of the powerline.

example data:

Figure E1(a) is the example data as presented in Appendix A - an alternative presentation with Ch2 and Ch3 on the middle axis. The standard presentation is shown in Figure E1(b) - with Ch2-5 plotted on the middle axis. The alternative presentation was chosen for a series of loops (including this loop) with a powerline cutting through the surveyed area. Figure E1(c) shows why - Ch4 and Ch5 show a pattern where when one is up the other is down and vice versa. The amplitude of the pattern decreases with distance away from the powerline. It was felt that this pattern obscured the information in Ch2 and 3 and the alternative presentation was chosen.

explanation:

Figure E2a) shows the UTEM waveform at ~4Hz with a 60Hz waveform superimposed on it. Roughly 16 cycles of the 60-cycle waveform fit into the full UTEM waveform. On a channel-by-channel basis:

~4 cycles fit into Ch1
~2 cycles fit into Ch2
~1 cycle fits into Ch3.

The multiple cycles tend to cancel out. Earlier channels are narrower - only part of a cycle wide. In particular Ch4 is ~half a cycle wide and Ch5 falls in the opposite halfcycle. The result is the pattern shown in Figure 1(c): Ch4 and Ch5 tending to diverge from one another - more strongly near the powerline.

other presentations:

Figures E3(a) and (b) show the example data in two other presentations where several channels are combined to give fewer, cleaner channels:

Figure E3(a): In this presentation Ch4 and 5 are combined to give a combined Ch"4" that is ~1.5 times as wide as the original Ch4. The Ch"4" is cleaner than the original. The original Ch5-10 are shown on the upper axis.

Figure E3(b): In this presentation Ch4-10 are combined to give a combined Ch"4" that is 2x as wide as the original Ch4 (equal in width to the original Ch3). The Ch"4" is as clean as the original Ch3. Note that Ch10 is added in twice to make the 2x factor exact. The original Ch5-10 are shown on the upper axis.

Discussion:

Several elements of UTEM survey design and procedure will have an affect on the number of useful channels in the final data set. These would include:

- careful positioning of the transmitter loops relative to the powerline(s)
- increasing the transmitter current (and the signal-to-noise ratio)
- care in the selection of gains during surveying. Near a source of coherent noise (eg powerline) the signal gain should be selected to minimize data rejections.

Consideration should also be given to increasing the station spacing in the vicinity of the powerline. This allows additional stacking to be done (at fewer stations) without much of an increase in surveying time.

Several other ways to increase the number of channels free of the powerline affects are:

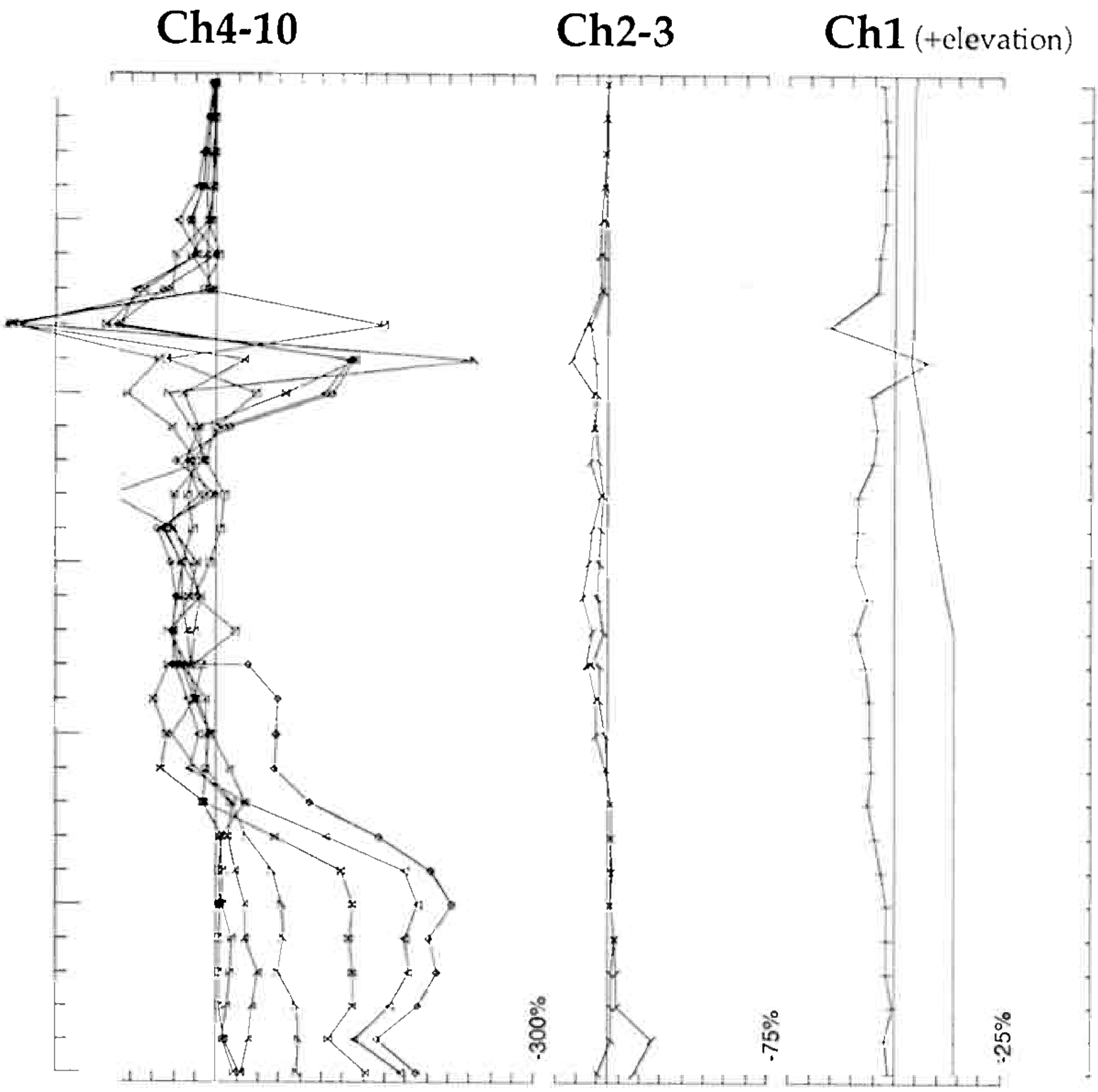
- lowering the frequency: each factor of two lower in frequency would add a channel relatively free of the affects of the powerline. The cost would be increased stacking time at each station.

- taking multiple readings: each reading starts at a different (random) point on the 60-cycle waveform. The sum of several readings will tend to better average out any affect.

- alternative channel sampling: Figure E2b) shows the standard UTEM 3 Boxcar channel sampling. An alternative - tapered channel sampling - is available (and often used) with UTEM 4. In this case if tapered sampling had been available it would likely have been used. The result would have been:

  - a slightly noisier Ch3
  - a considerably improved Ch4
  - an improved Ch5

  The choice of which sampling to use on a UTEM 4 survey depends on the frequency of the survey, the proximity and the frequency of any local powerline and the type of decay seen.



Loop:	Secondary, (Chn-Ch1/Hpl	
Line	Contin. Norm at a depth of 0m	
Compt: Hz	Base Freq. 3.872Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

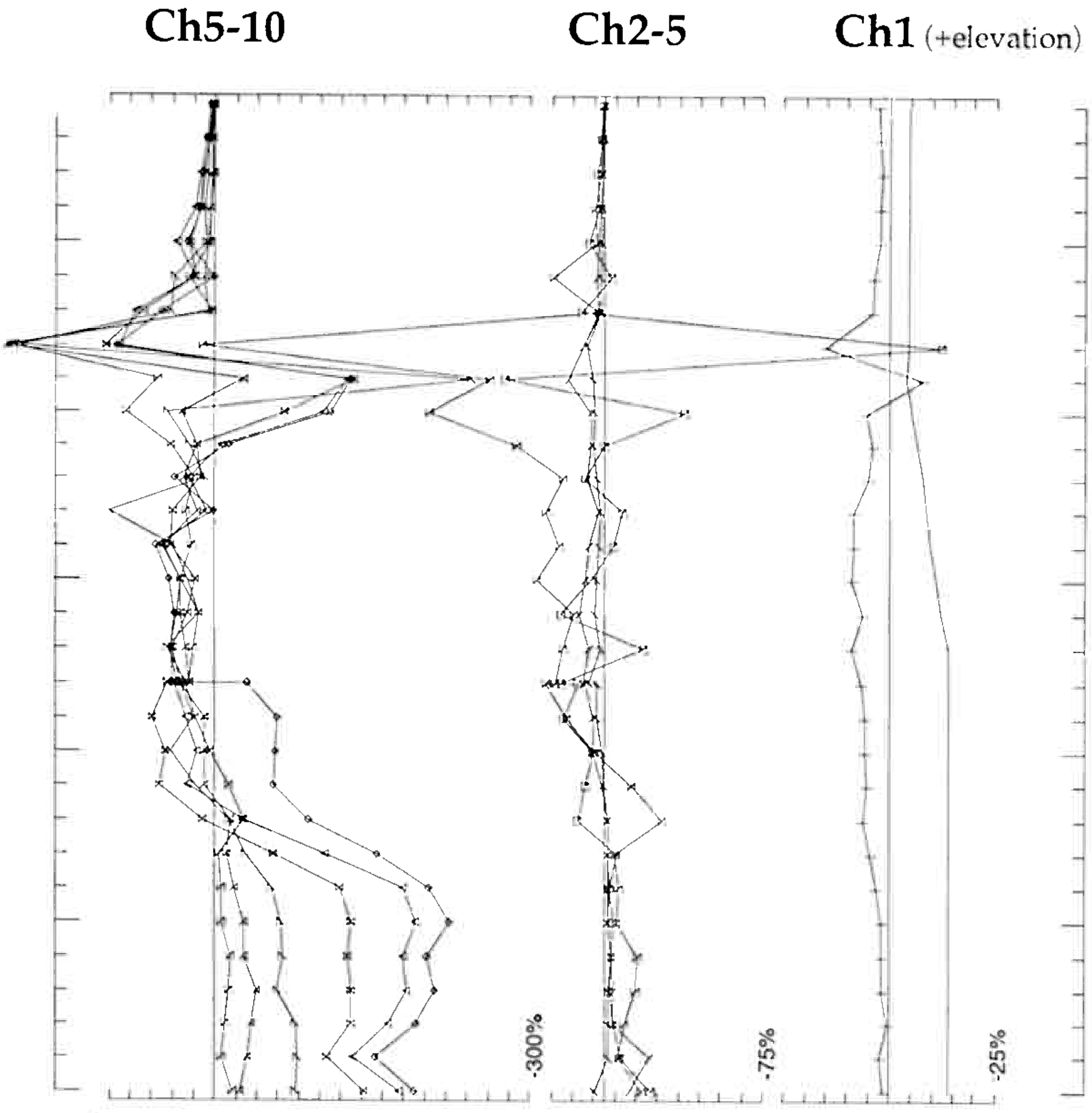
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Appendix E

Figure E1(a)

Original 4Hz data: alternative format

Figure E1a



Loop:	Secondary, (Chn-Ch1/Hpl		
Line	Contin. Norm at a depth of 0m		
Compt: Hz	Base Freq. 3.872Hz	LAMONTAGNE	GEOPHYSICS LTD GEOPHYSIQUE LTEE

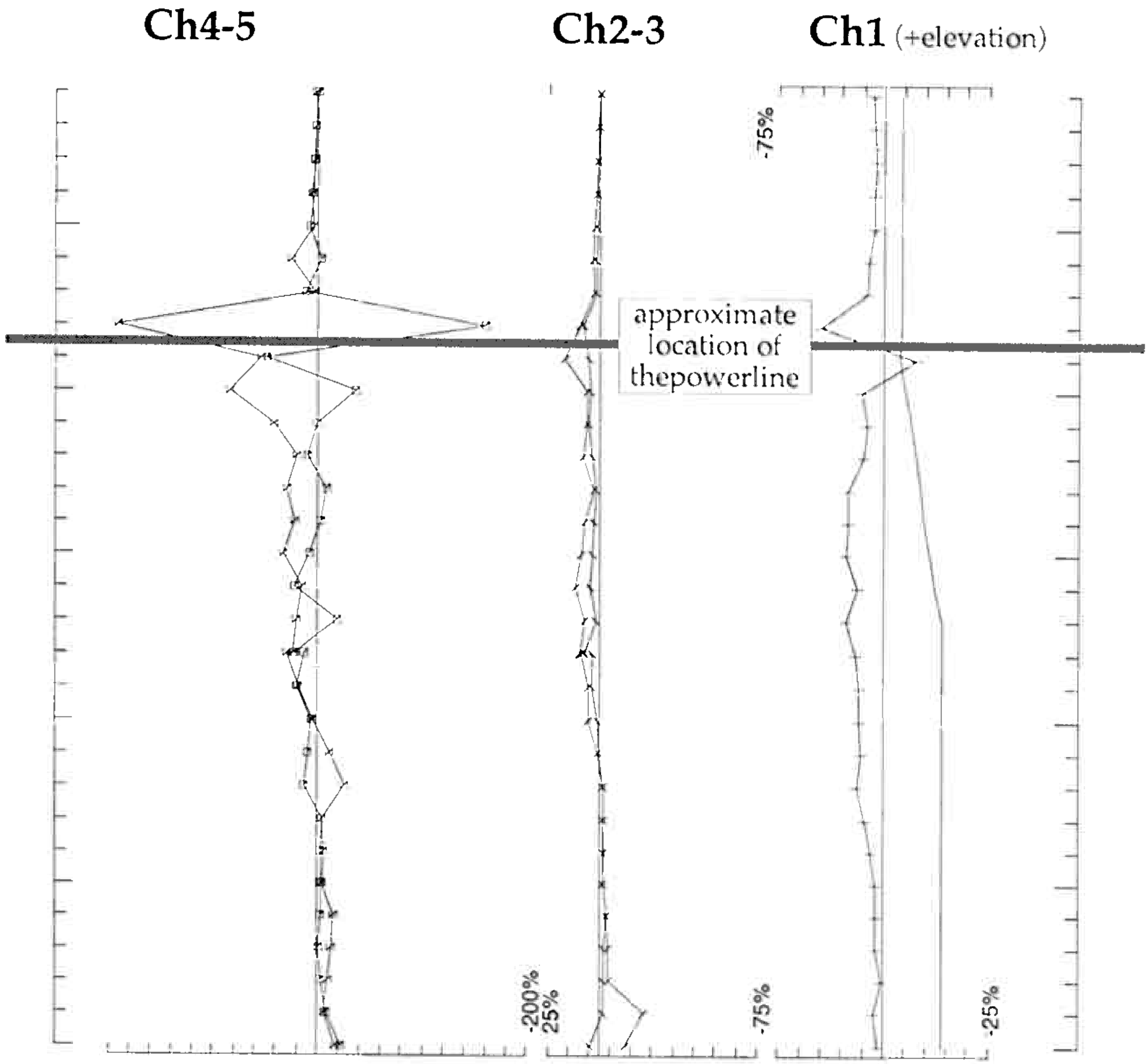
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Appendix E

Figure E1(b)

Original 4Hz data: standard format

Figure E1b



Loop:	Secondary, (Chn-Ch1 / Hp)	
Line	Contin. Norm at a depth of 0m	
Compt: Hz	Base Freq. 3.872Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

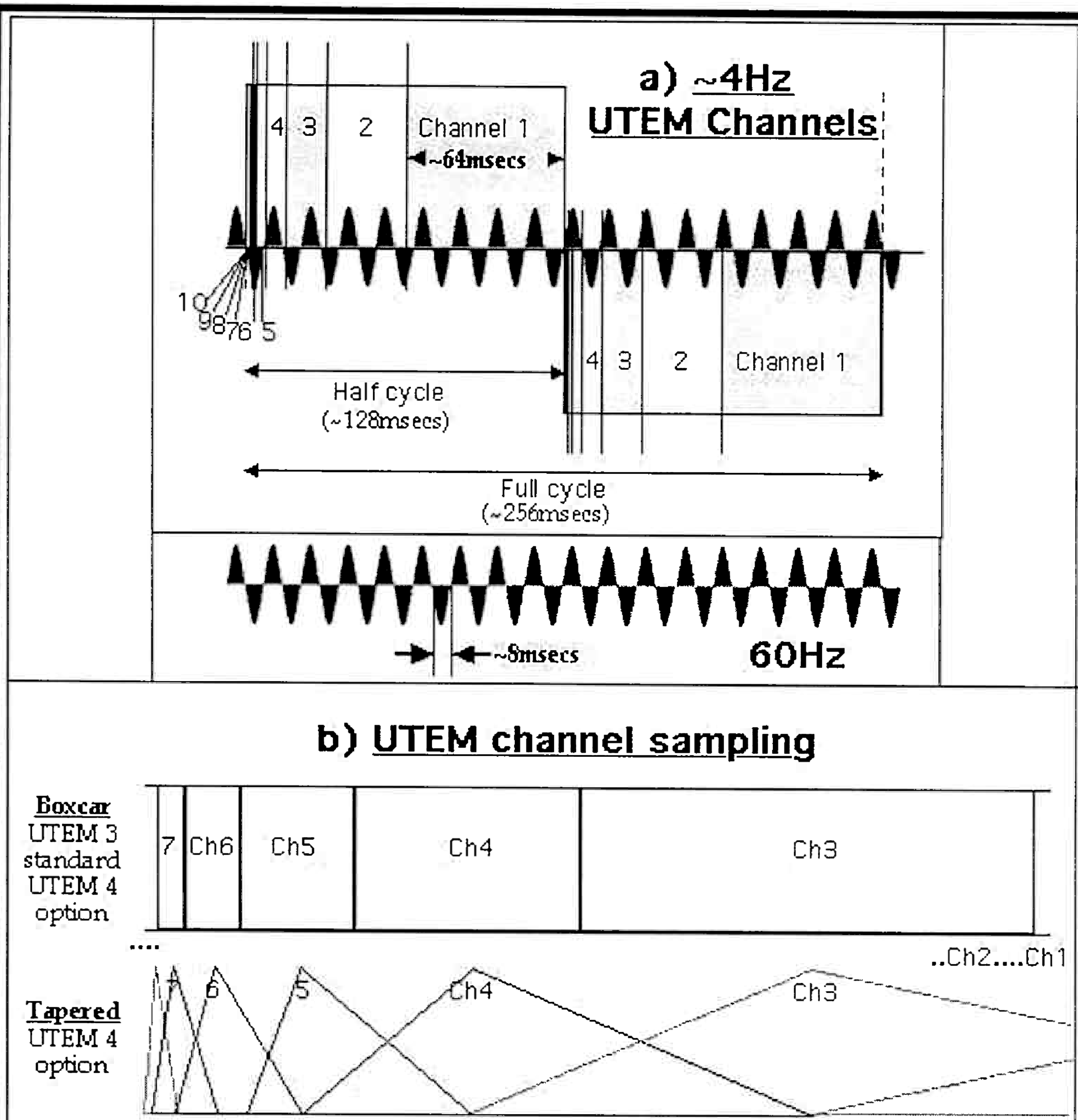
LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

Appendix E

Figure E1(c)

Original 4Hz data: Ch4/5 detail

Figure E1c



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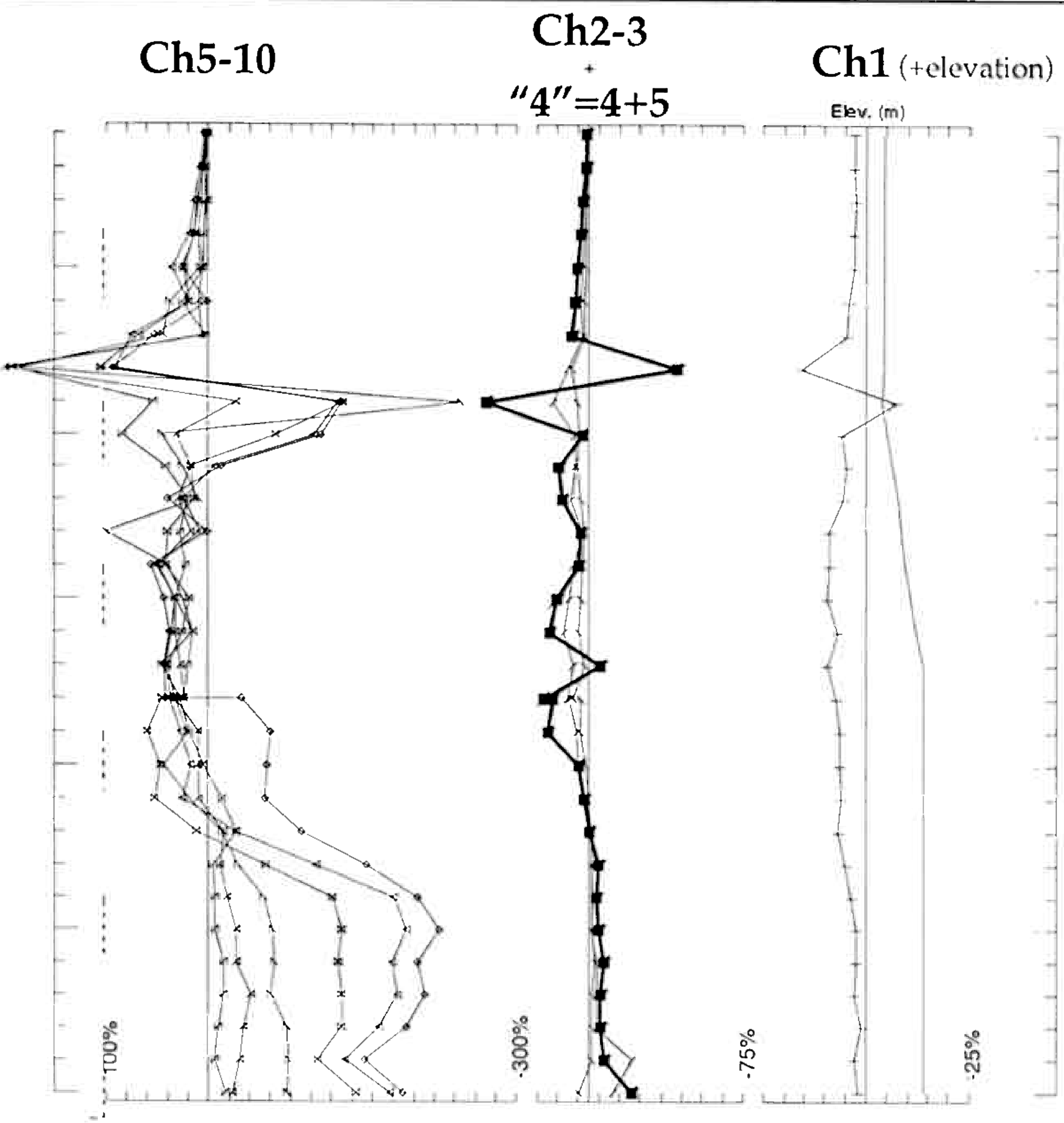
Appendix E

Figure E2

a) ~4Hz UTEM Channels with 60Hz signal
b) UTEM Channel sampling options

Figure E2



Loop:	Secondary, (Chn-Ch1 / Hpl	
Line	Contin. Norm at a depth of 0m	
Compt: Hz	Base Freq. 3.872Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

"modified" Ch4
=
2/3(Ch4+1/2Ch5)

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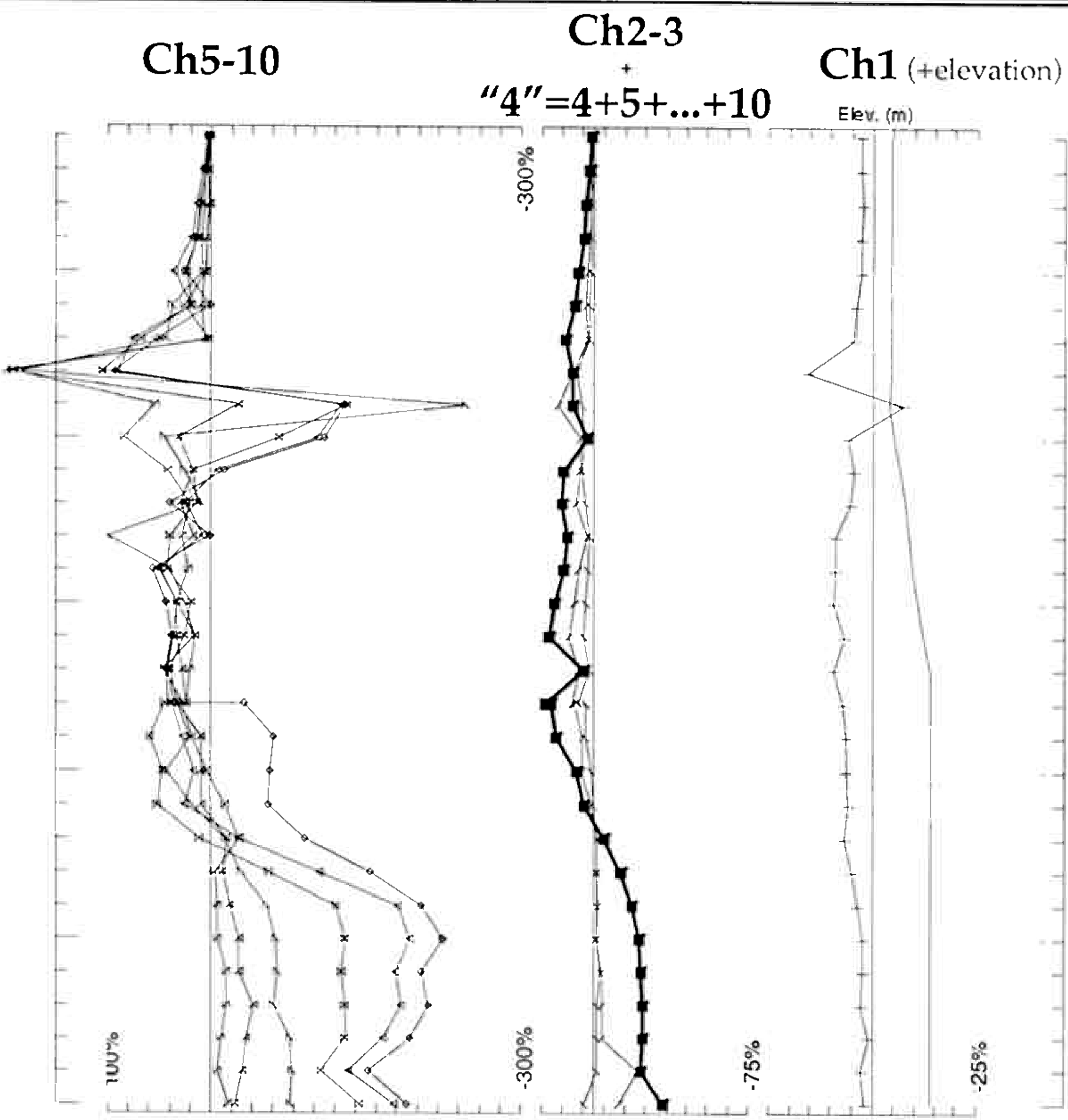
Appendix E

Figure E3(a)

Modified 4Hz data: Ch4/5 combined

Figure E3a



Loop:	Secondary, (Chn-Ch1/Hpl	
Line	Contin. Norm at a depth of 0m	
Compt: Hz	Base Freq. 3.872Hz	LAMONTAGNE GEOPHYSICS LTD GEOPHYSIQUE LTEE

"modified" Ch4
=
1/2Ch4+1/4Ch5+1/8Ch6+1/16Ch7)+
1/32Ch8+1/64Ch9+1/128Ch10+
1/128Ch10
Note: extra 1/128Ch10 to ~complete "modified" Ch4

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Appendix E

Figure E3(b)

Modified 4Hz data: Ch4-10 combined

Figure E3b

Appendix F

Discussion of Noise Issue in Very Resistive Terrains

Discussion of noise issue in very resistive terrains

From the standpoint of data collection during a UTEM survey there are a number of different sources of "noise" - natural, cultural, coil motion, instrumental and geological. For the purpose of this discussion the following distinction is made:

- "true" noise - results in poor repeatability and is due to:
  - a noise field composed of: power line fields, sferic fields due to thunderstorm activity worldwide, other natural EM sources (micropulsations, etc), or
  - coil motion due to the effect of wind either: moving the the coil directly, causing movement in the ground near trees or undulating the ice surface of a large frozen lake.

  In the case of poor repeatability increased stacking time will improve things.
- geological noise - in resistive areas profiles show scatter but features are repeatable. The scatter in the data is due to short-wavelength geological responses which are spatially undersampled. In this case increased stacking time will not improve things. Repeat readings that are in agreement, however, serve to confirm that the scatter represents geological noise.

  Note that if the features are of interest a finer station spacing may resolve them.

So repeated readings should tell whether noisy-looking data is due to poor repeatability or short-wavelength geological responses.

UTEM surveys carried out at the Ertelien Project area in early 2006 and on projects in northern Norway in late 2005 were carried out over very resistive terrain and ran into very noisy conditions. The following is a discussion of the noise issue as it affects these surveys and the strategies/changes that have been employed/made to combat it.

Overall the high noise issue as it affects UTEM surveys carried out over very resistive terrain - including the 2006 Ertelien Project UTEM survey and the 2005 northern Norway surveys - can be resolved into three factors:

- surveying in/over very resistive terrain
- the nature of the target(?) conductor(s) in very resistive terrain
- the combination of the response of a powerline and the noise associated with a powerline

A look at each of these factors follows. Note that there is some overlap between the three factors.

Surveying in/over very resistive terrain

When conductive overburden or a typically conductive country rock is present very little of the natural sferic field penetrates to the geological conductors. The noise field at the earth's surface is ~horizontally-polarized. In terms of how this affects a typical UTEM survey it means that:

- when measuring Hz - the vertical component and the component most often measured - noise levels are typically lower and stacking times are chosen to allow accurate measurement of the smaller secondary field in the presence of the (typically) stronger primary field.

- when measuring Hx/Hy - horizontal components - noise levels are typically higher and stacking times are chosen to allow accurate measurement of the small secondary field in the presence of higher noise levels. In relatively flat terrain the horizontal component of the primary field is typically weak.

Over very resistive terrain the noise field becomes somewhat less horizontally-polarized. A significant component of the noise field penetrates to the geological conductors. The result is a tilted noise field - more noise is in the vertical component.

In addition over very resistive terrain there is an increase in geological noise due to induced current channeling in discrete faults and overburden channels. The vertical noise field in particular is amplified by current channeling anomalies.

Result: stacking times for Hz measurements must be increased to allow accurate measurement of the secondary field in the presence of higher noise levels. Increased stacking time will not affect scatter in the data that represents geological noise. Repeat readings will serve to confirm if the scatter represents geological noise.

<u>The nature of the target(?) conductor(s) in very resistive terrain</u>

The presence of a good, consistent conductive feature will make UTEM data look very clean - secondary currents flow in a "well organized" fashion and give a good response. A larger response forces the use of a coarser plotting scale - visually "suppressing" noise even further.

In very resistive areas there is little or no background response present. If there are no local features of appreciable size present to give rise to a response then virtually all you see on a profile is a combination of "true" noise and geological noise. In this instance plotting scales are often blown up in an attempt to reveal whether subtle responses are present - and noise is visually "amplified".

Weakly-conductive features - especially those that are broken up and vary in character/orientation along strike - produce geological noise on a profile. In very resistive terrain even very weakly-conductive features will channel current. The overall result can be line-to-line variable, "scattered" responses that give the profiles the appearance of an increase in noise in general. These weakly-conductive variable features also affect the noise field. The vertical noise field in particular is amplified by current channeling anomalies in very resistive terrain.

Very long geological conductors tilt the natural (for our purposes noise) field in their vicinity giving rise to cross-over tilt angle anomalies - more noise in the vertical component. Since the natural fields are very large scale and the conductors very long the response of very long geological conductors is much greater in proportion than what the UTEM data would lead us to believe.

The net affect on an off-loop UTEM survey appears in one of two fashions:

- locally high noise levels at one or more stations near the "geologically-noisy" feature.

  Result: stacking times for Hz measurements must be increased at the noisy stations to allow accurate measurement of the secondary field but stacking times can be reduced again once the noisy section is passed. If there is an indication that the noise is geological then repeat readings should be taken.

- high noise levels that start abruptly at the "geologically noisy" feature and persist beyond it.

  Result: stacking times for Hz measurements must be increased abruptly at the "geologically noisy" feature and increased stacking must be continued at all stations beyond (further from the loop). If there is an indication that the noise is geological then repeat readings should be taken.

Note that in the field it may take a while for an operator to determine the correct procedure to follow. Abruptly increasing the stacking time and doing repeat readings can add significantly to the survey time. For reference at 3.251Hz approximate reading times are as follows for single readings and to cover 100m (4 stations):

	single	100m @25m
512 stack	~2min 50secs	~11min 20secs
x2 = 1K stack	~5min 40secs	~22min 30secs
x2 = 2K stack	~11min 10secs	~44min 50secs
x2 = 4K stack	~22min 20secs	~89min 25secs
x2 = 8K stack	~44min 40secs	~178min 40secs

As an example increasing from a 512 stack to a 1K stack and doing a repeat reading will take the stacking time from ~2min 50secs (~11min 20secs/100m) to ~~11min 20secs (~44min 50secs/100m). Note also that to the operator in the field abruptly noisy data looks very much like an instrument problem. In checking for instrumental problems some additional delay will occur.

<u>The combination of the response of a powerline and the powerline noise</u>

A typical UTEM survey is affected by the presence of a powerline in two ways:

- There will be a response due to the powerline. The response will be coincident with the powerline and can serve to mask other conductive features. The nature of a powerline response varies depending on the powerline's: characteristics, location with-respect-to the transmitter loop and geological setting. Note that in resistive terrain all power line return currents are concentrated in long geological conductors rather than being dispersed throughout the conductive earth.
  The option of "stripping" the powerline response exists - this can reveal the presence of any masked conductive features. Data used in "stripping" the response is typically collected on a more detailed traverse across the powerline.

Result: surveying time will be increased somewhat because of the increased stacking required to collect data accurate enough to allow "stripping" to reveal any masked features. In some cases a few additional stations will be surveyed.

- There will be EM noise present due to any operating powerline. Noise levels increase as the powerline is approached. Power line noise normally is strongest on the vertical component near a power line and becomes more horizontal at a distance because of induction in the earth. This rotation towards the horizontal occurs much farther away from the power line in resistive terrain than in a conductive area. In very resistive terrain powerline noise in the vertical component will persist to a considerably distance. For some powerlines the noise levels will be high enough to force the data to be collected at a lowered signal gain. For many larger powerlines noise levels very close to the powerline are high enough that data cannot be collected at all.

Result: surveying time will be increased because of the increased stacking required to overcome the higher noise levels. Some coverage in the immediate vicinity of the powerline may be missed due to very high noise levels.

Strategies/changes that have been employed/made to combat the noise issue

In order to overcome the noise a number of strategies/changes have been employed/made:

- stacking increased
  improves data quality when dealing with "true" noise but @3.251Hz readings can become quite long
- readings repeated where there are indications that the noise is geological
  repeat readings that are in agreement serve to confirm that scatter in the data represents geological noise.
- increased station spacing at some chosen distance from the loop front
  a trade off between improved data quality and station sampling when readings @3.251Hz become quite long - see above.
- higher pre-whitening levels used where possible
  improves noise rejection but the UTEM 3 transmitter is required to run close to the rise-time limit - transmitter operation can be finicky at this level, especially if there are powerlines in the vicinity.
- the use of heavier gauge wire
  larger wire = allows higher current = improves signal-to-noise ratio
  Improved signal-to-noise ratio means that less stacking is required for the same level of data quality.
- where possible a switch to in-loop surveying
  in-loop = considerably stronger applied field = improved signal-to-noise ratio
  Note: in-loop surveying is less sensitive to small, steeply-dipping conductors.