





ASSE VIARIO MARCHE – UMBRIA E QUADRILATERO DI PENETRAZIONE INTERNA MAXI LOTTO 2

LAVORI DI COMPLETAMENTO DELLA DIRETTRICE PERUGIA ANCONA:
SS. 318 DI “VALFABBRICA”. TRATTO PIANELLO – VALFABBRICA
SS. 76 “VAL D’ESINO”. TRATTI FOSSATO VICO – CANCELLI E ALBACINA – SERRA SAN QUIRICO
“PEDEMONTANA DELLE MARCHE”, TRATTO FABRIANO – MUCCIA – SFERCIA

PROGETTO ESECUTIVO

CONTRAENTE GENERALE: 	<i>Il responsabile del Contraente Generale:</i> Ing. Federico Montanari	<i>Il responsabile Integrazioni delle Prestazioni Specialistiche:</i> Ing. Salvatore Lieto
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PROGETTAZIONE: Associazione Temporanea di Imprese Mandataria:			
			

RESPONSABILE DELLA PROGETTAZIONE PER L'ATI Ing. Antonio Grimaldi GEOLOGO Dott. Geol. Fabrizio Pontoni COORDINATORE DELLA SICUREZZA IN FASE DI PROGETTAZIONE Ing. Michele Curiale			
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IL RESPONSABILE DEL PROCEDIMENTO Ing. Giulio Petrizzelli		
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2.1.3 - PEDEMONTANA DELLE MARCHE 3° stralcio funzionale: Castelraimondo nord - Castelraimondo sud 4° stralcio funzionale: Castelraimondo sud - innesto S.S. 77 a Muccia GEOTECNICA Raccolta indagini geofisiche - Campagna 2006	SCALA: - DATA: Marzo 2020
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Codice Unico di Progetto (CUP) F12C03000050021 (Assegnato CIPE 23-12-2015)

Codice Elaborato:		Opera	Tratto	Settore	CEE	WBS	Id. doc.	N. prog.	Rev.
		L 0 7 0 3	2 1 3	E	0 2	G E 0 0 0 1	R E L	0 8	A
REV.	DATA	DESCRIZIONE			Redatto		Controllato	Approvato	
A	Marzo 2020	Emissione per consegna			PROGIN	F. Pontoni	S. Lieto	A. Grimaldi	



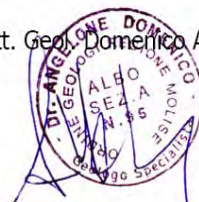
COMMITTENTE:	DIR.P.A. s.c.ar.l.
CANTIERE:	LOTTO 2.2.1
LOCALITA':	CERRETO D'ESI-ESANATOGLIA-MATELICA-CAMERINO-MUCCIA

"CERRETO D'ESI-ESANATOGLIA-MATELICA-CAMERINO-MUCCIA"

Esecuzione Indagini Geofisiche

QUADERNO INDAGINI GEOFISICHE

Dott. Geol. Domenico Angelone



PREMESSA

Il presente elaborato costituisce la sintesi di una campagna di indagini geofisiche condotte nel mese di DICEMBRE 2006 finalizzate alla progettazione dell'asse viario Marche-Umbria e Quadrilatero di penetrazione relativamente al lotto 2.2.1 "Pedemontana", nei territori comunali di Cerreto D'Esi, Matelica, Esanatoglia, Camerino, Muccia.

Le prospezioni eseguite constano di n. 26 profili sismici a rifrazione in onda P, n. 3 in onda S e di n. 4 prove Down Hole, allo scopo di caratterizzare da un punto di vista dinamico le varie formazioni affioranti nell'area e di individuare le porzioni maggiormente allentate, ovvero il rapporto tra coperture poco rigide e substrato compatto.

1. PERSONALE ED APPARECCHIATURE IMPIEGATI NEL RILIEVO

Per l'esecuzione della campagna geofisica sono state utilizzate le seguenti attrezzature e personale.

Attrezzature per il rilievo sismico.

- ◊ n. 1 sismografo GEOMETRICS mod. GEODE a 24 canali ad incremento di segnale;
- ◊ n. 3 accumulatori per sismografo (12 V C.C.);
- ◊ n. 1 PC portatile con processore Pentium III - 800 MHz;
- ◊ n. 12 geofoni orizzontali Geospace 10 Hz e n. 12 geofoni verticali Mark products 14 Hz;
- ◊ n. 1 starter piezoelettrico costituito da "Hammer Switch" della Geometrics Inc.;
- ◊ n. 1 tripletta di geofoni 10 Hz (2 orizzontali ed 1 verticale) Mod. Sensor dotati di sistema di ancoraggio pneumatico;
- ◊ n. 1 geofono ricevitore posto in prossimità del foro MOD. Sensor 14 Hz;
- ◊ martello da 10 Kg.;
- ◊ batterie di aste a sezione rettangolare;
- ◊ compressore.

Personale

- ◊ n. 1 geofisico prospettore ;
- ◊ n. 1 aiuto prospettore.



Esempio della stazione di acquisizione mediante Geode Geometrics



2. **RISORSE HARDWARE E SOFTWARE UTILIZZATE**

Lo strumento di registrazione utilizzato per l'acquisizione dei dati sismici fa parte della gamma dei prodotti *Geometrics*, vale a dire GEODE controllato in remoto da un pc portatile con processore da 800 Mhz. Questo strumento è dotato di un convertitore analogico-digitale a 24 bit ed un amplificatore IFP a 24 dB che determinano una dinamica (dynamic range) di 120 dB, in grado di riprodurre in modo molto accurato il segnale sismico, anche nelle sue componenti in frequenza più elevate.

Il range di intervallo di campionamento varia da 20.833 ms (durata max totale di 1,365 secondi) sino a 16 ms (durata max totale di 17 minuti e 48,576 secondi). I dati acquisiti in formato SEG-2, sono stati visionati, filtrati e studiati per il "picking" mediante il software specifico di Seisimager, Winpick della OYO Corp.

3. PROSPEZIONE SISMICA A RIFRAZIONE

3.1 Metodologia operativa del profilo sismico

Per l'esecuzione delle prospezioni sono stati usati 12 geofoni da 10 Hz (orizzontali) e 14 Hz (verticali) equidistanziati lungo 26 linee sismiche secondo diverse configurazioni, come meglio specificato nelle tavole di seguito allegate.

Per generare onde di compressione e di taglio ci si è avvalsi, per ogni punto di scoppio, di una sorgente energizzante costituita da un fucile sismico.

Allo scopo sono stati eseguiti 7 scoppi per ogni linea sismica, di cui 5 interni e due esterni.

3.2 Metodologia interpretativa

Per la interpretazione delle velocità e degli spessori dei sismostrati è stata condotta la correzione statica, ovvero la correzione degli errori indotti sui tempi di arrivo dall'andamento discontinuo della topografia, in quanto in tutti gli stendimenti i 12 geofoni ed i relativi scoppi risultavano disposti a quote relative differenti. L'elaborazione dei dati sperimentali è stata eseguita su un calcolatore IBM compatibile utilizzando un programma di calcolo della suite di Seisimager basato sul metodo della modellazione del sottosuolo su base anisotropica previa elaborazione mediante metodologie iterative R.T.C. (ray Tracing Curvilineo) ed algoritmi di ricostruzione tomografica ad elevata densità di informazioni del campo delle velocità.

4. RISULTATI

I risultati dell'indagine geofisica illustrati nella presente relazione hanno permesso di caratterizzare da un punto di vista sismico le varie formazioni geolitologiche ad uguale comportamento dal punto di vista della trasmissione elastica delle onde di compressione.

Da ciò è stato possibile definire per tutta la lunghezza degli stendimenti degli intervalli di velocità e di distinguere i vari sismostrati.

Come si evince dai grafici e tabelle allegate, il sottosuolo investigato può essere schematizzato in quattro intervalli sismostratigrafici:

1. terreno areato e coperture vegetali/riporto;
 2. coperture pluvio colluviali o detrito di falda a vario grado di cementazione;
 3. substrato alterato e destrutturato, o intensamente fratturato;
 4. substrato compatto.
- a. Unità geosismica caratterizzata da valori delle velocità delle onde P non

- superiori ai 600 m/s (correlabili a valori delle $V_s < 300$ m/s); essa costituisce in ogni caso lo strato di copertura costituito da terreno vegetale; interessa spessori variabili dal decimetro a qualche metro;
- b. Unità geosismica da correlare ai depositi colluviali e detrito di falda, caratterizzati da valori di V_p compresi tra 1000 e 1800 m/s, associate a valori di V_s non superiori ai 600 m/s. Gli spessori di tale sismostrato sono variabili dal metro sino a 10-15 metri.
 - c. Unità geosismica caratterizzata da valori di V_p superiori ai 1800 m/s ma comunque non superiori ai 2400 m/s, da correlare al substrato superficiale alterato costituito da calcari e calcari marnosi nonché marne; per tale sismostrato le proprietà elastiche di tagli risultano ottime con valori di $V_s > 800$ m/s ma comunque non superiori ai 1100 m/s.
 - d. unità geosismica riferibile al substrato compatto, poco fratturato dotato di ottime proprietà elastiche sia di compressione ($V_p > 3500$ m/s) che di taglio ($V_s > 1200$ m/s).

5. **IL TEST SISMICO DOWN HOLE**

La prova Down - Hole è una delle più comunemente usate per la misurazione delle onde di taglio. Il test consiste nell'utilizzare una sorgente reversibile bidirezionale sulla superficie del terreno ed un ricevitore opportunamente orientato e disposto a diverse profondità. La sorgente è posizionata vicino al foro (distanza variabile da 2.50 a 6.00 metri), in modo da poter registrare le onde di taglio e di volume dirette e non rifratte dai diversi strati di terreno. Un opportuno sistema di acquisizione degli output della tripletta consente inoltre la visualizzazione delle tracce delle onde prodotte dalla sorgente.

Per identificare facilmente gli arrivi delle onde di taglio, una sorgente di downhole deve produrre forti impulsi di taglio e trascurabili quelli di compressione.

Quello che si misura nella prova downhole è la velocità delle onde di taglio bidirezionali polarizzate nel piano orizzontale (SH), quindi si utilizzano due geofoni orizzontali ortogonali tra loro ed un geofono verticale utilizzato per acquisire le onde di compressione. In prossimità del boccaforno è stato posizionato un geofono ricevitore al fine di verificare ad ogni battuta l'eventuale ritardo del trigger.

6. **METODOLOGIA INTERPRETATIVA**

L'energizzazione necessaria a sviluppare le onde S è stata effettuata tramite un martello di 10 Kg., utilizzato per percuotere nelle due opposte direzioni orizzontali un blocco ligneo tenuto solidale al suolo mediante il peso dell'autovettura.

In tal modo l'energia così prodotta ha garantito la trasmissione al terreno dell'impulso di taglio. La trasmissione delle onde di compressione si è ottenuta mediante colpi verticali su una piastra metallica.

Il foro di sondaggio è stato opportunamente rivestito con tubo in PVC e cementato alle pareti del terreno per tutta la lunghezza del foro stesso.

I sismogrammi registrati sono stati posti in correlazione reciproca relativamente alle battute destra e sinistra per meglio individuare i tempi di arrivo delle onde S.

7. I MODULI ELASTICI

Dai dati ottenuti delle down-hole, nota la densità del terreno, è stato possibile ricavare i moduli relativi alle proprietà elastiche dei mezzi attraversati.

In genere le deformazioni di taglio così ottenute sono molto basse (<0.001%) per cui il modulo di taglio è G_{max} . Tale modulo riveste particolare importanza nei problemi dell'interazione dinamica terreno – struttura che coinvolgono grosse deformazioni, tipo le scosse di terremoto; le proprietà dinamiche di bassa ampiezza a partire dai punti di sorgente forniscono infatti importanti dati di riferimento.

I parametri di deformazione del terreno, sono legati al rapporto esistente tra gli incrementi di tensione e deformazioni unitarie, e possono essere:

- di compressione assiale;
- di distorsione, secondo le varie componenti cartesiane;
- di variazione di volume.

Tali parametri non sono costanti, come per un mezzo elastico, ma variano a seconda della storia tensionale del materiale, secondo una sorta di ciclo isteretico, legato al decorso della dello stress, tale che a ciascun decorso di tensione corrispondono degli stati di deformazione. Tale binomio stress-deformazioni costituisce una descrizione completa delle caratteristiche meccaniche del terreno in questione.

Dalla teoria dell'elasticità è pertanto possibile esprimere le proprietà elastiche dei terreni secondo i seguenti parametri:

deformazioni di volume:

MODULO DI COMPRESSIBILITÀ espresso dalla formula $M = (\gamma \cdot V_p^2)/g$

deformazioni di taglio:

MODULO DI TAGLIO espresso dalla formula $G = (\gamma \cdot V_s^2)/g$

MODULO DI YOUNG espresso dalla formula $G = (2\gamma \cdot V_s^2)(1+\nu)/g$

con g = accelerazione di gravità

γ = peso di volume

ν = coefficiente di Poisson

Al fine della valutazione dei cedimenti - a causa del meccanismo di deformazione che si instaura nel terreno - è fondamentale considerare le proprietà elastiche del terreno stesso, esprimibili mediante il coefficiente di Poisson, il quale nei valori minimi e massimi può assumere i seguenti significati:

$\nu = 0 \Rightarrow$ indilatabilità (assenza di deformazione laterale)

$\nu = 0.5 \Rightarrow$ indeformabilità

8. CONCLUSIONI

DH 2101

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)
da m	a m							
0	2	434	274	18.00	0.169	1.379.E+03	3.460.E+03	3.223.E+03
2	7	995	405	19.00	0.401	3.180.E+03	1.919.E+04	8.909.E+03
7	11	1549	491	20.00	0.444	4.920.E+03	4.897.E+04	1.421.E+04
11	25	2120	589	20.00	0.458	7.080.E+03	9.172.E+04	2.065.E+04
25	30	2120	1102	21.00	0.315	2.602.E+04	9.631.E+04	6.843.E+04

DH 2109

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)
da m	a m							
0	5	396	154	19.00	0.411	4.598.E+02	3.040.E+03	1.297.E+03
5	8	1483	361	20.00	0.469	2.660.E+03	4.488.E+04	7.811.E+03
8	14	2242	529	20.00	0.471	5.711.E+03	1.026.E+05	1.680.E+04
14	23	2807	529	20.00	0.482	5.711.E+03	1.608.E+05	1.692.E+04
23	20	2807	947	20.00	0.436	1.830.E+04	1.608.E+05	5.256.E+04

DH 2120

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)
da m	a m							
0	5	832	176	18.00	0.477	5.689.E+02	1.271.E+04	1.680.E+03
5	8	1725	289	19.00	0.486	1.619.E+03	5.769.E+04	4.811.E+03
8	11	1725	479	20.00	0.458	4.682.E+03	6.073.E+04	1.366.E+04
14	19	2083	479	20.00	0.472	4.682.E+03	8.855.E+04	1.379.E+04
19	20	2083	884	20.00	0.390	1.595.E+04	8.855.E+04	4.434.E+04
20	30	2249	884	20.00	0.409	1.595.E+04	1.032.E+05	4.493.E+04

DH 2133

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)
da m	a m							
0	3	595	347	19.00	0.242	2.334.E+03	6.864.E+03	5.800.E+03
3	8	1614	669	20.00	0.396	9.134.E+03	5.316.E+04	2.551.E+04
8	31	2635	1008	21.00	0.414	2.177.E+04	1.488.E+05	6.159.E+04



Dott. Geol. Fabrizio Gilardi



Dott. Geol. Domenico Angelone

PROSPEZIONI SISMICHE A RIFRAZIONE

Allegati numerici e grafici

prospezioni sismiche a rifrazione LOTTO 2.2.1

ID	COORDINATE UTM (WGS84) ZONA 33T				Tot. Metri	n. tiri	prospezioni	
	inizio		fine				onda	onda
	EST	NORD	EST	NORD			S	P
BS2101	334 786.1	4 800 534.1	334 872.1	4 800 450.5	120	7		X
BS2102	334 960.4	4 799 919.4	334 926.6	4 800 036.5	120	7		X
BS2103	334 987.4	4 799 772.9	335 078.0	4 799 704.4	120	7		X
BS2104	334 978.0	4 799 710.4	335 073.3	4 799 779.9	120	7		X
BS2105	335 533.2	4 799 052.2	335 526.8	4 799 165.3	120	7	X	X
BS2106	335 621.7	4 798 854.8	335 560.7	4 798 969.1	120	7		X
BS2107	335 532.4	4 798 866.2	335 633.8	4 798 929.5	120	7		X
BS2108	335 801.3	4 796 847.8	335 740.5	4 796 952.8	120	7		X
BS2109	335 846.7	4 796 739.5	335 801.3	4 796 847.8	120	7		X
BS2110	335 894.9	4 796 630.1	335 846.7	4 796 739.5	120	7		X
BS2111	335 775.6	4 796 759.3	335 667.1	4 796 703.3	120	7		X
BS2112	335 880.9	4 796 807.5	335 775.6	4 796 759.3	120	7		X
BS2113	335 988.6	4 796 863.1	335 880.9	4 796 807.5	120	7		X
BS2114	335 984.1	4 796 979.3	335 963.2	4 796 858.9	120	7		X
BS2115	336 081.0	4 796 070.9	336 023.5	4 796 174.9	120	7		X
BS2116	336 432.0	4 794 707.7	336 483.5	4 794 600.7	120	7		X
BS2117	336 777.5	4 792 602.7	336 789.9	4 792 719.6	120	7		X
BS2118	336 643.3	4 791 740.2	336 612.9	4 791 849.5	120	7	X	X
BS2119	336 566.7	4 791 798.6	336 688.4	4 791 792.5	120	7		X
BS2120	336 616.4	4 791 664.8	336 592.4	4 791 551.1	120	7		X
BS2121	336 592.4	4 791 551.1	336 557.0	4 791 439.7	120	7		X
BS2122	336 679.6	4 790 494.1	336 563.7	4 790 471.9	120	7		X
BS2123	336 630.7	4 790 432.3	336 610.5	4 790 546.7	120	7	X	X
BS2124	341 276.3	4 774 206.3	341 247.3	4 774 322.1	120	7		X
BS2125	341 316.0	4 774 286.8	341 217.3	4 774 228.2	120	7		X
BS2126	341 103.0	4 771 787.4	341 053.5	4 771 678.8	120	7		X
TOTALE					3120 m.		3	26

COORDINATE UTM (WGS84) ZONA 33T				COORDINATE GAUSS BOAGA			
inizio		fine		inizio		fine	
EST	NORD	EST	NORD	EST	NORD	EST	NORD
334 786.1	4 800 534.1	334 872.1	4 800 450.5	2 354 791	4 800 547	2 354 877	4 800 463
334 960.4	4 799 919.4	334 926.6	4 800 036.5	2 354 966	4 799 932	2 354 932	4 800 049
334 987.4	4 799 772.9	335 078.0	4 799 704.4	2 354 993	4 799 786	2 355 083	4 799 717
334 978.0	4 799 710.4	335 073.3	4 799 779.9	2 354 983	4 799 723	2 355 079	4 799 793
335 533.2	4 799 052.2	335 526.8	4 799 165.3	2 355 539	4 799 065	2 355 532	4 799 178
335 532.4	4 798 866.2	335 633.8	4 798 929.5	2 355 538	4 798 879	2 355 639	4 798 942
335 621.7	4 798 854.8	335 560.7	4 798 969.1	2 355 627	4 798 868	2 355 566	4 798 982
335 801.3	4 796 847.8	335 740.5	4 796 952.8	2 355 807	4 796 861	2 355 746	4 796 966
335 846.7	4 796 739.5	335 801.3	4 796 847.8	2 355 852	4 796 752	2 355 807	4 796 861
335 894.9	4 796 630.1	335 846.7	4 796 739.5	2 355 900	4 796 643	2 355 852	4 796 752
335 775.6	4 796 759.3	335 667.1	4 796 703.3	2 355 781	4 796 772	2 355 672	4 796 716
335 880.9	4 796 807.5	335 775.6	4 796 759.3	2 355 886	4 796 820	2 355 781	4 796 772
335 988.6	4 796 863.1	335 880.9	4 796 807.5	2 355 994	4 796 876	2 355 886	4 796 820
335 984.1	4 796 979.3	335 963.2	4 796 858.9	2 355 989	4 796 992	2 355 969	4 796 872
336 081.0	4 796 070.9	336 023.5	4 796 174.9	2 356 086	4 796 084	2 356 029	4 796 188
336 432.0	4 794 707.7	336 483.5	4 794 600.7	2 356 437	4 794 721	2 356 489	4 794 614
336 760.2	4 792 718.1	336 789.9	4 792 719.6	2 356 783	4 792 616	2 356 766	4 792 731
336 643.3	4 791 740.2	336 612.9	4 791 849.5	2 356 649	4 791 753	2 356 618	4 791 862
336 566.7	4 791 798.6	336 688.4	4 791 792.5	2 356 572	4 791 811	2 356 694	4 791 805
336 616.4	4 791 664.8	336 592.4	4 791 551.1	2 356 622	4 791 678	2 356 598	4 791 564
336 592.4	4 791 551.1	336 557.0	4 791 439.7	2 356 598	4 791 564	2 356 562	4 791 453
336 679.6	4 790 494.1	336 563.7	4 790 471.9	2 356 685	4 790 507	2 356 569	4 790 485
336 630.7	4 790 432.3	336 610.5	4 790 546.7	2 356 636	4 790 445	2 356 616	4 790 560
341 276.3	4 774 206.3	341 247.3	4 774 322.1	2 361 283	4 774 219	2 361 254	4 774 334
341 316.0	4 774 286.8	341 217.3	4 774 228.2	2 361 322	4 774 299	2 361 223	4 774 240
341 103.0	4 771 787.4	341 053.5	4 771 678.8	2 361 109	4 771 800	2 361 060	4 771 691

BS210-8910

BS210-111213

BS21-2021



disposizione altimetrica dei geofoni e dei tiri

ID metri	BS 2101	BS 2102	BS 2103	BS 2104	BS 2105	BS 2106	BS 2107	BS 2108	BS 2109	BS 2110
* -5.00	0.00	0.00	23.78	0.00	0.00	7.28	-5.70	0.60	0.00	2.70
↓ 0.00	0.00	0.36	21.87	-0.19	0.65	6.96	-5.77	0.48	-0.37	2.70
↓ 10.00	0.00	0.82	19.68	0.16	2.16	5.83	-5.81	3.35	-0.88	2.81
* 15.00	0.00	1.25	18.55	0.30	3.02	5.73	-4.37	3.40	-1.00	2.65
↓ 20.00	0.00	1.64	17.43	0.45	3.89	5.61	-4.81	3.49	-1.14	2.57
↓ 30.00	0.00	2.51	15.24	0.69	5.83	5.38	-4.12	3.61	-0.63	2.32
* 35.00	0.00	3.02	14.19	0.75	6.69	5.12	-4.10	3.70	-0.15	2.15
↓ 40.00	0.00	3.58	13.15	0.82	7.56	4.97	-4.06	3.79	0.38	2.04
↓ 50.00	0.00	4.34	11.28	1.02	9.72	3.71	-4.15	3.98	0.61	1.80
* 55.00	0.00	4.68	10.50	1.81	10.47	3.07	-4.30	4.00	0.60	1.85
↓ 60.00	0.00	5.03	9.72	2.61	11.23	2.56	-4.43	4.14	0.57	1.93
↓ 70.00	0.00	5.74	7.74	4.54	12.96	1.46	-3.93	4.00	0.57	1.81
* 75.00	0.00	6.00	6.84	5.43	13.71	1.23	-3.67	3.87	0.60	1.74
↓ 80.00	0.00	6.22	5.94	6.32	14.47	0.98	-3.22	3.78	0.60	1.67
↓ 90.00	0.00	7.24	4.25	8.04	15.98	0.41	-2.57	3.61	0.60	1.33
* 95.00	0.00	7.74	3.85	9.65	16.63	0.35	-2.31	3.60	0.60	1.17
↓ 100.00	0.00	8.18	3.46	11.27	17.28	0.31	-2.09	3.53	0.60	0.98
↓ 110.00	0.00	9.06	1.73	14.47	18.14	0.18	-1.38	3.43	0.60	0.41
* 115.00	0.00	9.90	0.00	15.87	20.30	0.00	0.00	3.38	0.60	0.00

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana"



disposizione altimetrica dei geofoni e dei tiri

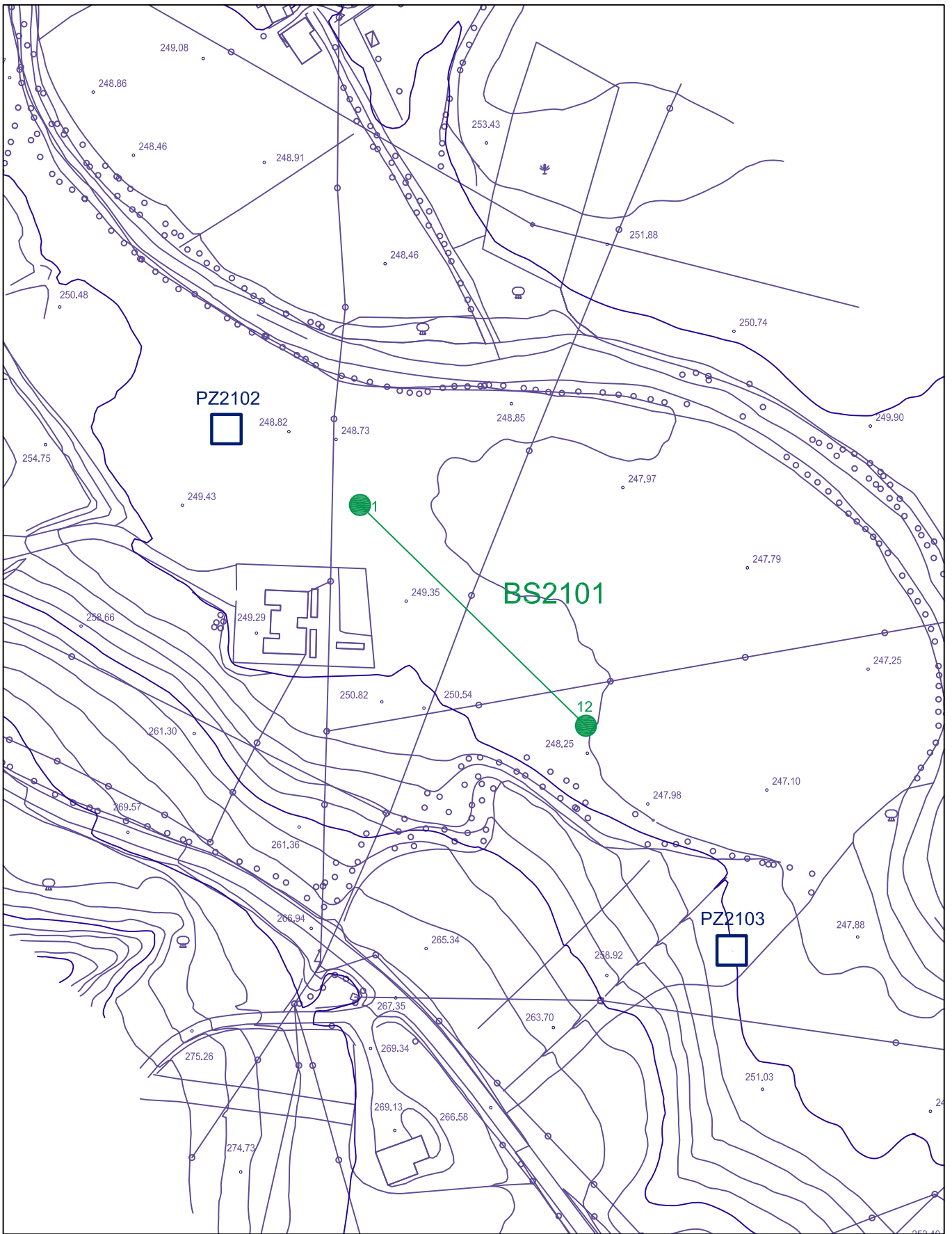
ID metri	BS 2111	BS 2112	BS 2113	BS 2114	BS 2115	BS 2116	BS 2117	BS 2118	BS 2119	BS 2120
* -5.00	23.15	5.15	0.00	0.00	0.00	0.00	23.54	16.80	2.57	0.00
↓ 0.00	23.87	5.68	0.22	0.00	0.00	0.67	21.65	16.34	2.34	0.66
↓ 10.00	25.36	7.13	0.32	0.00	0.00	1.34	19.16	15.15	1.97	1.85
* 15.00	26.00	8.00	0.35	0.00	0.00	1.67	18.00	14.30	1.69	2.40
↓ 20.00	26.53	8.67	0.39	0.00	0.00	2.07	16.93	13.34	1.50	3.03
↓ 30.00	28.47	10.03	0.41	0.00	0.00	3.02	14.44	12.20	0.92	4.54
* 35.00	28.80	10.55	0.41	0.00	0.00	3.43	13.31	11.46	0.58	4.77
↓ 40.00	29.28	11.22	0.41	0.00	0.00	3.82	12.22	11.05	0.18	5.69
↓ 50.00	30.60	12.44	0.43	0.00	0.17	4.26	10.84	9.64	-0.25	6.85
* 55.00	31.15	13.35	0.60	0.00	0.24	4.73	9.94	8.95	-0.25	7.79
↓ 60.00	31.85	14.31	1.32	0.00	0.35	5.16	9.13	8.35	-0.25	8.51
↓ 70.00	33.43	15.78	1.38	0.40	1.45	5.85	8.11	7.56	-0.25	9.91
* 75.00	34.00	16.40	1.43	0.50	1.65	6.21	7.60	7.14	-0.49	10.35
↓ 80.00	34.78	17.08	1.54	0.50	1.85	6.43	7.18	6.62	-0.64	10.67
↓ 90.00	36.07	18.47	1.80	0.50	2.06	7.03	5.79	5.10	-0.39	11.41
* 95.00	36.65	19.10	2.50	0.60	2.17	7.29	4.61	4.03	-1.49	11.84
↓ 100.00	37.20	19.86	3.48	0.60	2.27	7.51	3.54	2.93	-0.58	12.35
↓ 110.00	38.71	21.06	4.57	0.70	2.47	8.14	1.41	0.67	-0.23	13.49
* 115.00	39.45	23.15	5.15	0.70	2.37	8.48	0.00	0.00	0.00	14.57

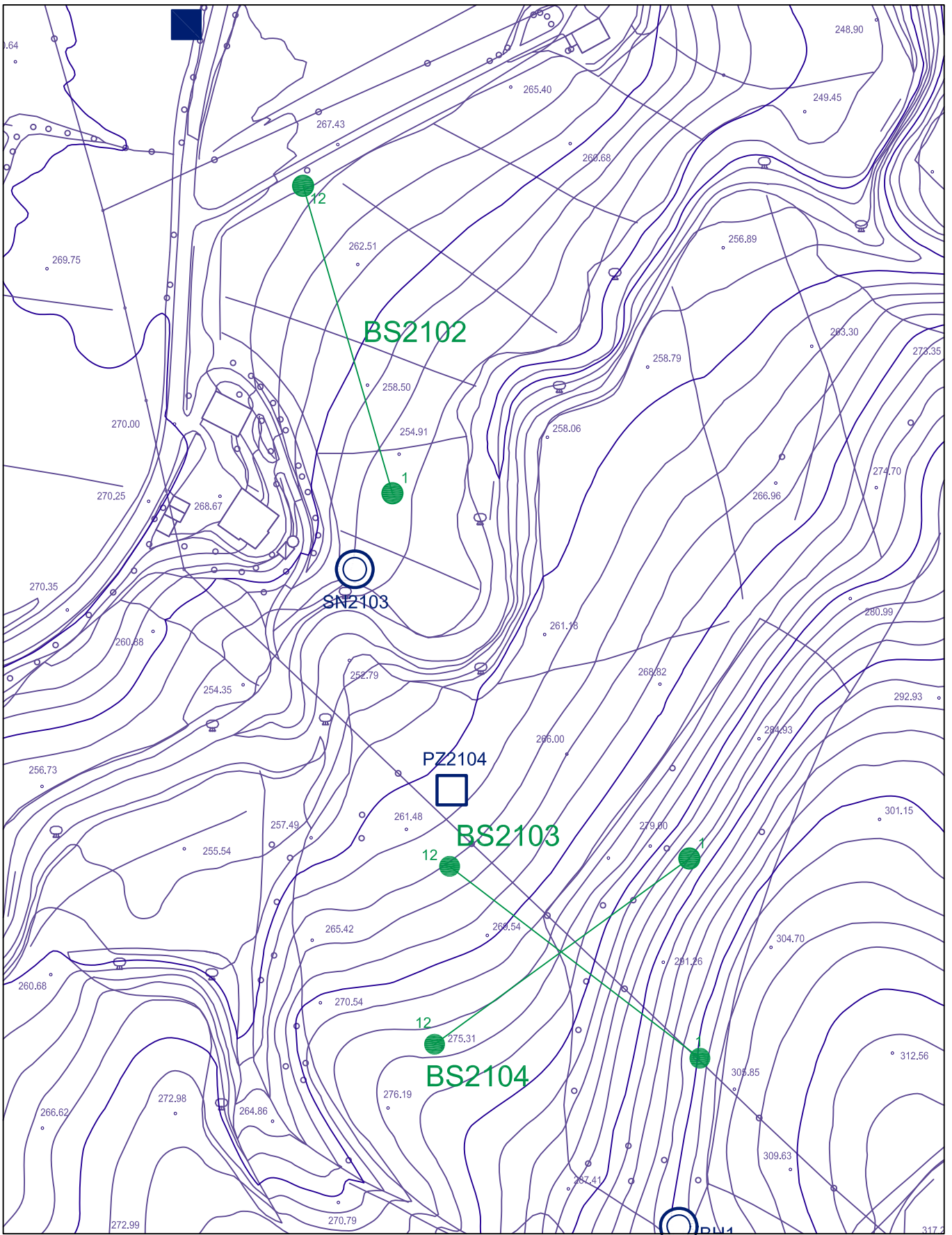
GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana"

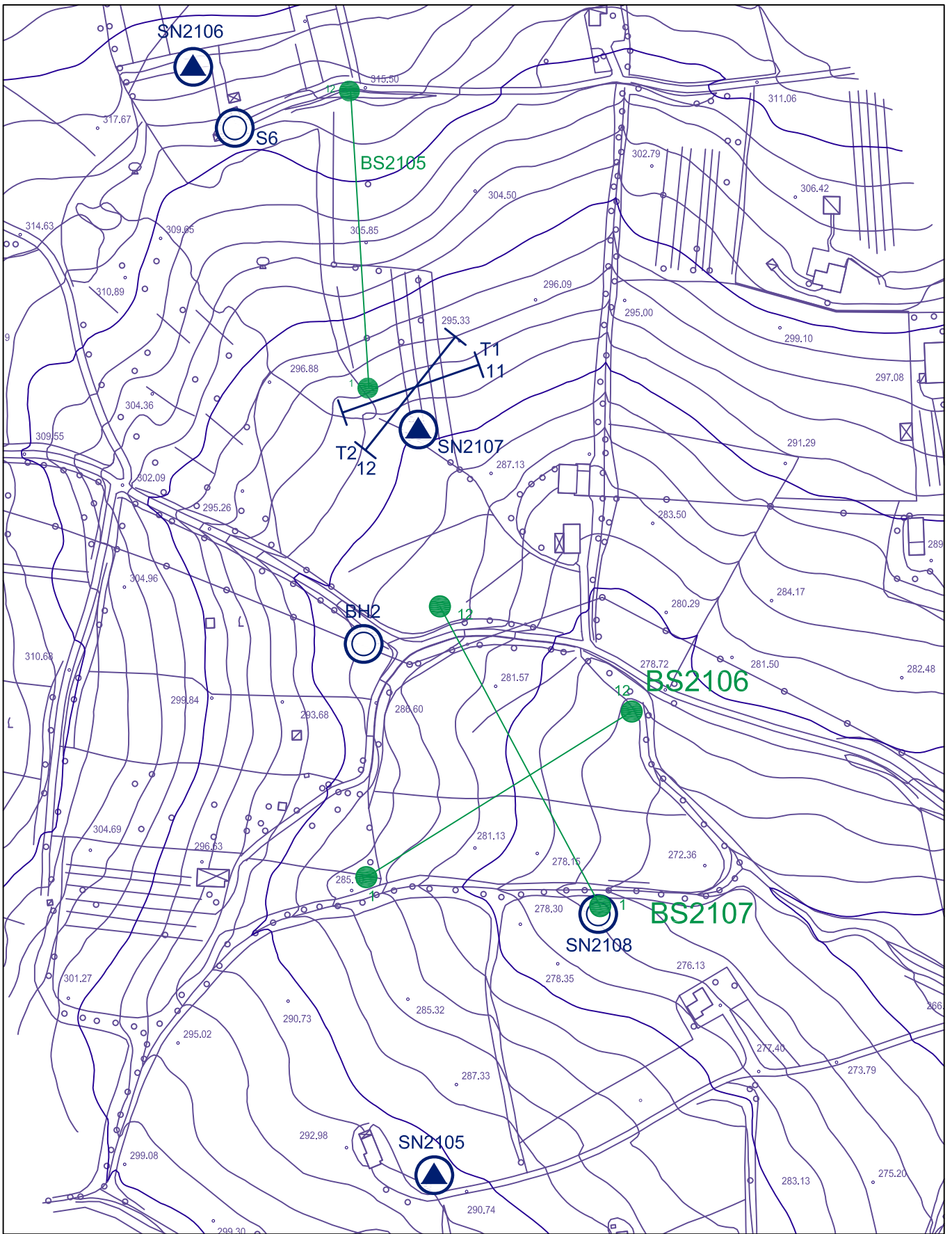


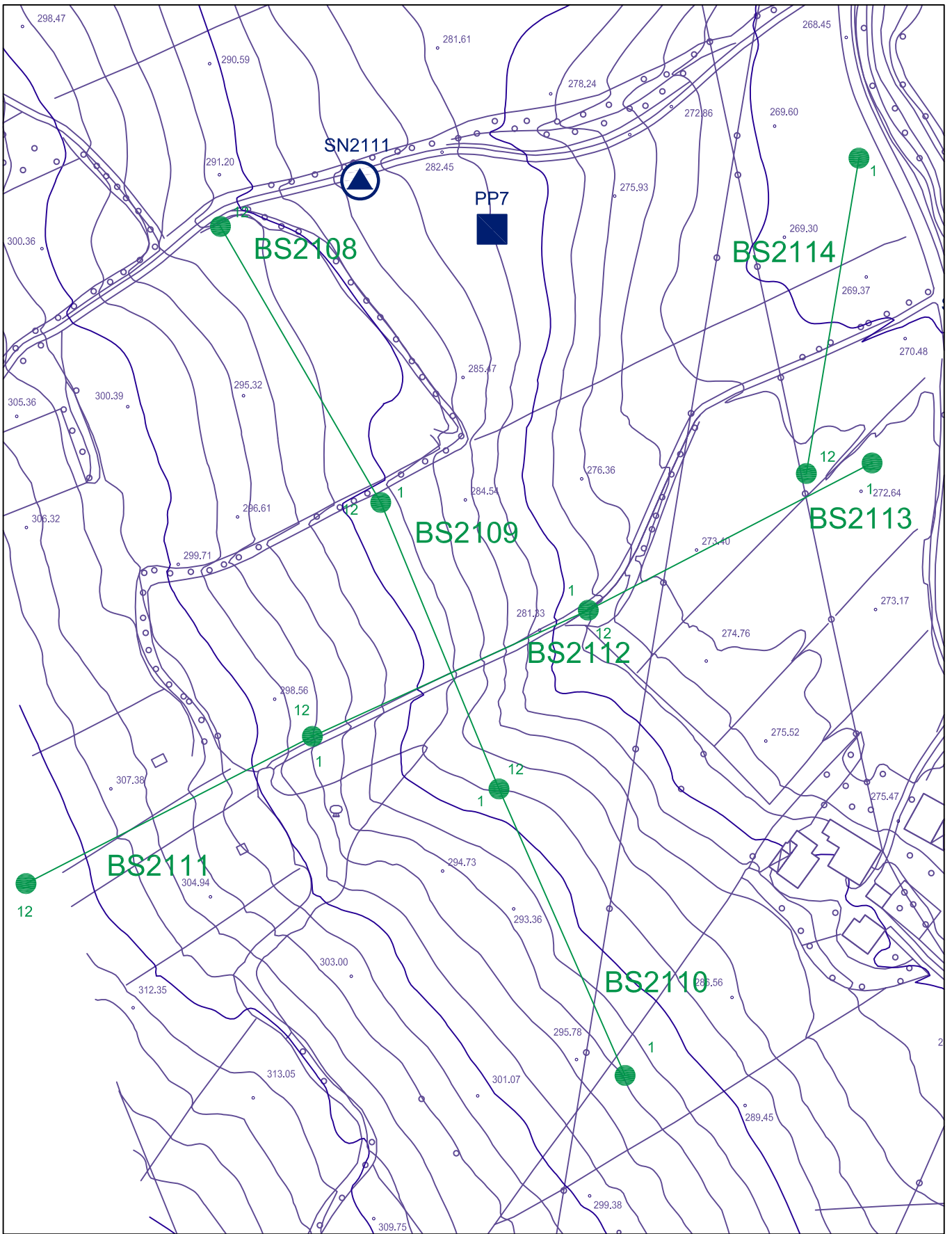
disposizione altimetrica dei geofoni e dei tiri

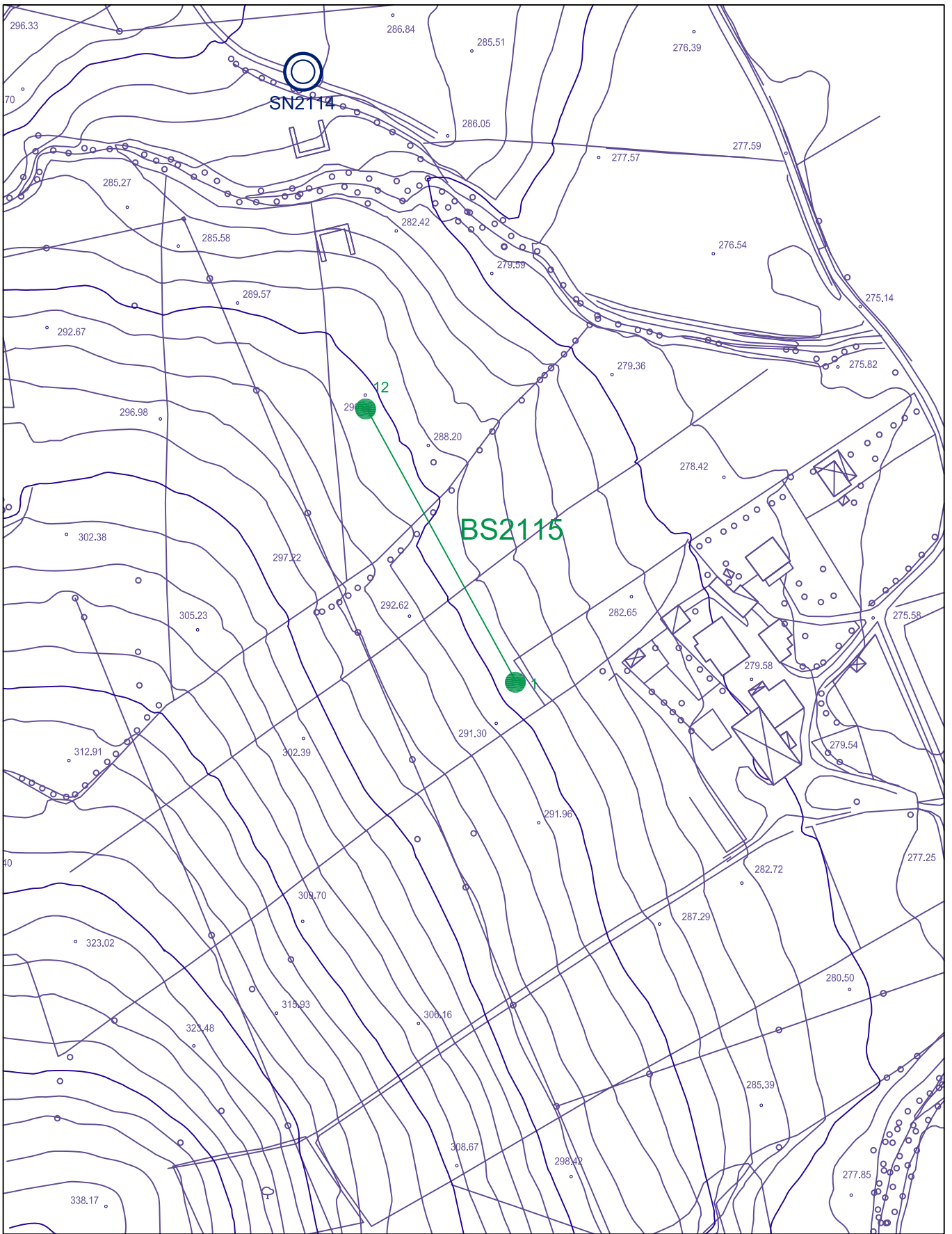
ID metri	BS1121	BS1122	BS1123	BS1124	BS1125	BS1126
* -5.00	14.57	0.00	0.00	0.00	0.00	0.00
↓ 0.00	15.23	0.10	0.61	-0.75	0.15	-0.73
↓ 10.00	16.12	0.20	1.01	-1.25	0.90	-0.98
* 15.00	16.59	0.25	1.86	-1.37	1.20	-1.22
↓ 20.00	17.08	0.30	3.21	-1.49	1.50	-1.47
↓ 30.00	17.95	0.50	6.60	-1.99	1.50	-4.16
* 35.00	18.39	0.80	8.22	-2.24	1.20	-5.75
↓ 40.00	19.01	1.21	10.02	-2.49	0.90	-7.34
↓ 50.00	21.96	1.73	13.04	-2.99	0.30	-10.28
* 55.00	22.11	1.88	14.63	-3.86	0.00	-11.62
↓ 60.00	22.45	2.15	16.22	-4.73	-0.30	-12.97
↓ 70.00	23.29	2.93	19.03	-6.23	-1.50	-15.42
* 75.00	23.66	2.93	20.06	-7.22	-2.10	-16.27
↓ 80.00	23.97	2.93	21.10	-8.22	-2.70	-17.13
↓ 90.00	25.14	3.25	23.08	-10.21	-3.90	-17.62
* 95.00	25.52	3.50	24.04	-10.84	-4.28	-17.86
↓ 100.00	26.26	3.81	24.99	-11.46	-4.65	-18.11
↓ 110.00	27.16	4.76	26.80	-12.21	-4.20	-19.09
* 115.00	27.58	5.00	28.20	-13.70	-4.20	-20.80

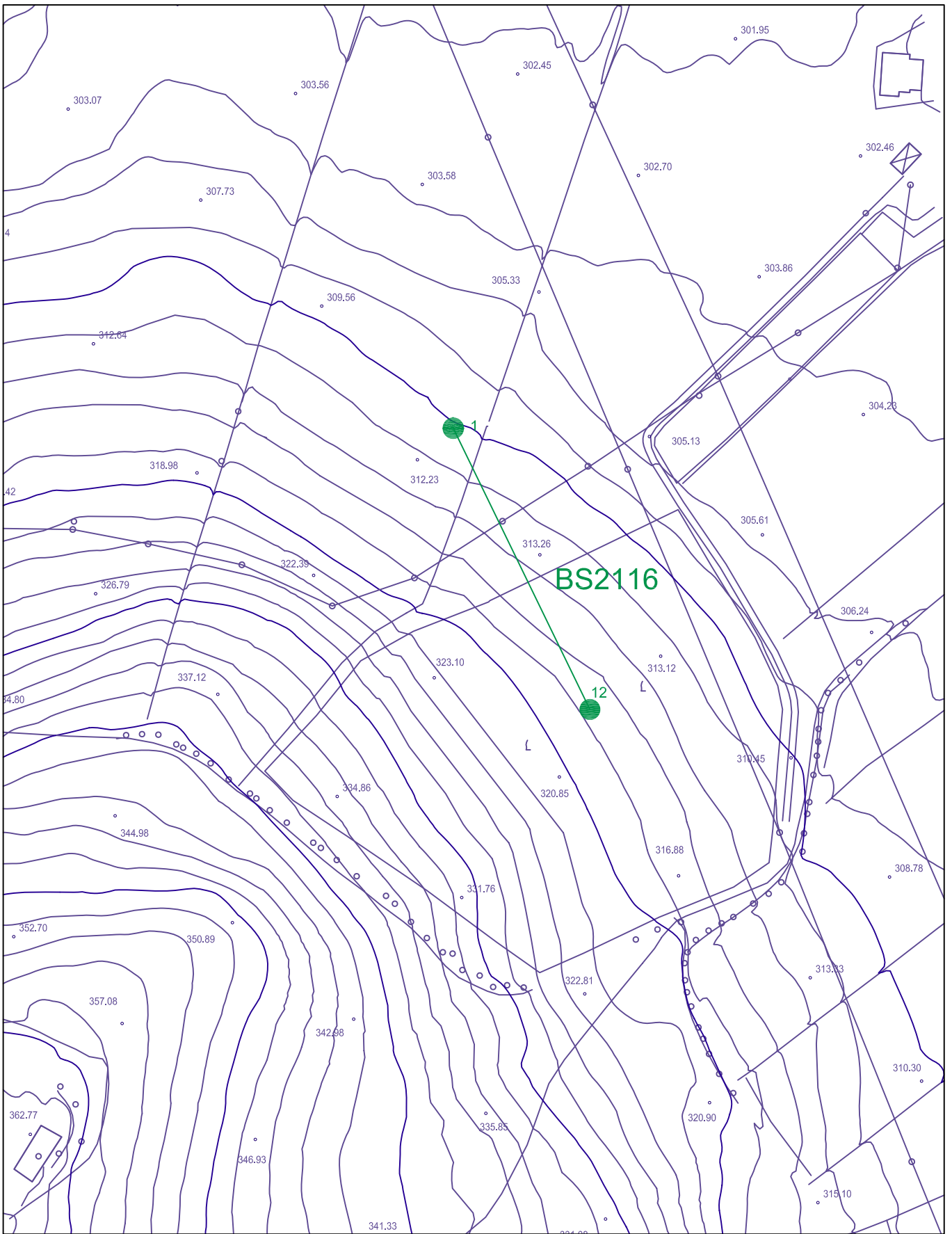


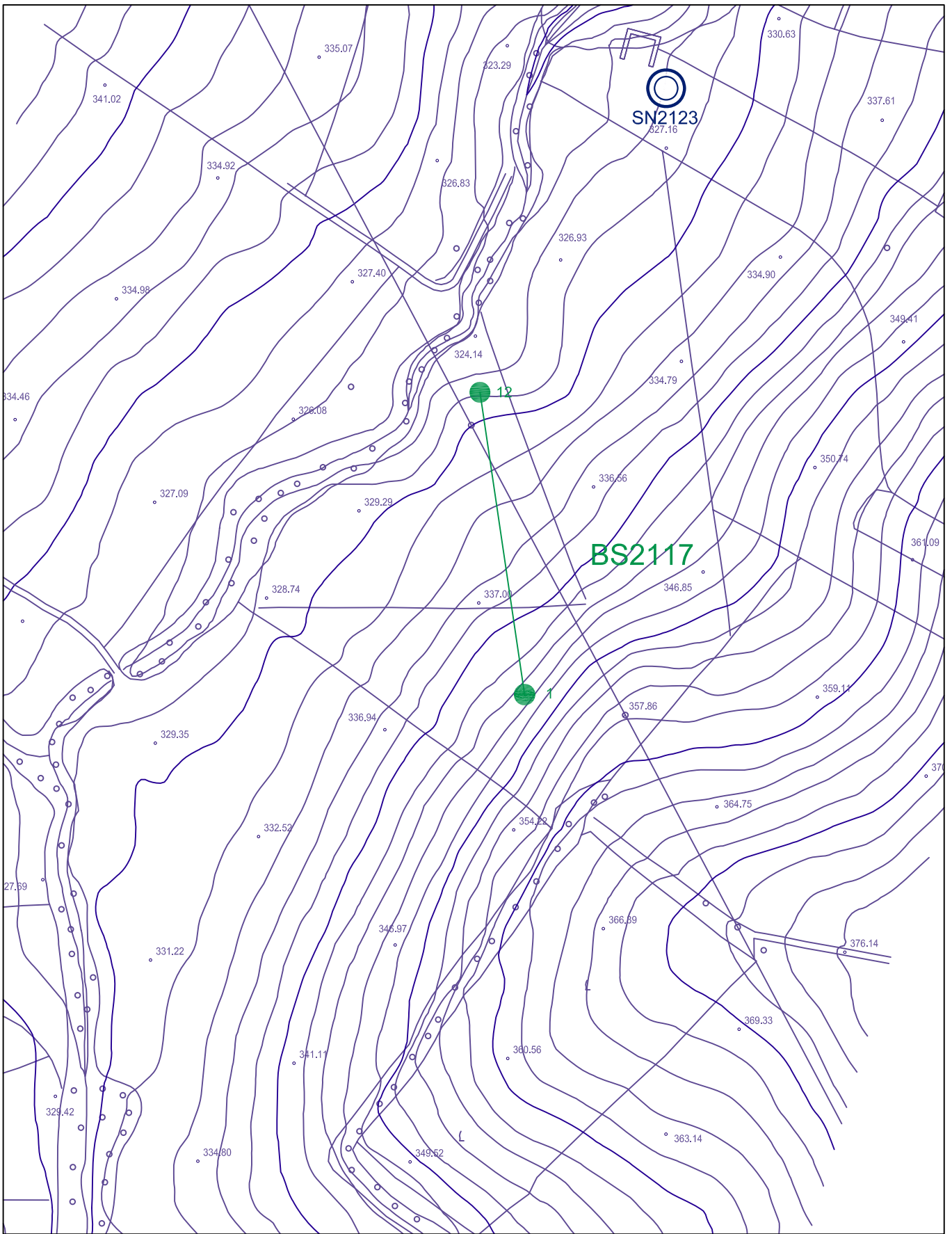


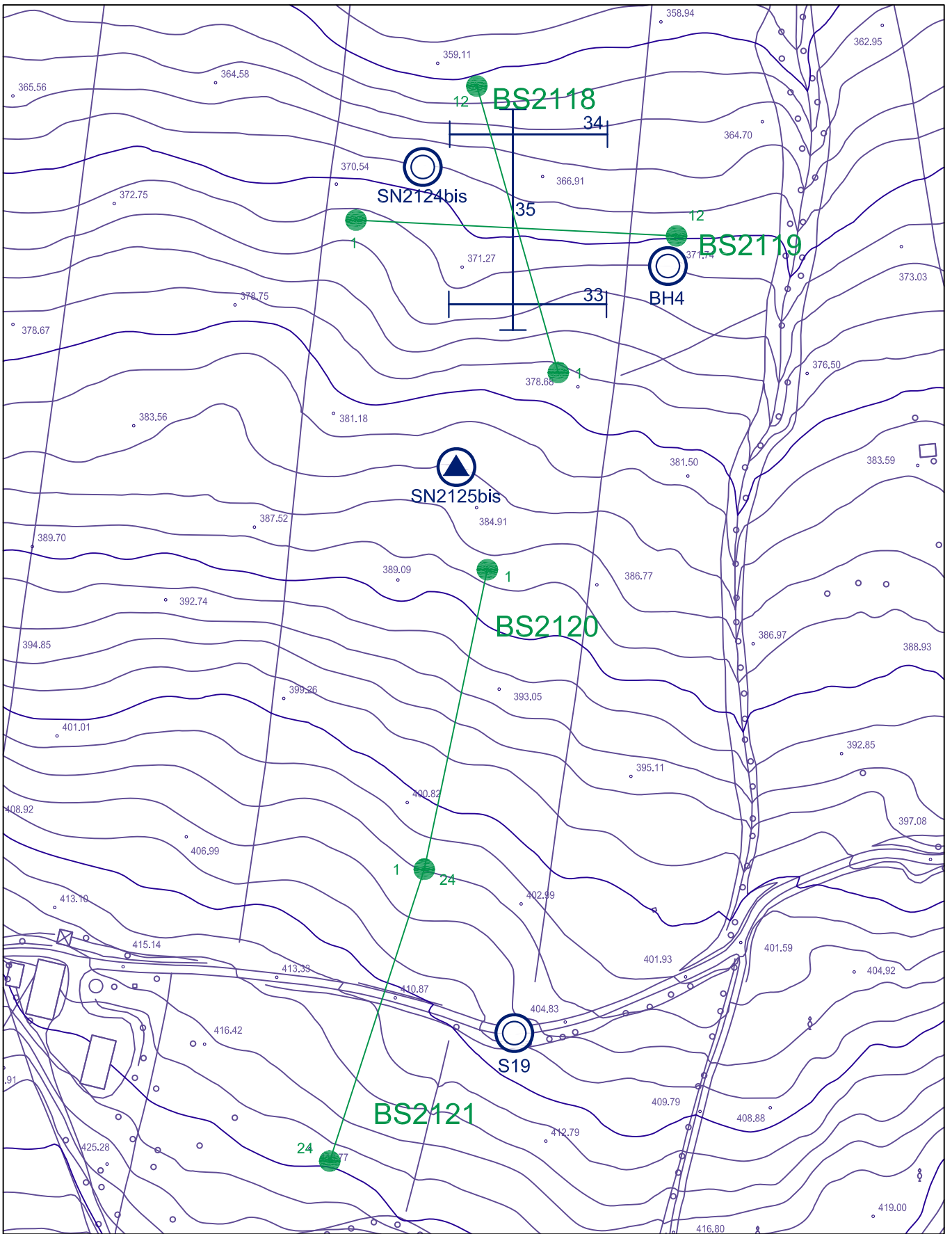


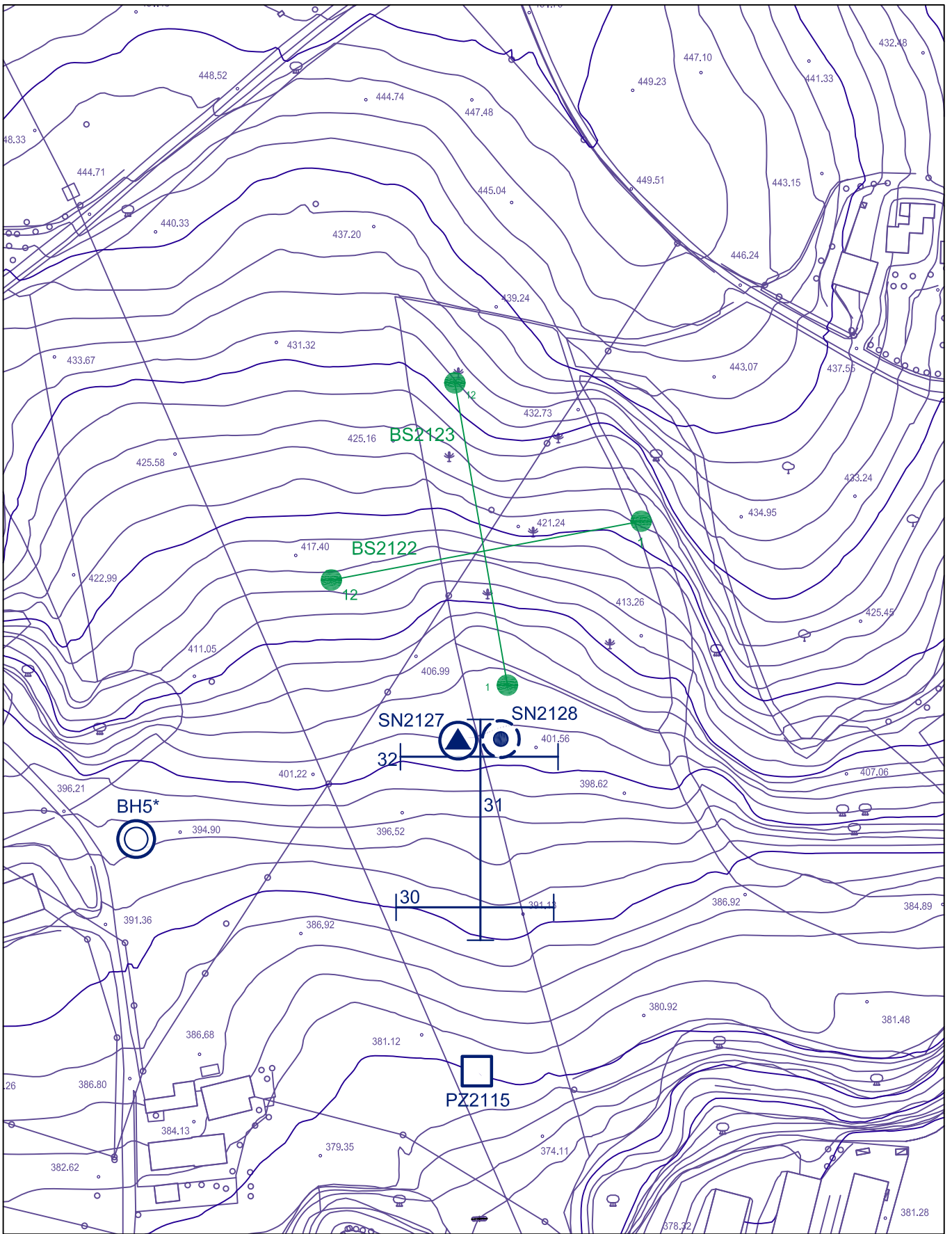


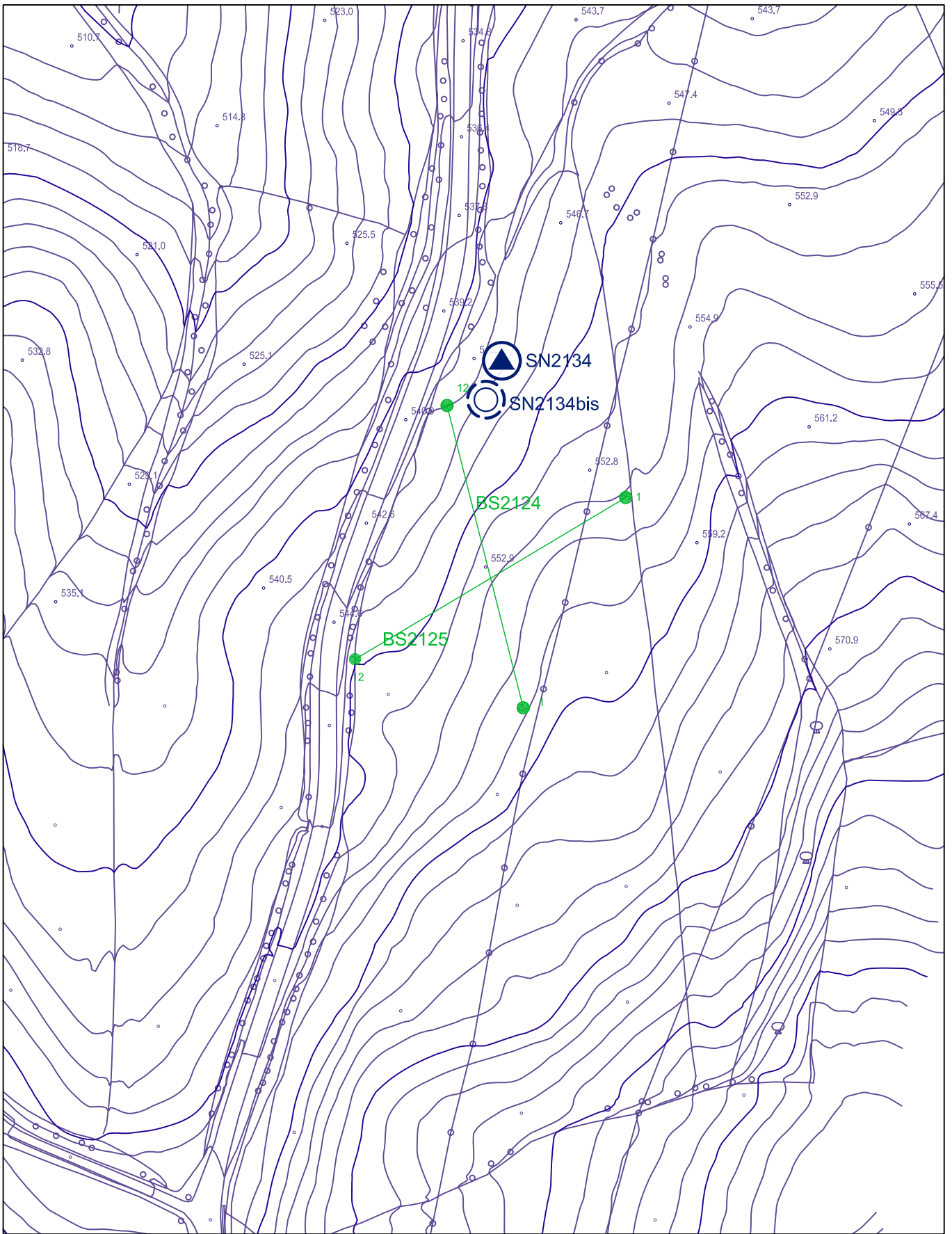


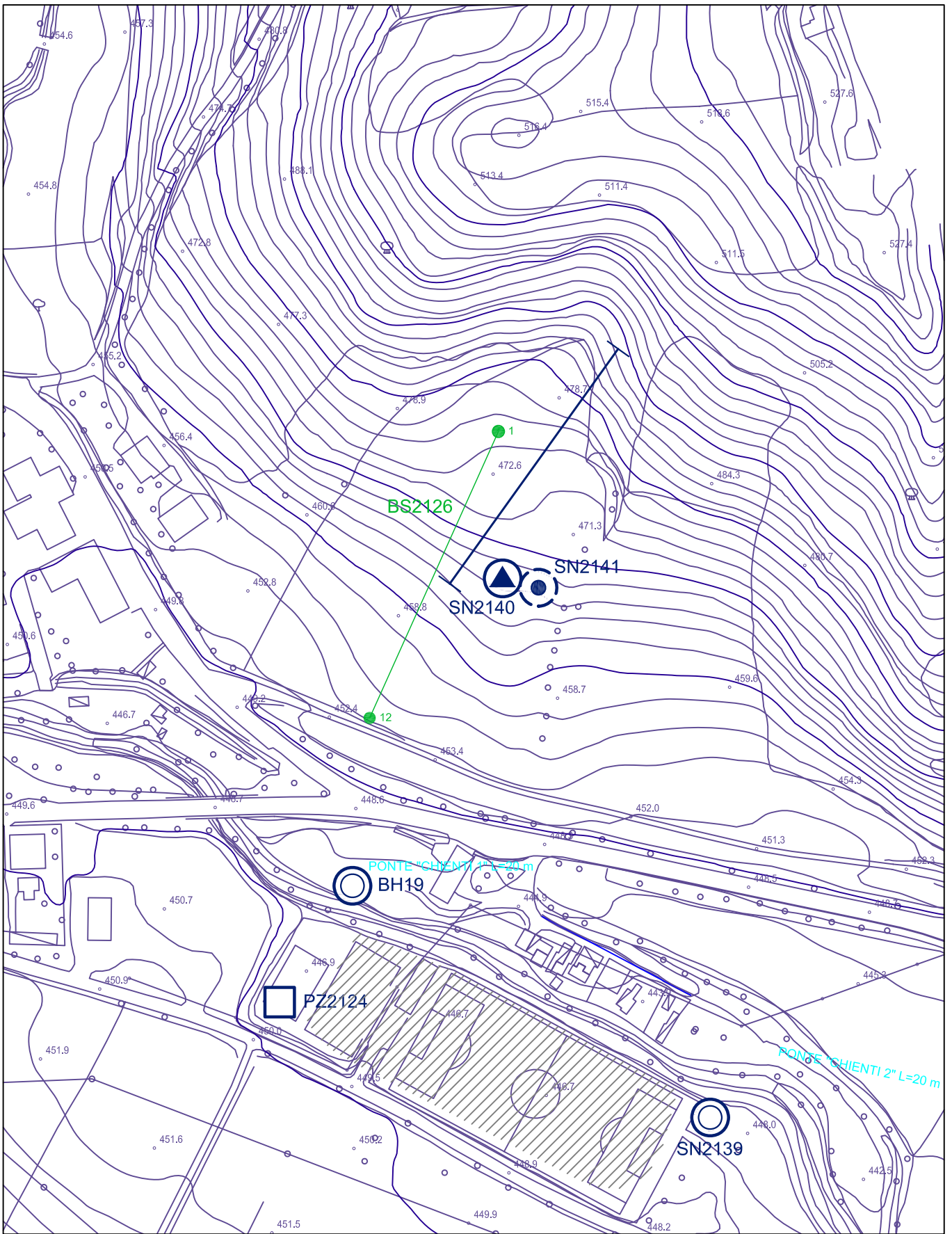












BASE SISMICA 2101



INPUT DATA BS 2101

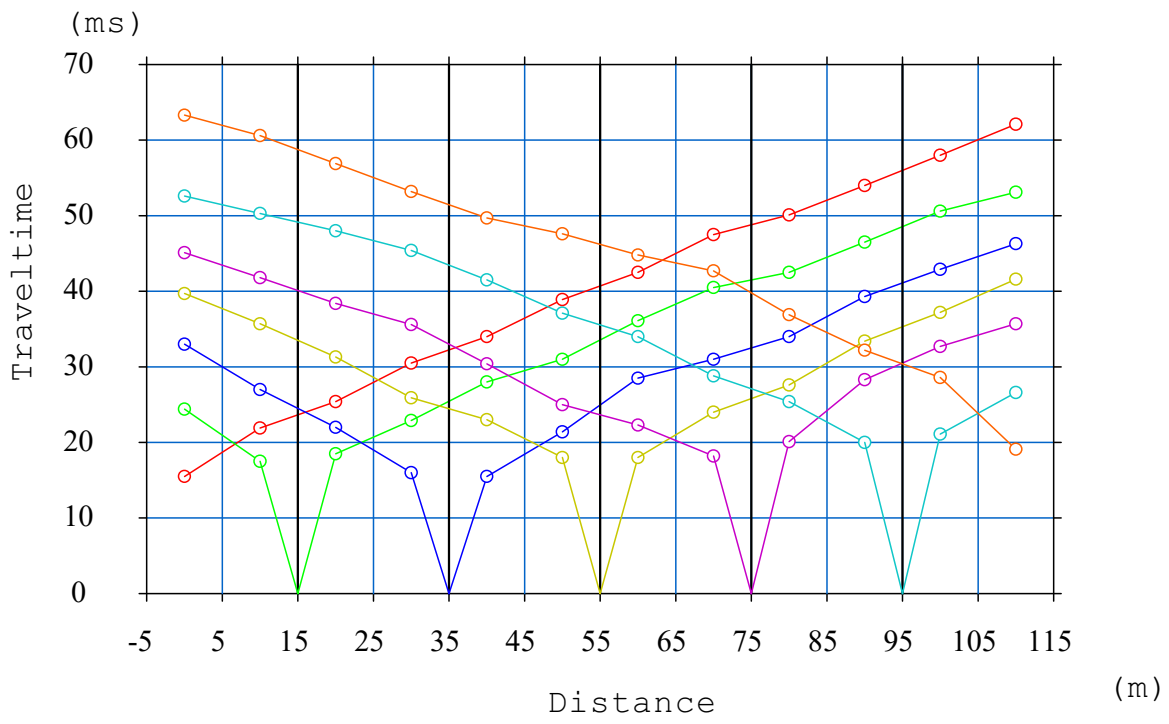
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0.00
2	0.00	15.00	0.00	0.00
3	0.00	35.00	0.00	0.00
4	0.00	55.00	0.00	0.00
5	0.00	75.00	0.00	0.00
6	0.00	95.00	0.00	0.00
7	0.00	115.00	0.00	0.00

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0	0	0	15.53 1	24.47 1	33.08 1	39.71 1	45.11 1	52.65 1	63.37 1
2	0	10	0	21.94 1	17.55 1	27.00 1	35.78 1	41.83 1	50.31 1	60.66 1
3	0	20	0	25.48 1	18.56 1	22.05 1	31.39 1	38.45 1	48.04 1	56.91 1
4	0	30	0	30.54 1	22.95 1	16.03 1	25.99 1	35.69 1	45.45 1	53.20 1
5	0	40	0	34.09 1	28.01 1	15.53 1	23.06 1	30.49 1	41.55 1	49.75 1
6	0	50	0	38.98 1	31.05 1	21.45 1	18.00 1	25.04 1	37.13 1	47.68 1
7	0	60	0	42.53 1	36.11 1	28.51 1	18.00 1	22.31 1	34.04 1	44.85 1
8	0	70	0	47.59 1	40.50 1	31.05 1	24.08 1	18.29 1	28.89 1	42.76 1
9	0	80	0	50.12 1	42.53 1	34.09 1	27.68 1	20.16 1	25.40 1	36.95 1
10	0	90	0	54.00 1	46.58 1	39.33 1	33.41 1	28.36 1	20.04 1	32.28 1
11	0	100	0	58.05 1	50.63 1	42.99 1	37.20 1	32.75 1	21.16 1	28.68 1
12	0	110	0	62.10 1	53.16 1	46.35 1	41.68 1	35.78 1	26.66 1	19.15 1

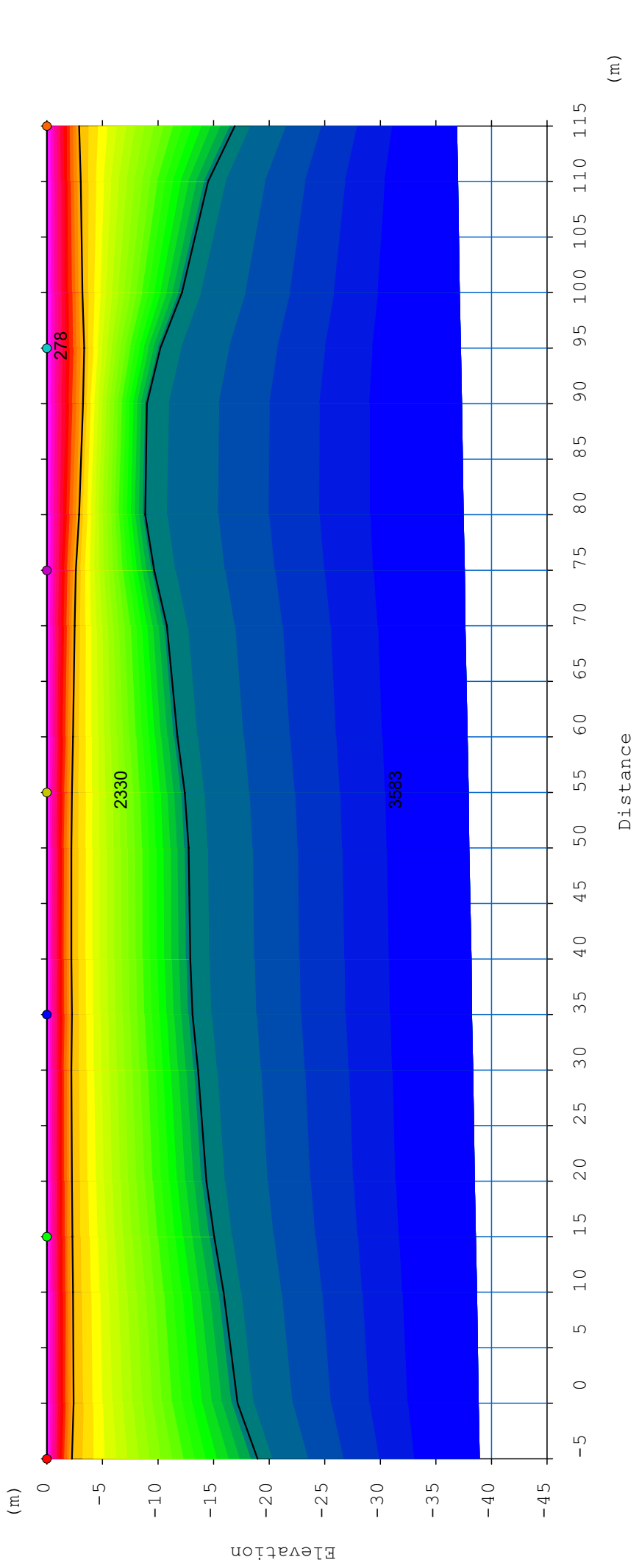
OUTPUT DATA BS 2101

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.30	18.96
2	15.00	2.33	15.09
3	35.00	2.25	13.14
4	55.00	2.28	12.44
5	75.00	2.63	9.69
6	95.00	3.35	10.20
7	115.00	2.95	16.94
Geo			
1	0.00	2.41	17.20
2	10.00	2.39	15.94
3	20.00	2.27	14.36
4	30.00	2.25	13.65
5	40.00	2.22	12.93
6	50.00	2.21	12.78
7	60.00	2.38	11.79
8	70.00	2.51	10.81
9	80.00	2.92	8.89
10	90.00	3.25	9.00
11	100.00	3.24	12.18
12	110.00	3.06	14.52



bs2101.vs

Scale = 1 / 1000

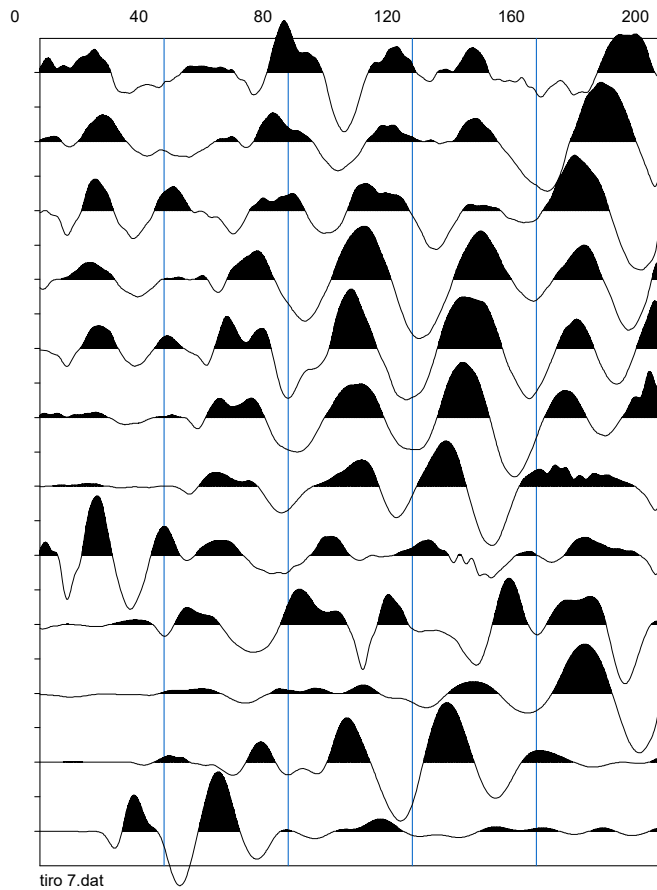


bs2101.vs

Scale = 1 / 500

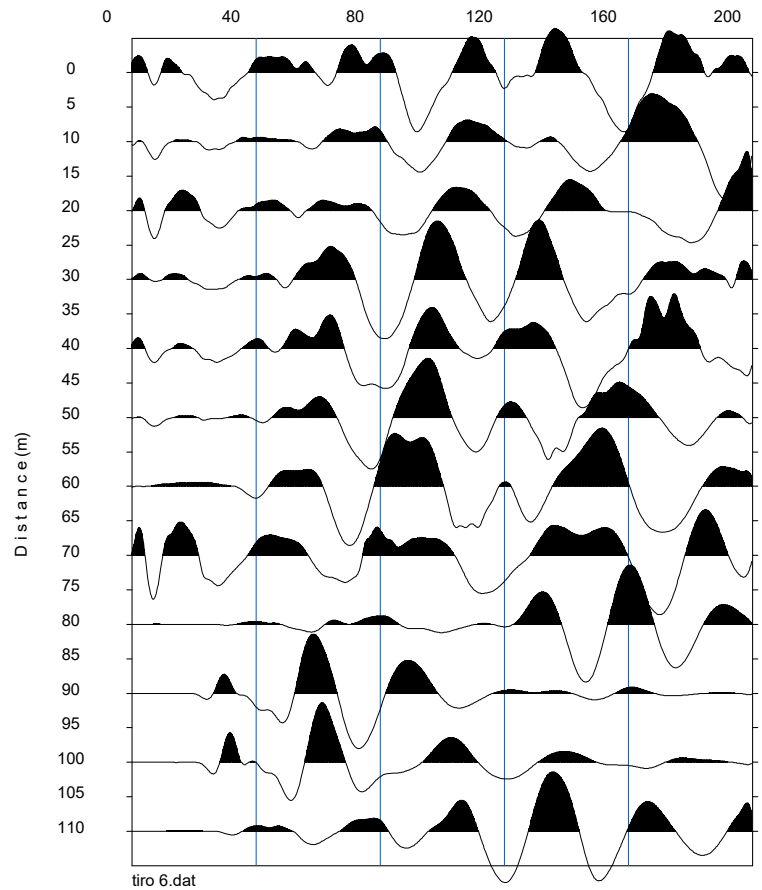
Source=115.0m

Time (msec)



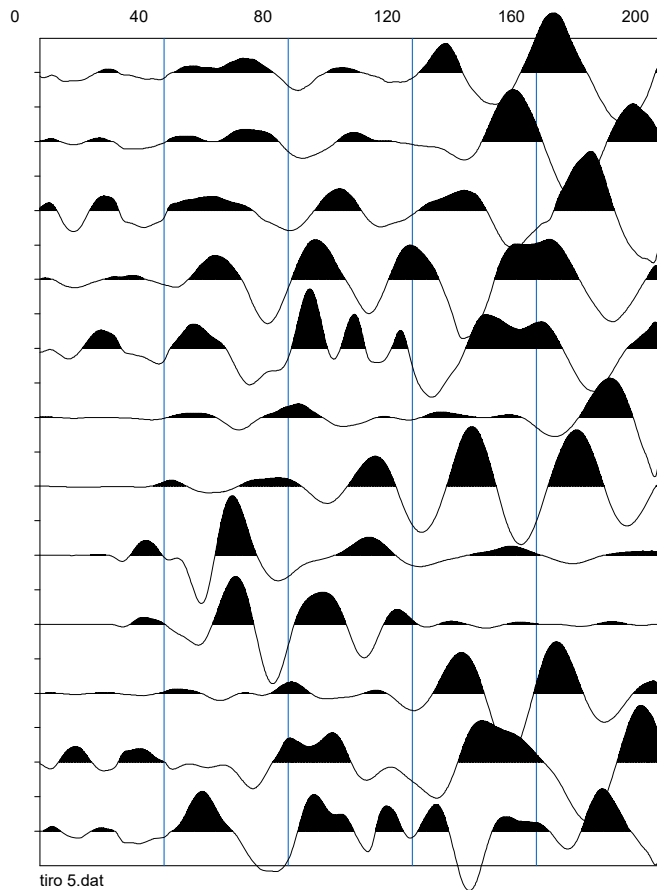
Source=95.0m

Time (msec)



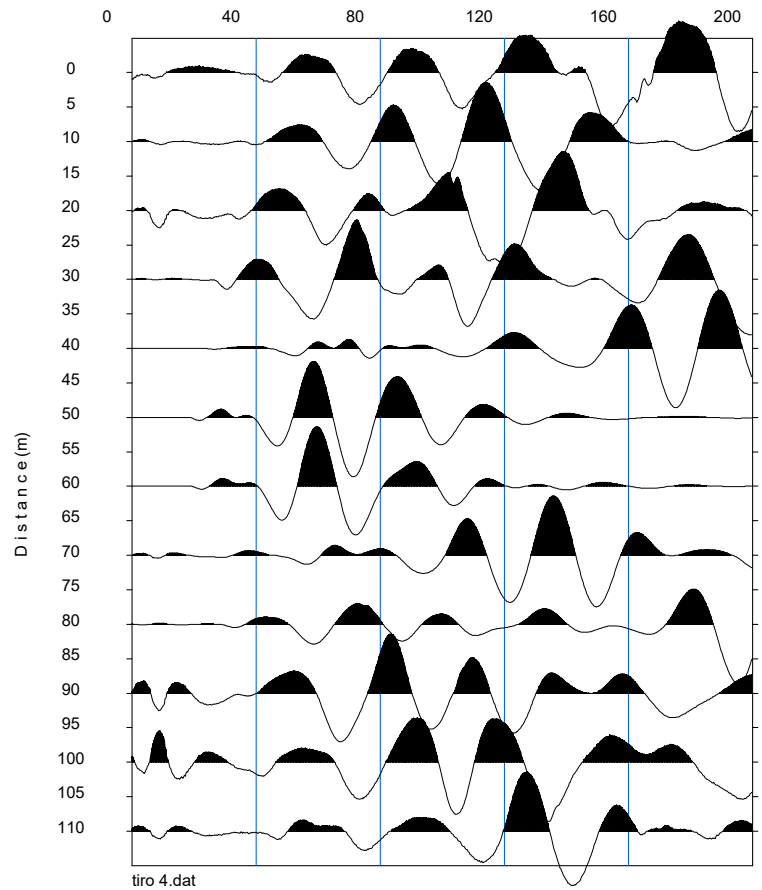
Source=75.0m

Time (msec)



Source=55.0m

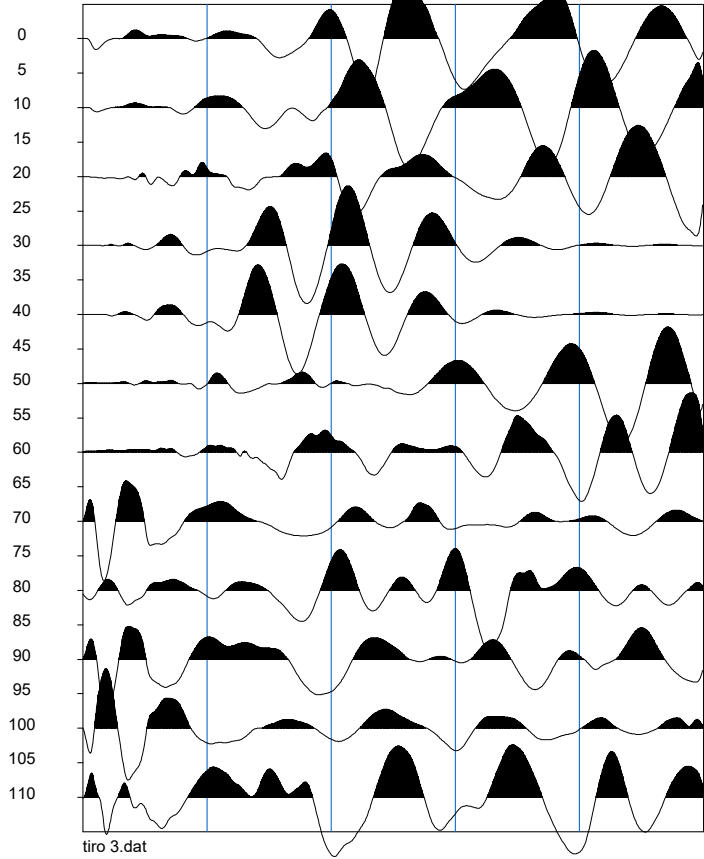
Time (msec)



Source= 35.0m

T i m e (msec)

0 40 80 120 160 200

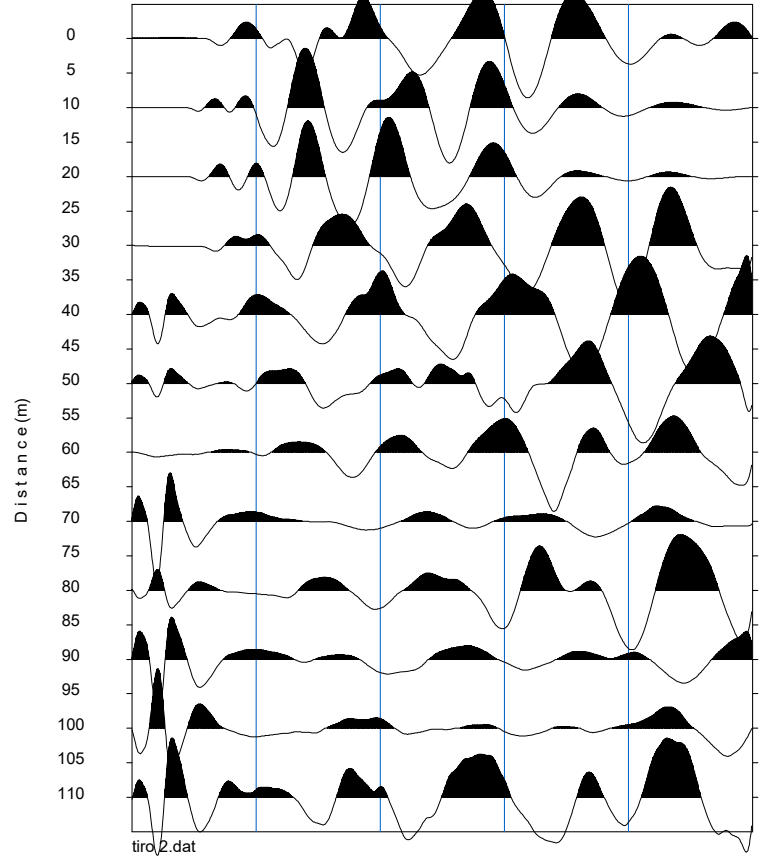


tiro 3.dat

Source= 15.0m

T i m e (msec)

0 40 80 120 160 200

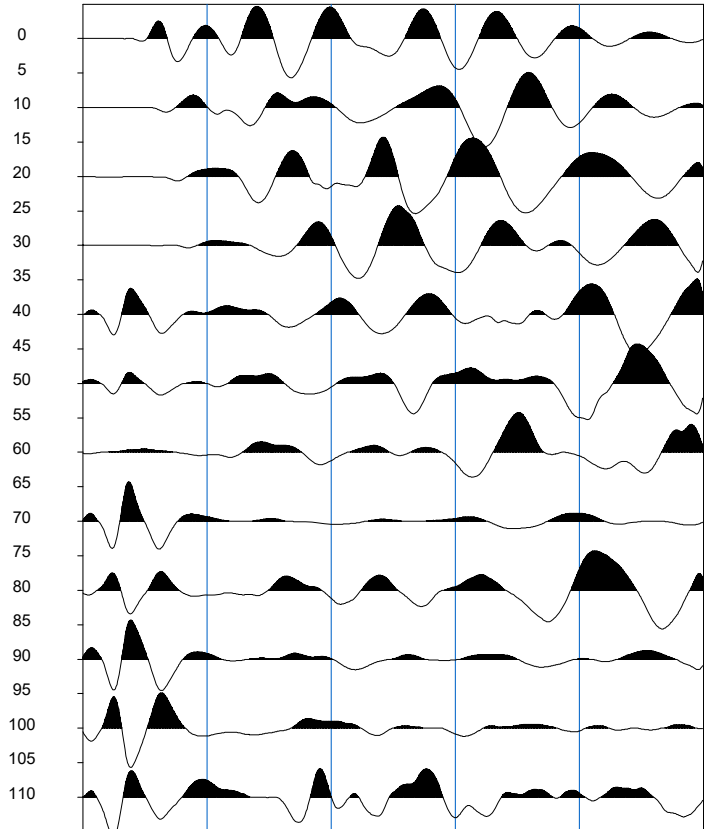


tiro_2.dat

Source= -5.0m

T i m e (msec)

0 40 80 120 160 200



tiro 1.dat

BASE SISMICA 2102



INPUT DATA BS 2102

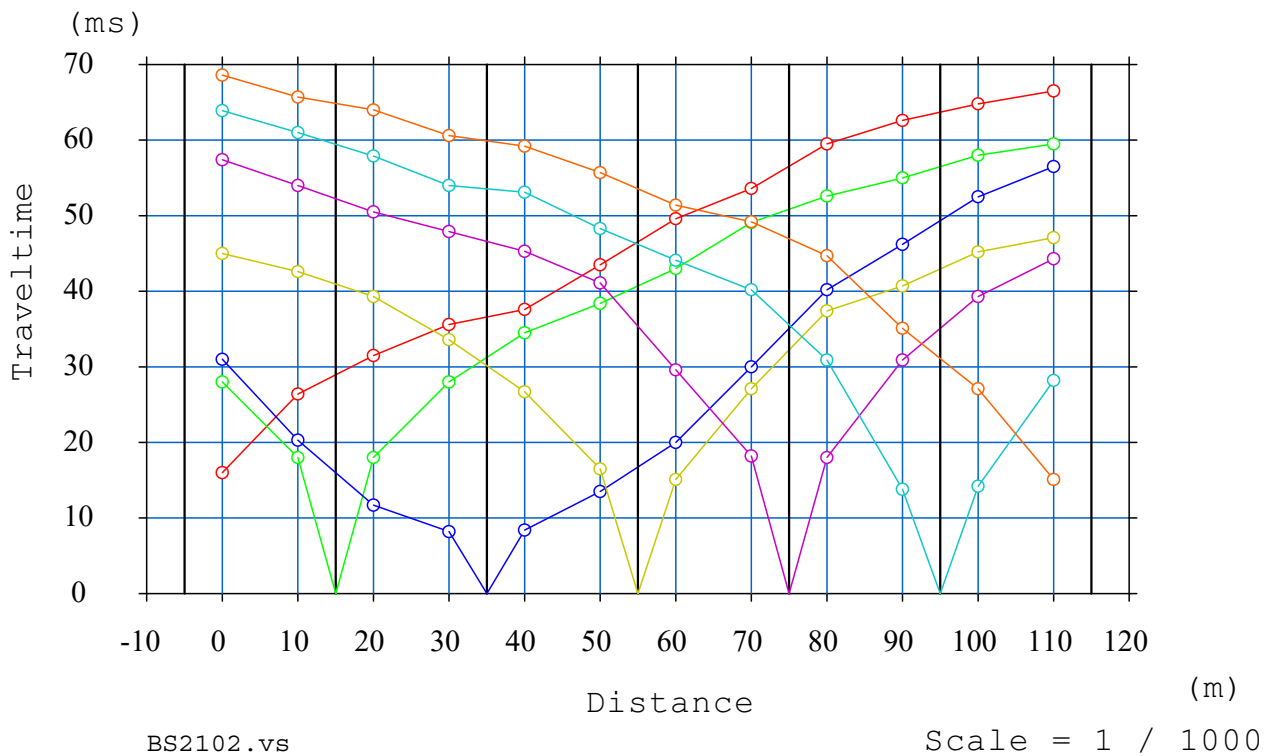
The spread contains 7 shotpoints and 12 geophones

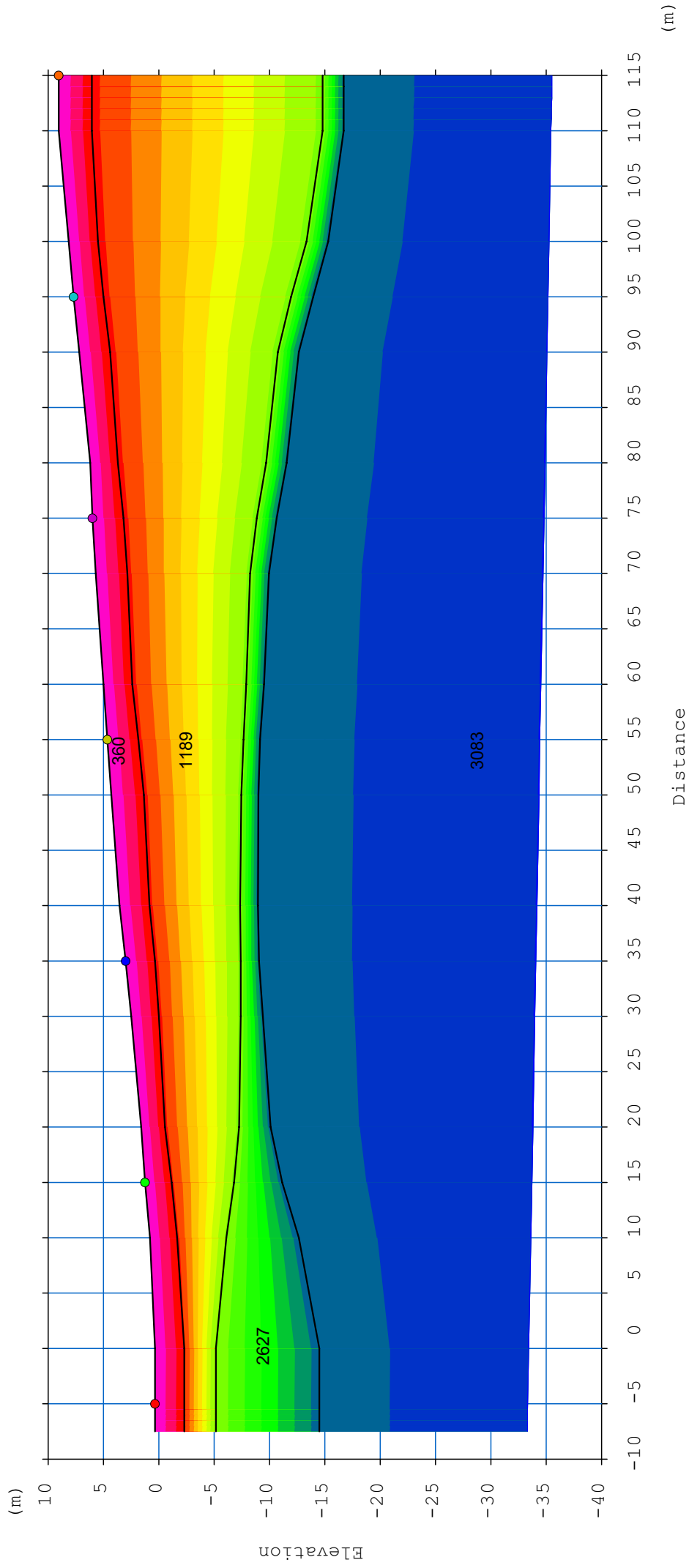
SP	Elev	X-loc	Y-Loc	Depth
1	0.36	-5	0	0
2	1.25	15	0	0
3	3.02	35	0	0
4	4.68	55	0	0
5	6	75	0	0
6	7.74	95	0	0
7	9.06	115	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.36	0.00	0	16.03 1	28.01 1	31.02 1	45.00 1	57.45 1	63.97 1	68.67 1
2	0.82	10.00	0	26.49 1	18.06 1	20.36 1	42.64 1	54.08 1	61.09 1	65.75 1
3	1.64	20.00	0	31.56 1	18.06 1	11.78 1	39.38 1	50.55 1	57.90 1	64.02 1
4	2.51	30.00	0	35.61 1	28.01 1	8.25 1	33.60 1	47.94 1	54.08 1	60.63 1
5	3.58	40.00	0	37.63 1	34.59 1	8.44 1	26.76 1	45.38 1	53.18 1	59.20 1
6	4.34	50.00	0	43.54 1	38.48 1	13.50 1	16.50 1	41.18 1	48.30 1	55.78 1
7	5.03	60.00	0	49.61 1	43.03 1	20.03 1	15.15 1	29.63 1	44.13 1	51.45 1
8	5.74	70.00	0	53.66 1	49.11 1	30.08 1	27.15 1	18.23 1	40.30 1	49.29 1
9	6.22	80.00	0	59.57 1	52.65 1	40.22 1	37.43 1	18.00 1	30.98 1	44.78 1
10	7.24	90.00	0	62.61 1	55.01 1	46.28 1	40.73 1	30.98 1	13.80 1	35.18 1
11	8.18	100.00	0	64.88 1	58.05 1	52.50 1	45.23 1	39.38 1	14.25 1	27.15 1
12	9.06	110.00	0	66.58 1	59.57 1	56.55 1	47.18 1	44.33 1	28.28 1	15.15 1

OUTPUT DATA BS 2102

SP	X-loc	Layer 2	Layer 3	Layer 4
1	-5.00	2.70	5.54	14.86
2	15.00	2.42	8.08	12.42
3	35.00	2.64	10.43	12.11
4	55.00	2.82	12.33	13.87
5	75.00	2.80	14.87	16.66
6	95.00	2.73	19.72	21.70
7	115.00	3.00	23.89	25.80
Geo				
1	0.00	2.70	5.54	14.86
2	10.00	2.50	6.94	13.48
3	20.00	2.21	8.90	11.75
4	30.00	2.52	9.93	11.96
5	40.00	2.70	10.96	12.54
6	50.00	2.97	11.80	13.35
7	60.00	2.58	12.94	14.53
8	70.00	2.85	14.02	15.72
9	80.00	2.49	15.93	17.79
10	90.00	2.80	17.99	19.93
11	100.00	2.65	21.55	23.52
12	110.00	3.00	23.89	25.80





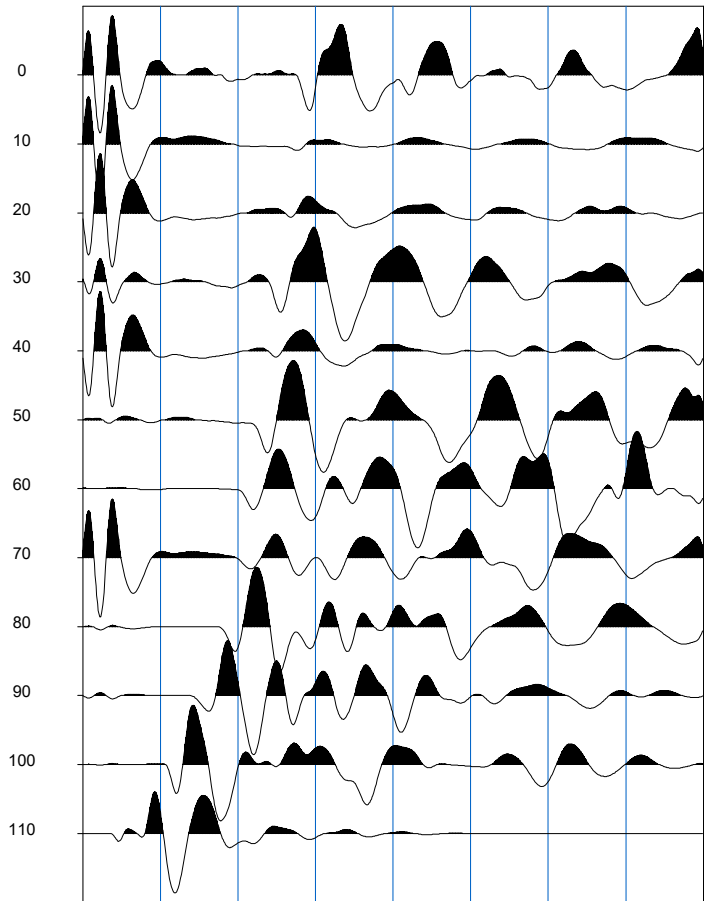
BS2102.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

0 25 50 75 100 125 150 175 200

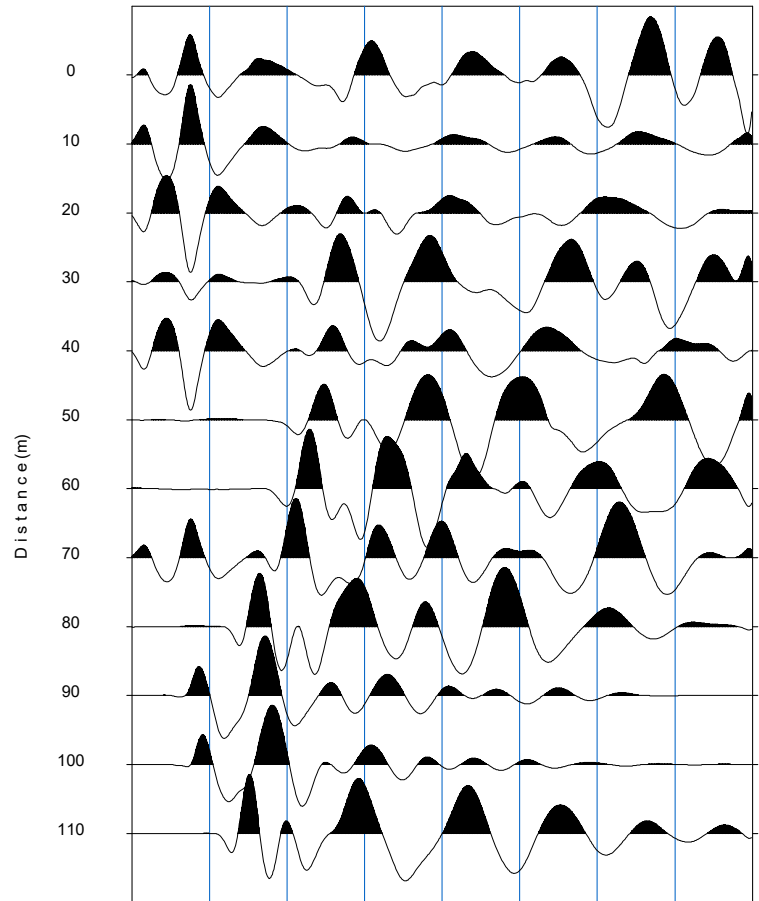


TIRO 7.dat

Source= 95.0m

Time (msec)

0 25 50 75 100 125 150 175 200

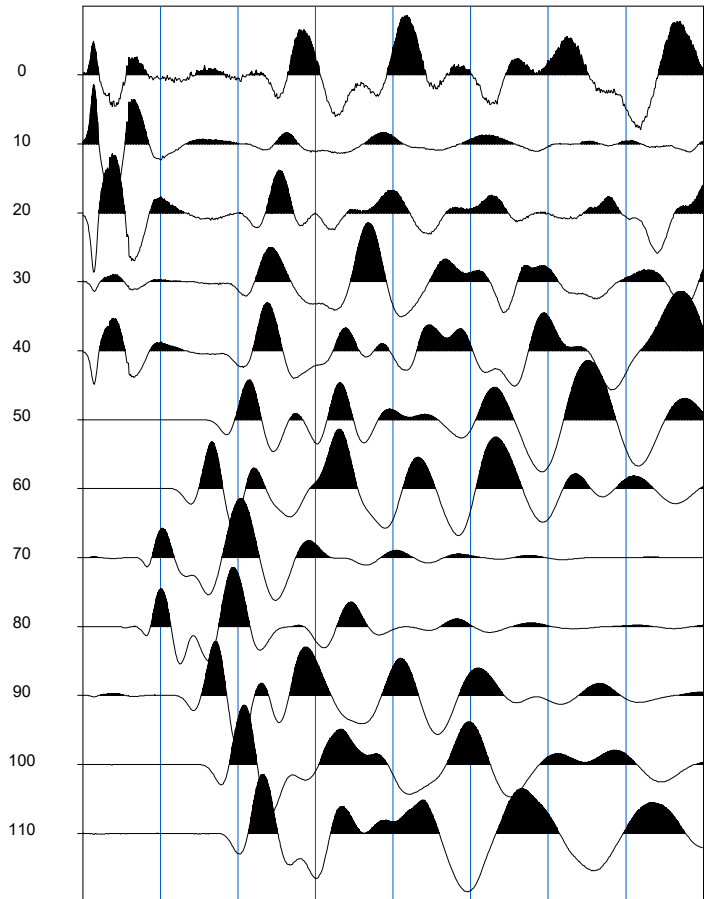


TIRO 6.dat

Source= 75.0m

Time (msec)

0 25 50 75 100 125 150 175 200

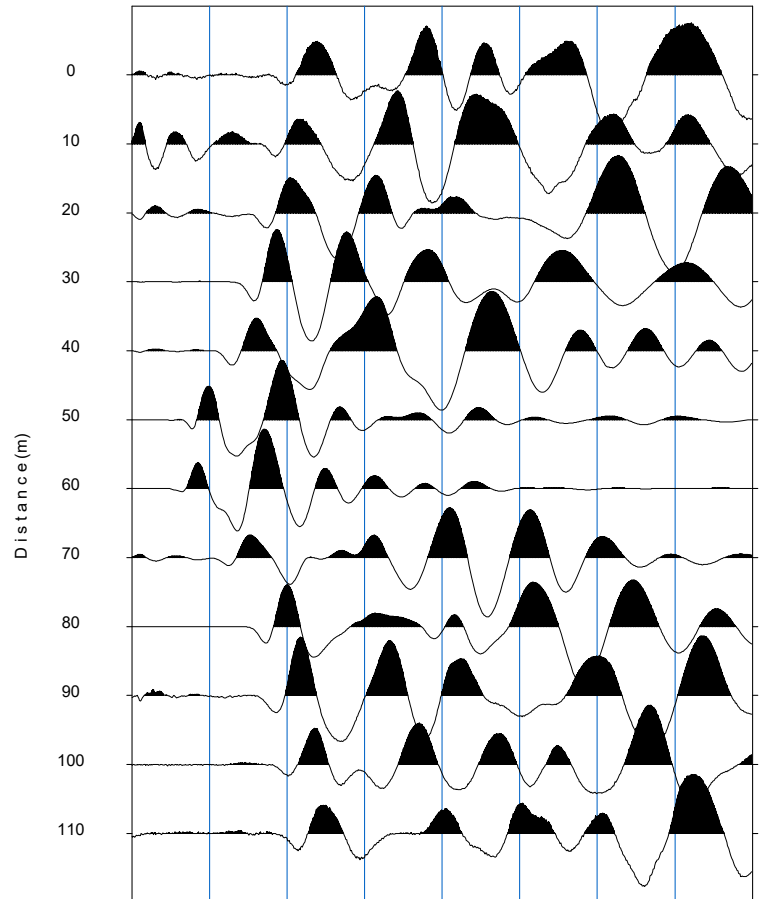


TIRO 5.dat

Source= 55.0m

Time (msec)

0 25 50 75 100 125 150 175 200

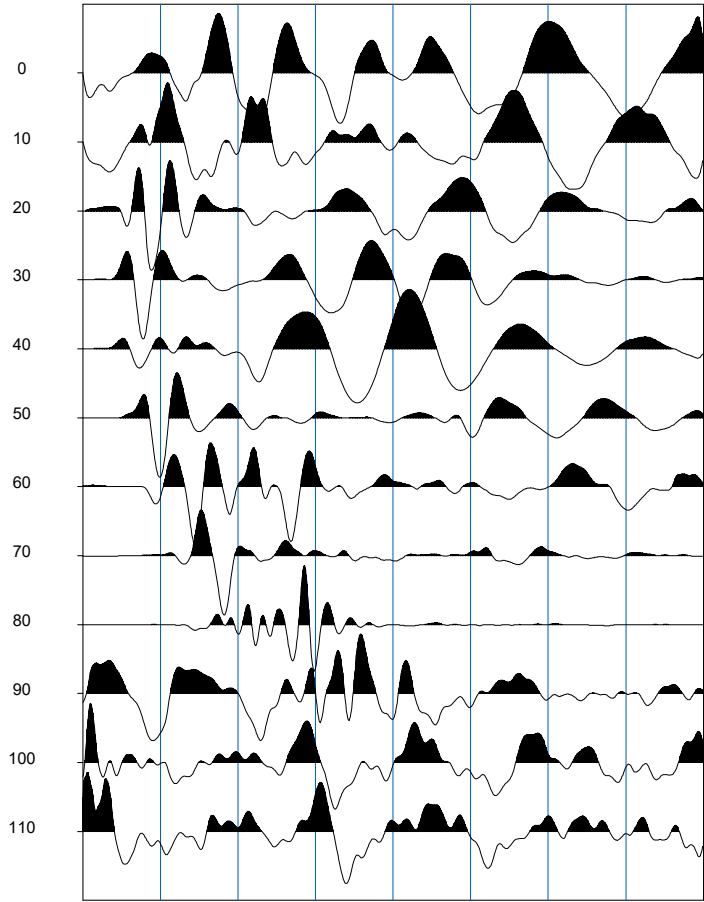


TIRO 4.dat

Source= 35.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

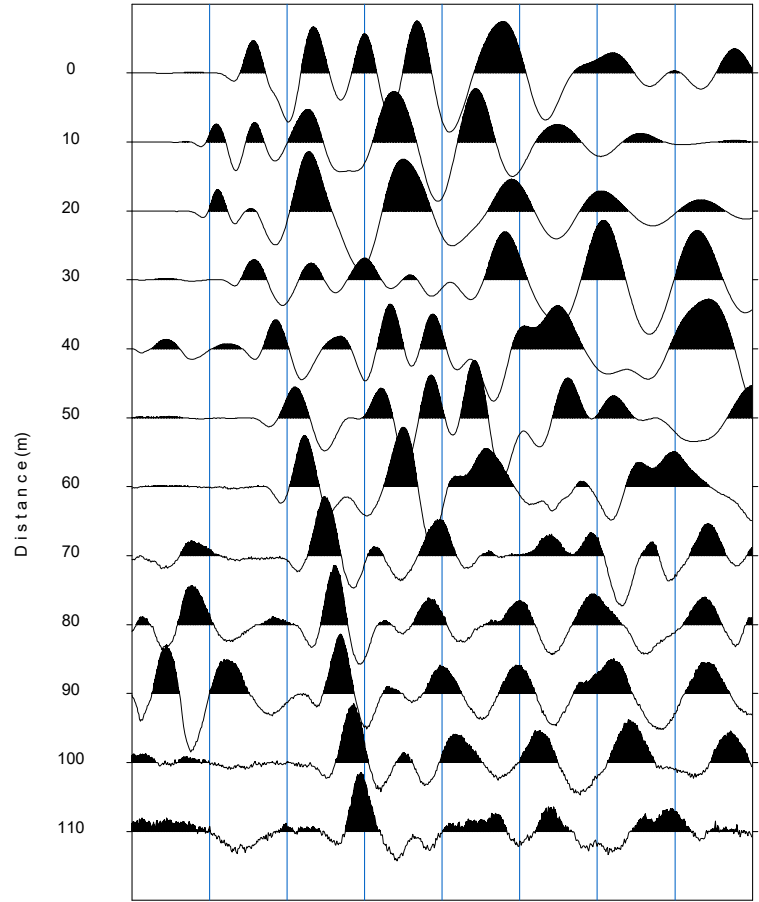


TIRO 3.dat

Source= 15.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

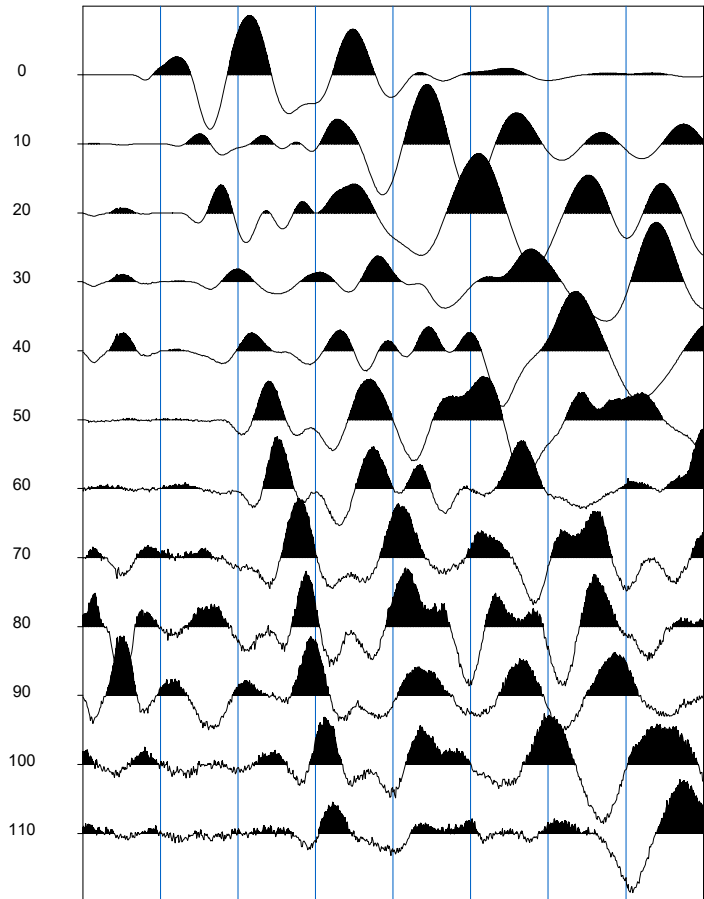


TIRO 2.dat

Source= -5.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200



TIRO 1.dat

BASE SISMICA 2103



INPUT DATA BS 2103

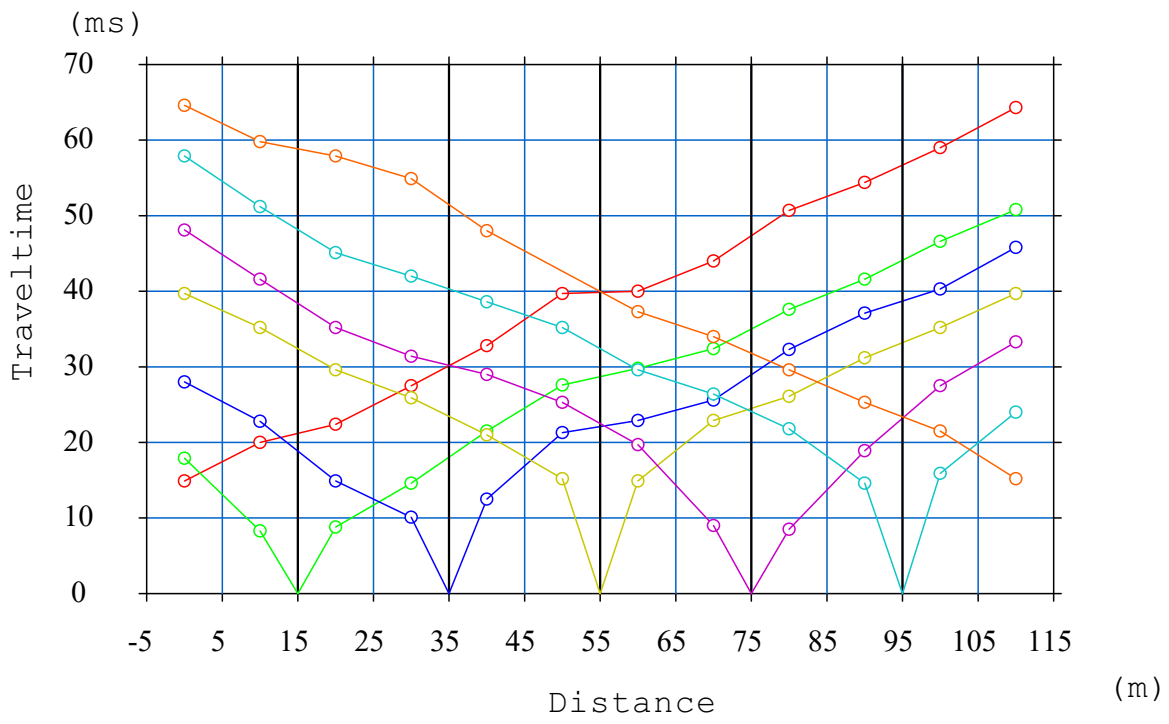
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	23.78	-5	0	0
2	18.55	15	0	0
3	14.19	35	0	0
4	10.5	55	0	0
5	6.84	75	0	0
6	3.85	95	0	0
7	1.73	115	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	21.87	0	0	14.94 1	17.91 1	28.01 1	39.78 1	48.16 1	57.96 1	64.62 1
2	19.68	10	0	20.10 1	8.31 1	22.82 1	35.28 1	41.67 1	51.30 1	59.85 1
3	17.43	20	0	22.41 1	8.82 1	14.95 1	29.61 1	35.28 1	45.18 1	57.96 1
4	15.24	30	0	27.54 1	14.63 1	10.17 1	25.92 1	31.47 1	42.02 1	54.99 1
5	13.15	40	0	32.85 1	21.60 1	12.51 1	21.06 1	29.07 1	38.70 1	48.06 1
6	11.28	50	0	39.78 1	27.61 1	21.33 1	15.21 1	25.33 1	35.28 1	0.00 -1
7	9.72	60	0	40.05 1	29.88 1	22.96 1	14.94 1	19.80 1	29.61 1	37.35 1
8	7.74	70	0	44.10 1	32.42 1	25.61 1	22.95 1	9.09 1	26.46 1	34.09 1
9	5.94	80	0	50.76 1	37.62 1	32.31 1	26.19 1	8.55 1	21.87 1	29.62 1
10	4.25	90	0	54.45 1	41.67 1	37.17 1	31.23 1	18.99 1	14.67 1	25.38 1
11	3.46	100	0	59.04 1	46.66 1	40.32 1	35.28 1	27.54 1	15.94 1	21.54 1
12	1.73	110	0	64.35 1	50.89 1	45.90 1	39.78 1	33.39 1	24.06 1	15.21 1

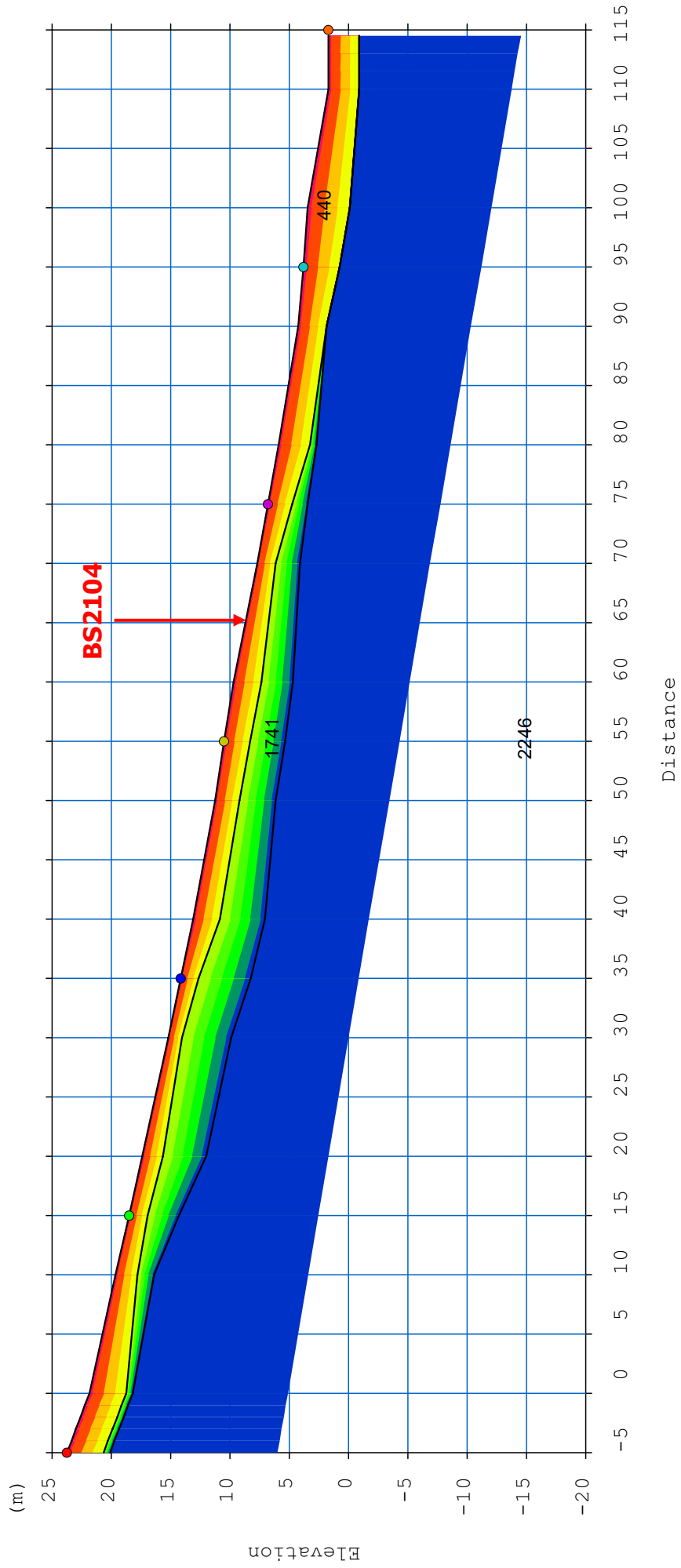
OUTPUT DATA BS 2103

SP	X-loc	Layer 2	Layer 3
1	-5.00	3.09	3.64
2	15.00	1.59	4.24
3	35.00	1.52	5.89
4	55.00	2.19	5.11
5	75.00	2.05	3.38
6	95.00	3.07	3.07
7	115.00	2.67	2.67
Geo			
1	0.00	3.09	3.64
2	10.00	1.85	3.25
3	20.00	1.78	5.41
4	30.00	1.17	5.30
5	40.00	2.26	6.08
6	50.00	2.08	5.13
7	60.00	2.33	5.00
8	70.00	1.57	3.63
9	80.00	2.69	3.23
10	90.00	2.36	2.38
11	100.00	3.61	3.61
12	110.00	2.67	2.67



bs2103.vs

Scale = 1 / 1000

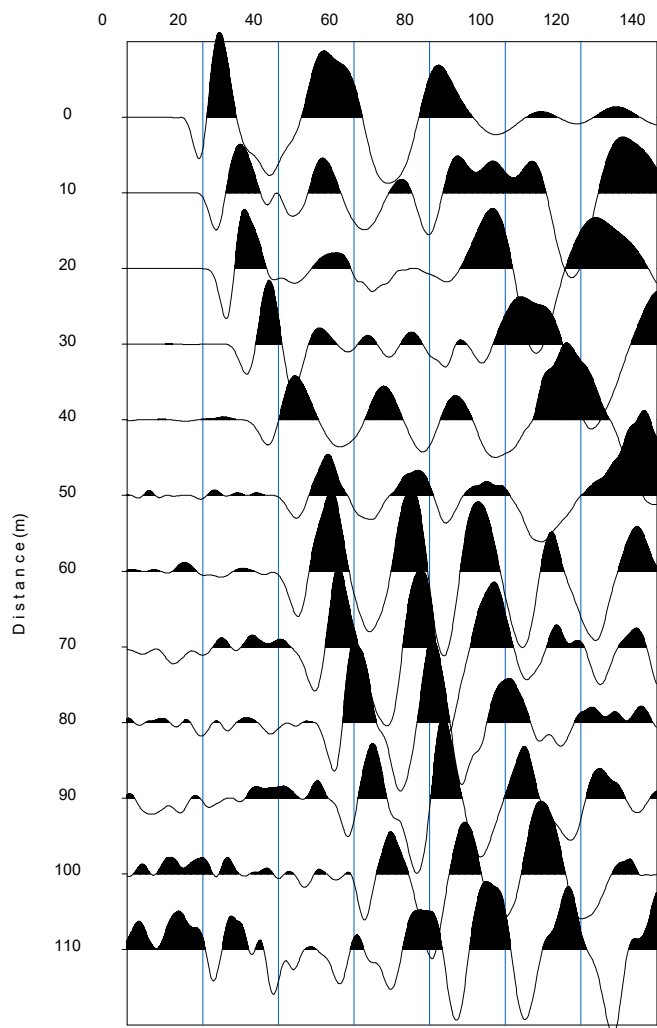


bs2103.vs

Scale = 1 / 500

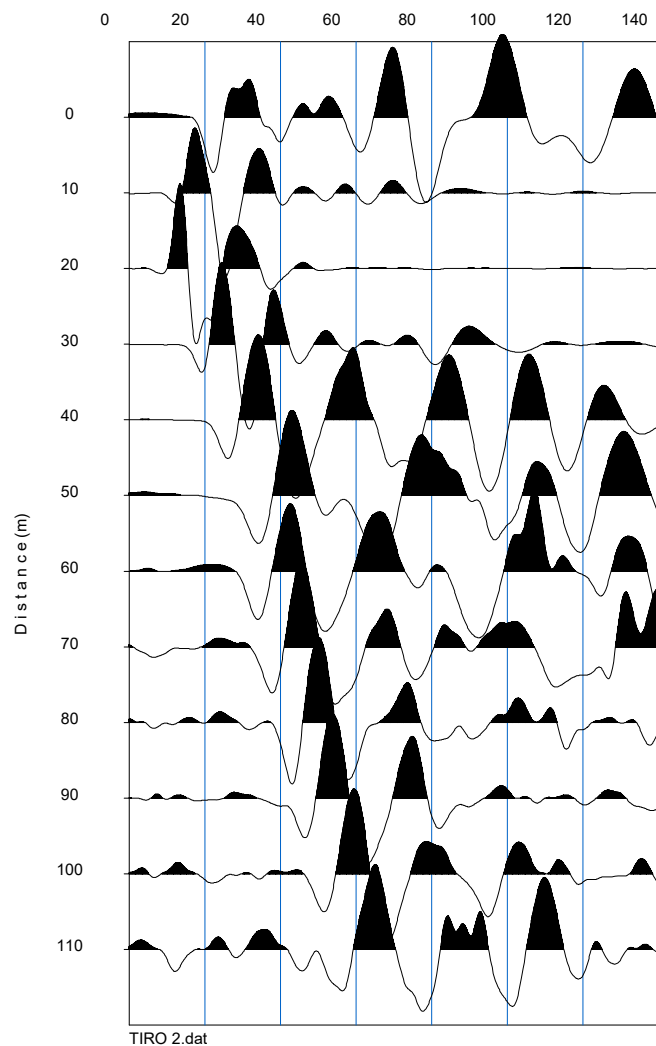
Source= -5.0m

Time (msec)



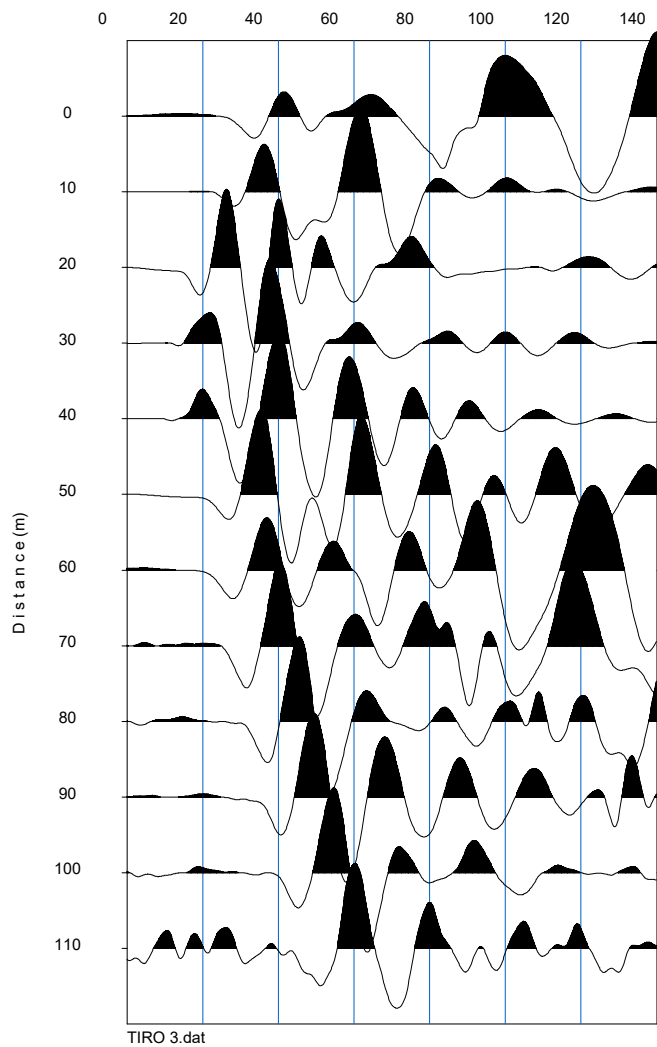
Source= 15.0m

Time (msec)



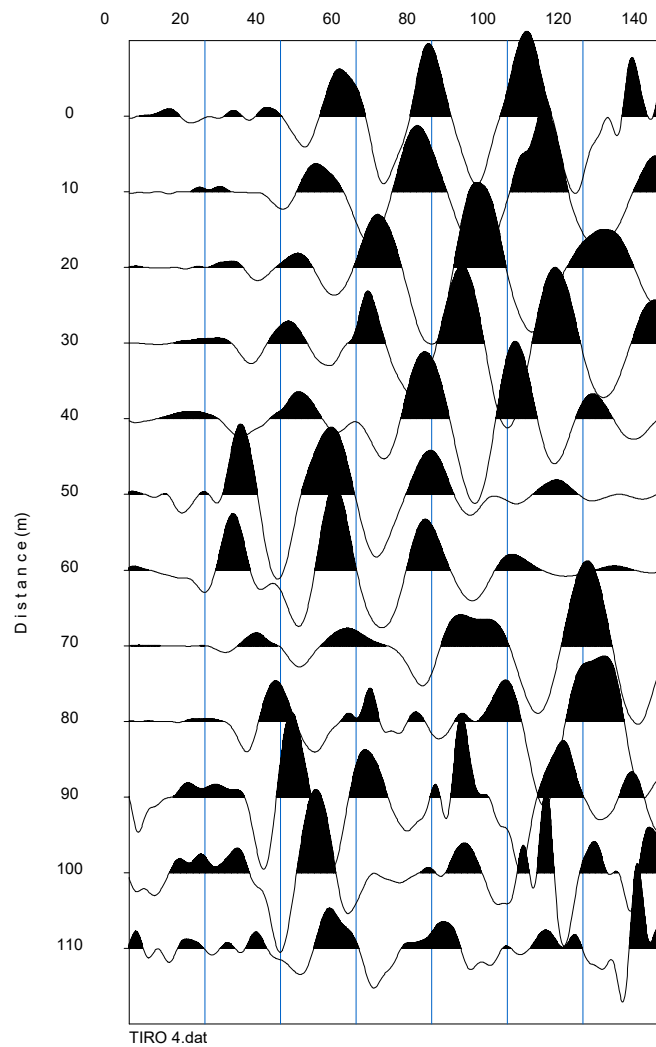
Source= 35.0m

Time (msec)



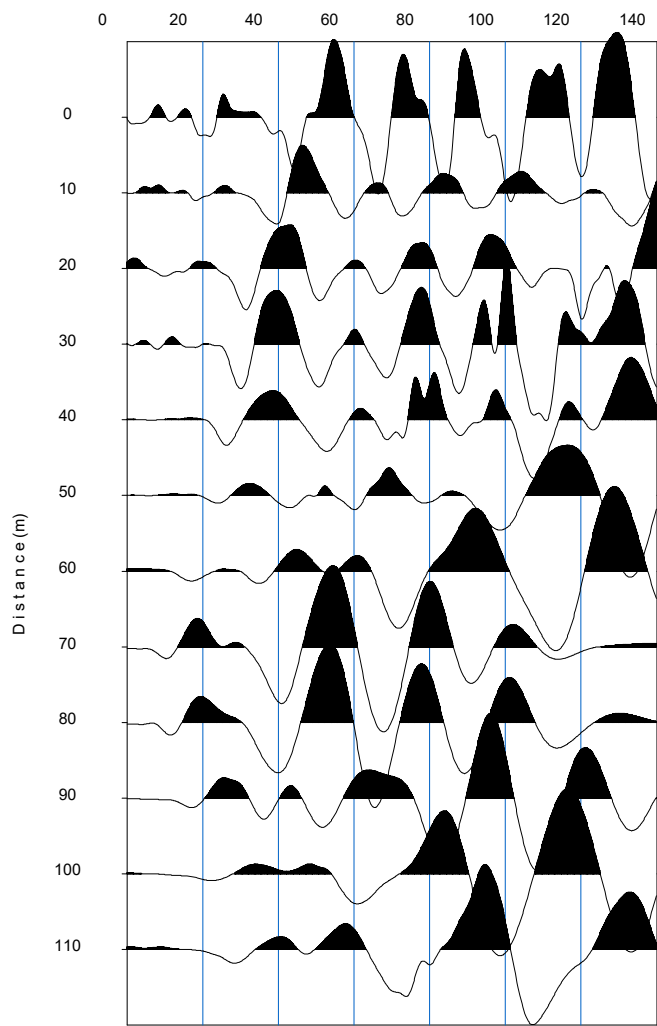
Source= 55.0m

Time (msec)



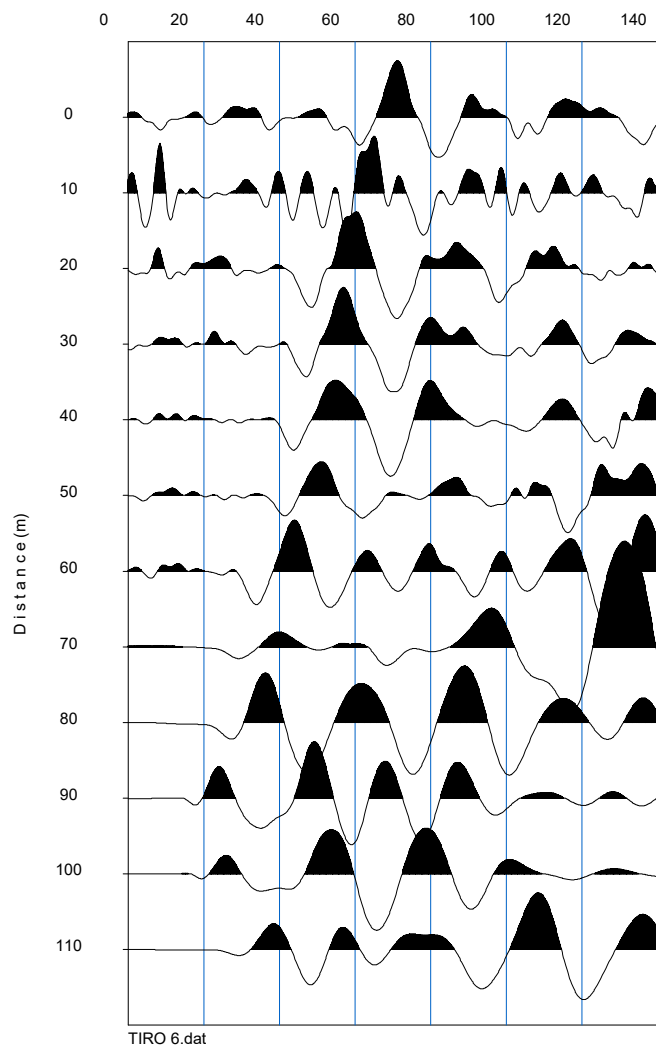
Source= 75.0m

T i m e (msec)



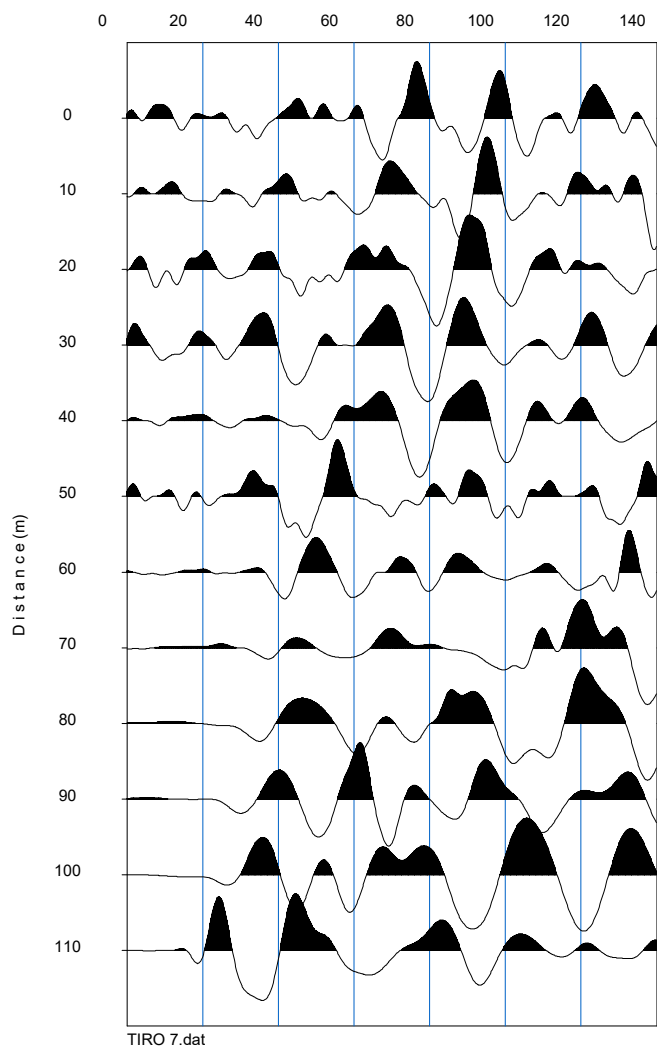
Source= 95.0m

T i m e (msec)



Source=115.0m

T i m e (msec)



BASE SISMICA 2104



INPUT DATA BS 2104

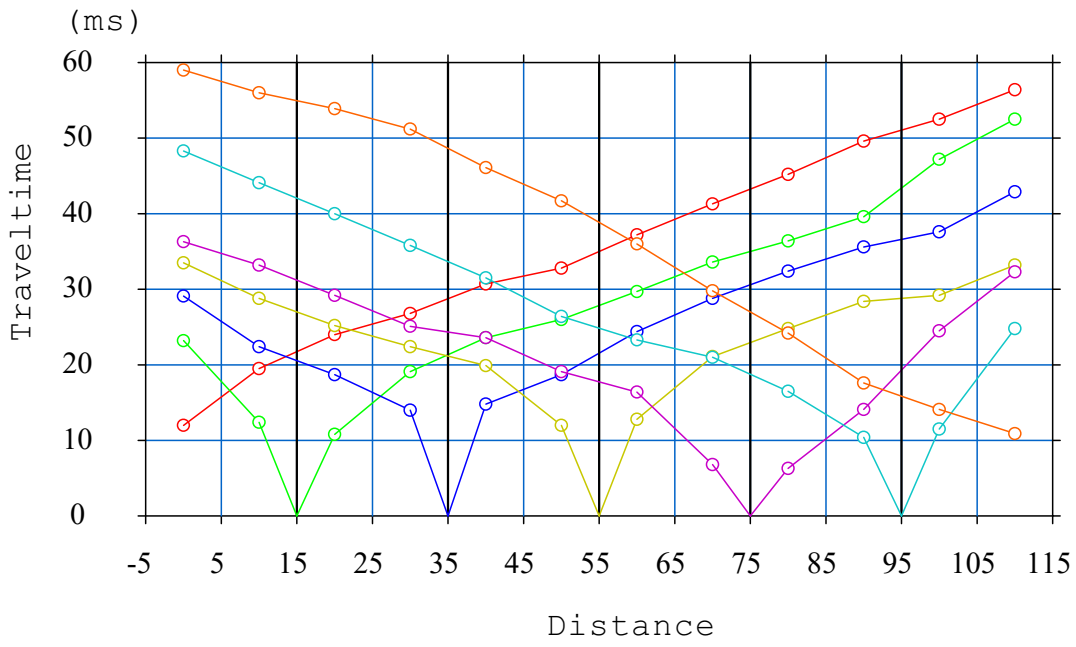
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	0.30	15.00	0	0
3	0.75	35.00	0	0
4	1.81	55.00	0	0
5	5.43	75.00	0	0
6	9.65	95.00	0	0
7	15.87	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	-0.19	0.00	0	12.02 1	23.22 1	29.12 1	33.57 1	36.32 1	48.33 1	59.04 1
2	0.16	10.00	0	19.58 1	12.42 1	22.41 1	28.89 1	33.21 1	44.10 1	56.07 1
3	0.45	20.00	0	24.03 1	10.80 1	18.77 1	25.25 1	29.30 1	40.09 1	54.00 1
4	0.69	30.00	0	26.87 1	19.17 1	14.04 1	22.41 1	25.18 1	35.82 1	51.21 1
5	0.82	40.00	0	30.78 1	23.63 1	14.85 1	19.98 1	23.63 1	31.50 1	46.17 1
6	1.02	50.00	0	32.81 1	26.06 1	18.77 1	12.02 1	19.17 1	26.46 1	41.72 1
7	2.61	60.00	0	37.26 1	29.70 1	24.44 1	12.82 1	16.47 1	23.30 1	36.08 1
8	4.54	70.00	0	41.31 1	33.62 1	28.89 1	21.19 1	6.89 1	21.06 1	29.88 1
9	6.32	80.00	0	45.23 1	36.45 1	32.40 1	24.84 1	6.34 1	16.56 1	24.30 1
10	8.04	90.00	0	49.68 1	39.69 1	35.64 1	28.49 1	14.15 1	10.42 1	17.64 1
11	11.27	100.00	0	52.52 1	47.25 1	37.67 1	29.30 1	24.57 1	11.52 1	14.13 1
12	14.47	110.00	0	56.43 1	52.52 1	42.93 1	33.21 1	32.31 1	24.84 1	10.98 1

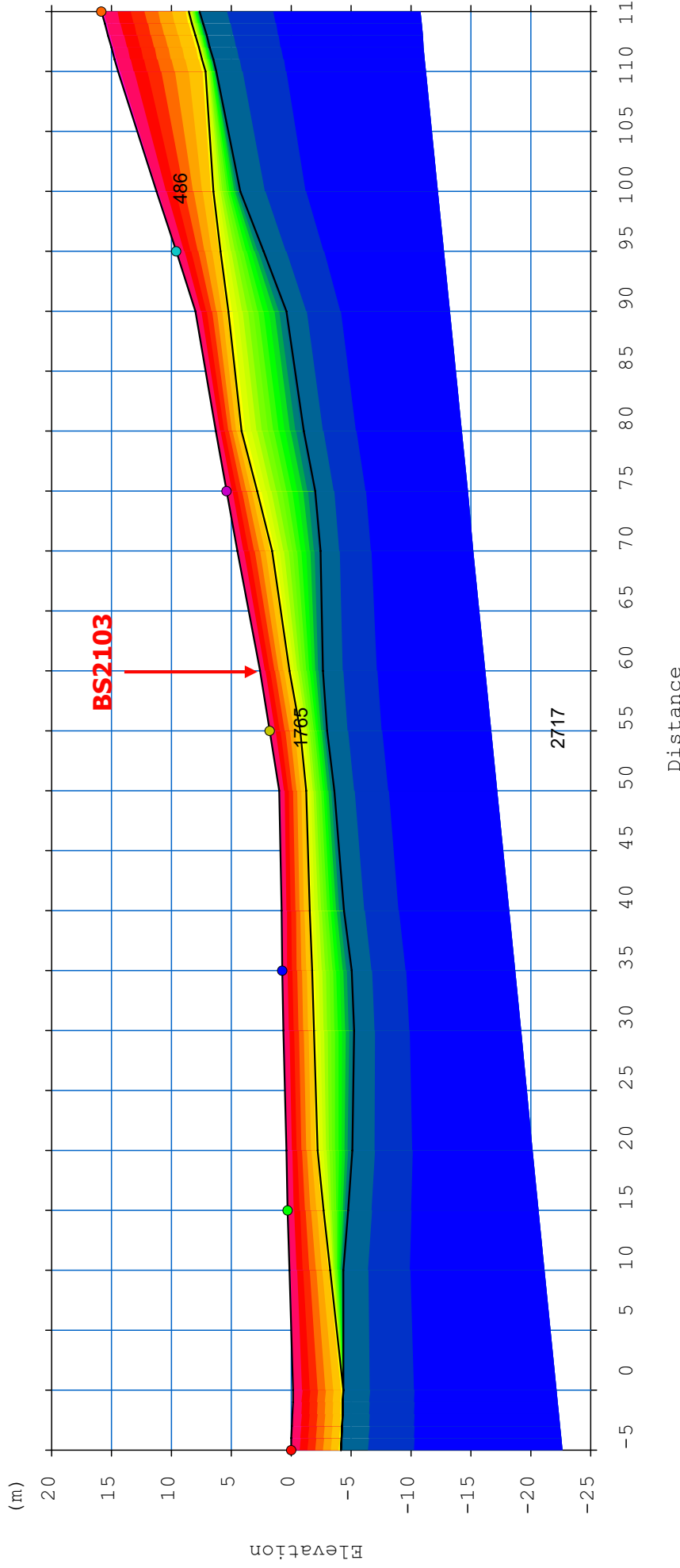
OUTPUT DATA BS 2104

SP	X-loc	Layer 2	Layer 3
1	-5.00	4.20	4.20
2	15.00	3.01	5.06
3	35.00	2.52	5.81
4	55.00	2.60	4.83
5	75.00	2.54	7.47
6	95.00	3.72	7.34
7	115.00	7.29	8.21
Geo			
1	0.00	4.20	4.20
2	10.00	3.44	4.51
3	20.00	2.69	5.58
4	30.00	2.61	5.98
5	40.00	2.41	5.24
6	50.00	2.30	4.66
7	60.00	2.41	5.31
8	70.00	2.92	7.02
9	80.00	2.14	7.41
10	90.00	2.76	7.61
11	100.00	4.76	6.99
12	110.00	7.29	8.21



bs2104.vs

Scale = 1 / 1000



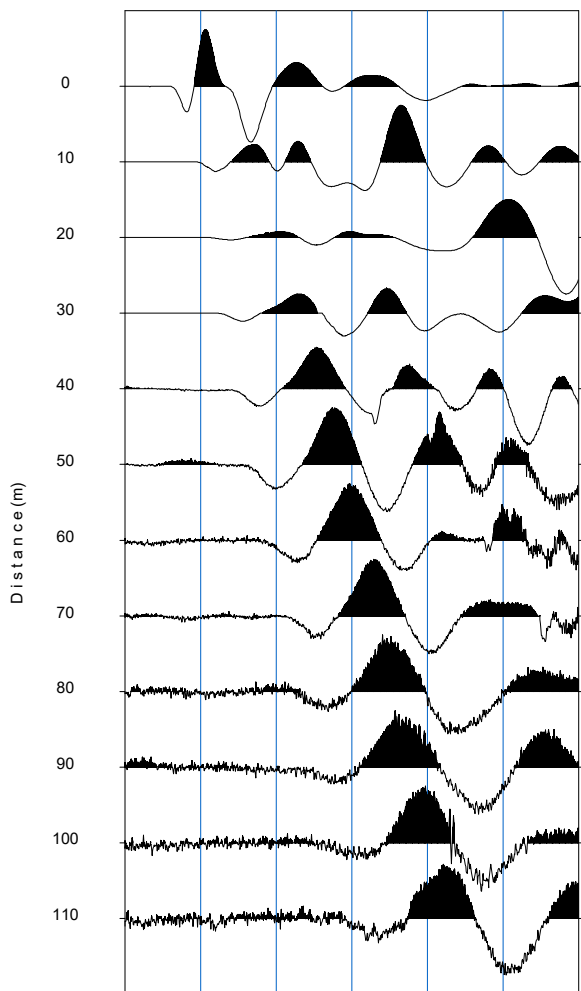
bs2104.vs

Scale = 1 / 500

Source= -5.0m

Time (msec)

0 20 40 60 80 100 120

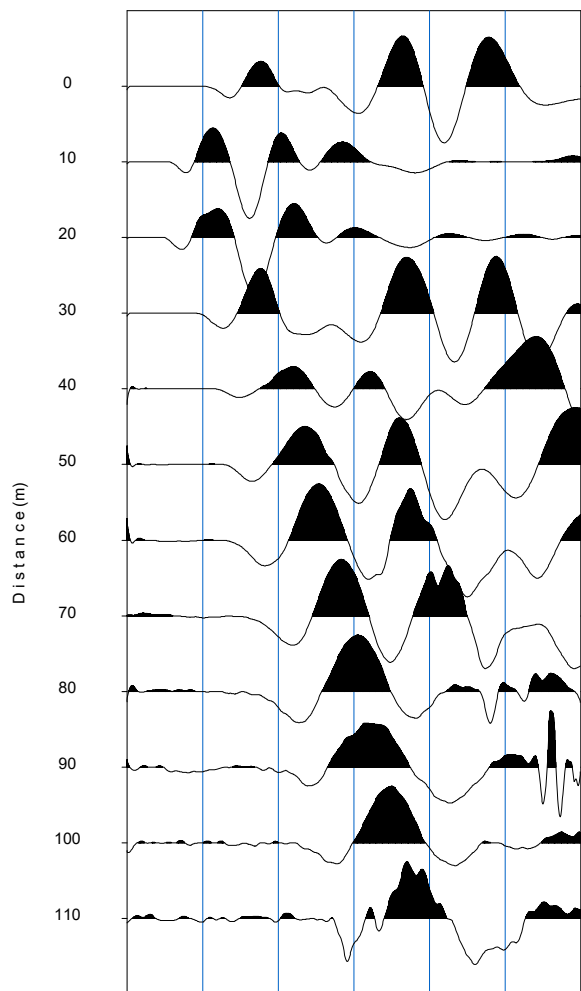


tiro 1.dat

Source= 15.0m

Time (msec)

0 20 40 60 80 100 120

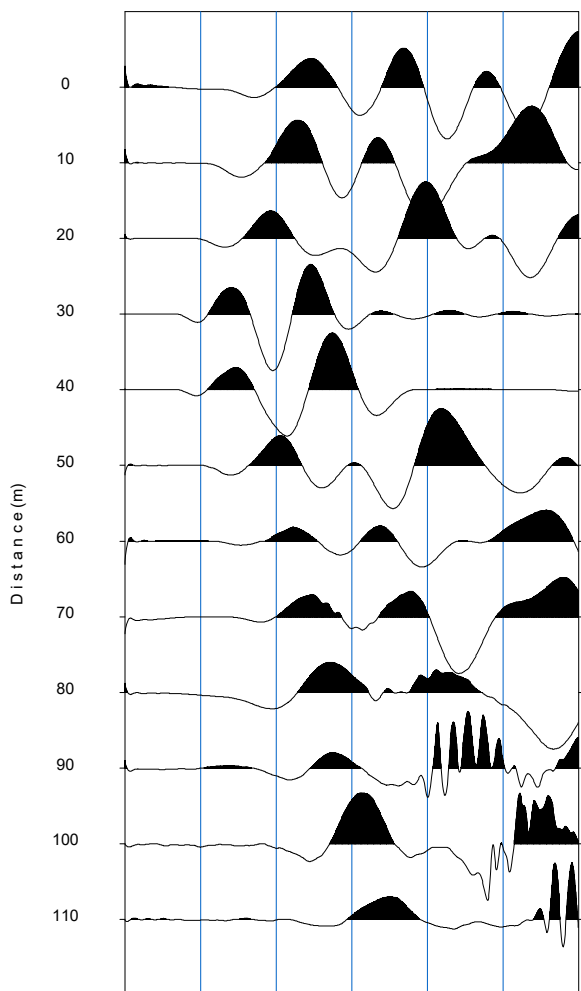


tiro 2.dat

Source= 35.0m

Time (msec)

0 20 40 60 80 100 120

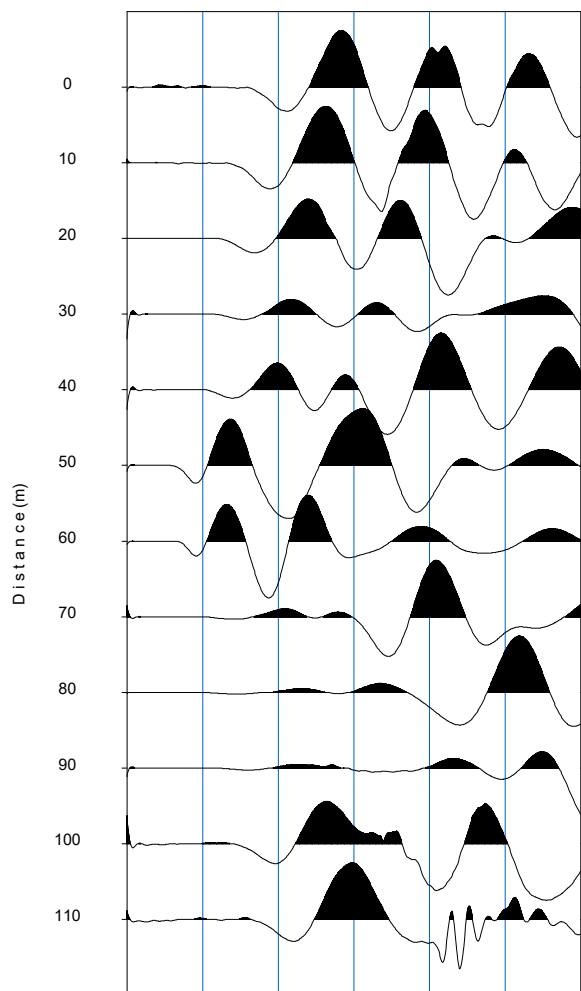


tiro 3.dat

Source= 55.0m

Time (msec)

0 20 40 60 80 100 120

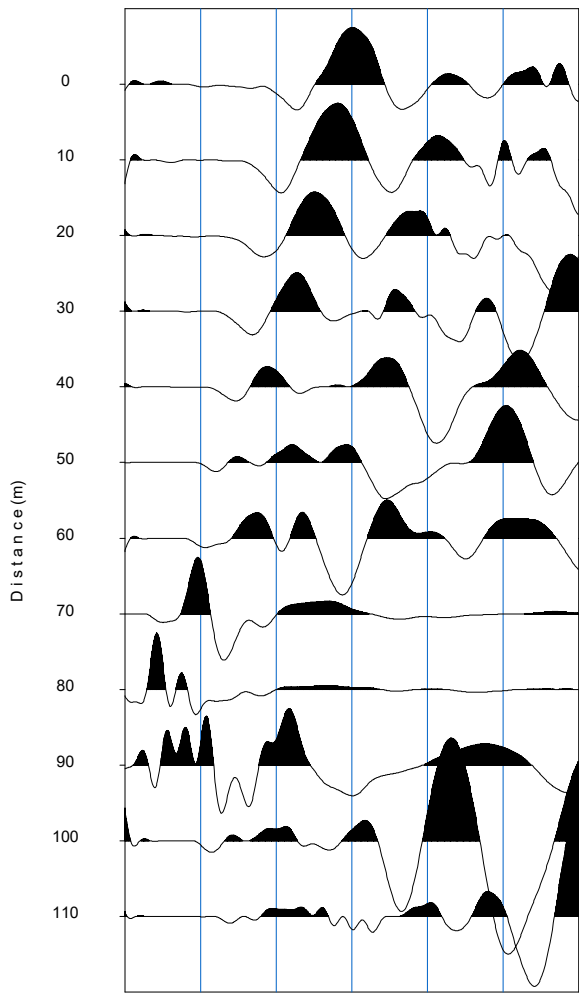


tiro 4.dat

Source= 75.0m

T i m e (msec)

0 20 40 60 80 100 120

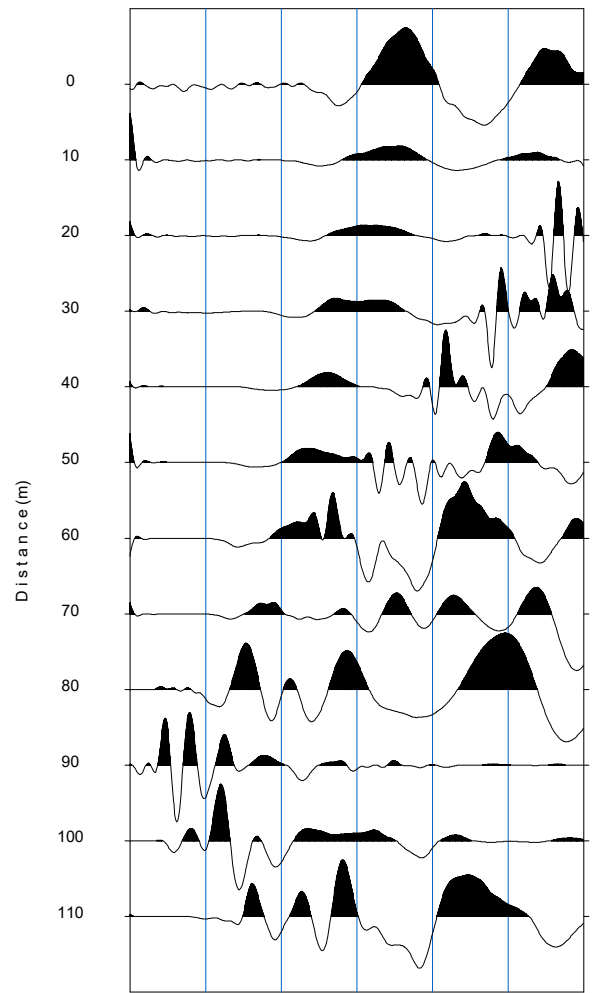


tiro 5.dat

Source= 95.0m

T i m e (msec)

0 20 40 60 80 100 120

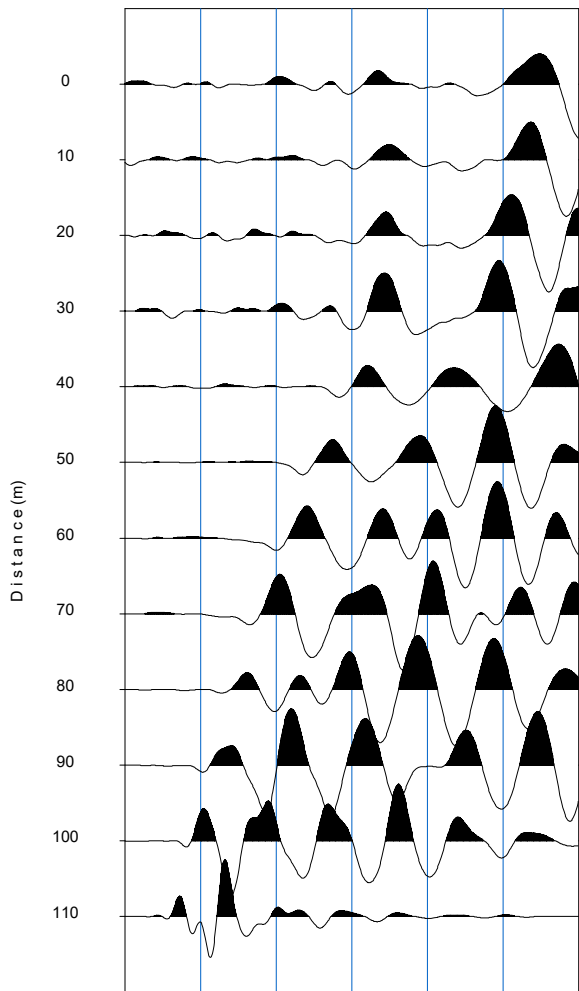


tiro 6.dat

Source=115.0m

T i m e (msec)

0 20 40 60 80 100 120



tiro 7.dat

BASE SISMICA 2105



Input data BS2105 – onda P

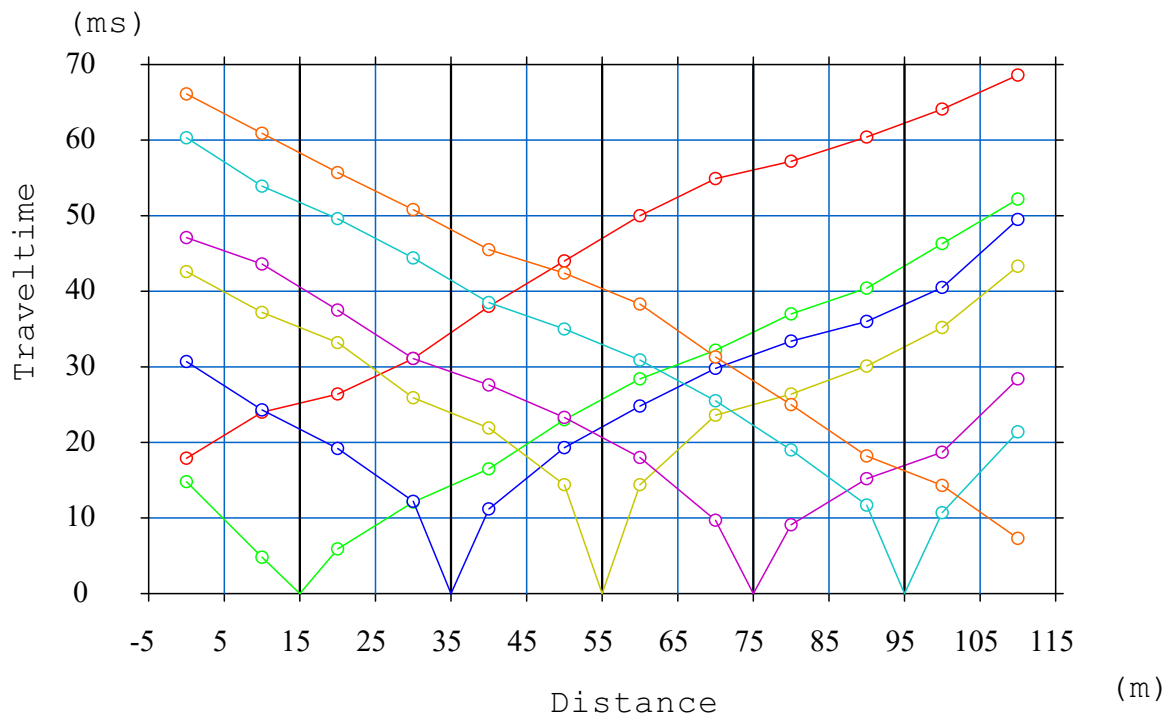
The spread contains 7 shotpoints and 12 geophones

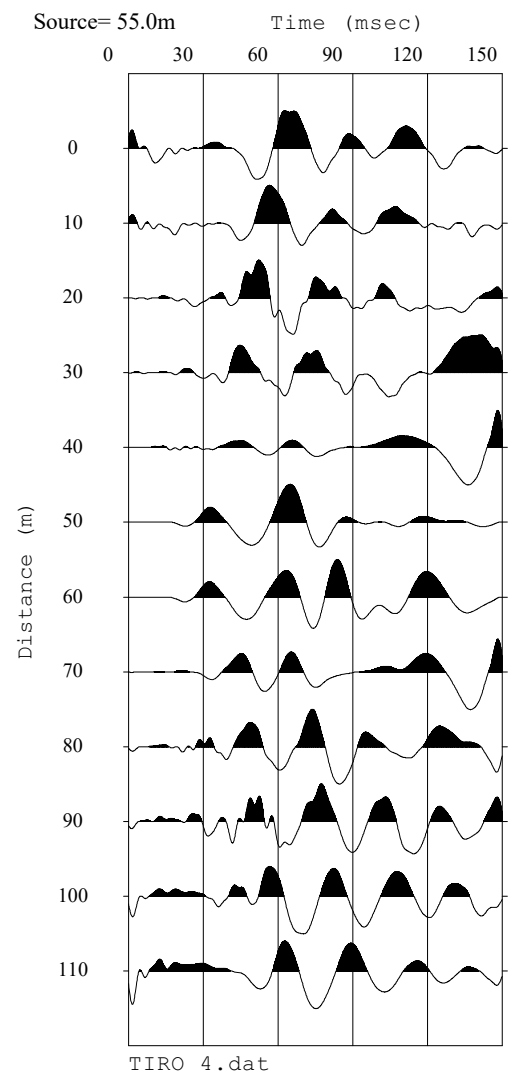
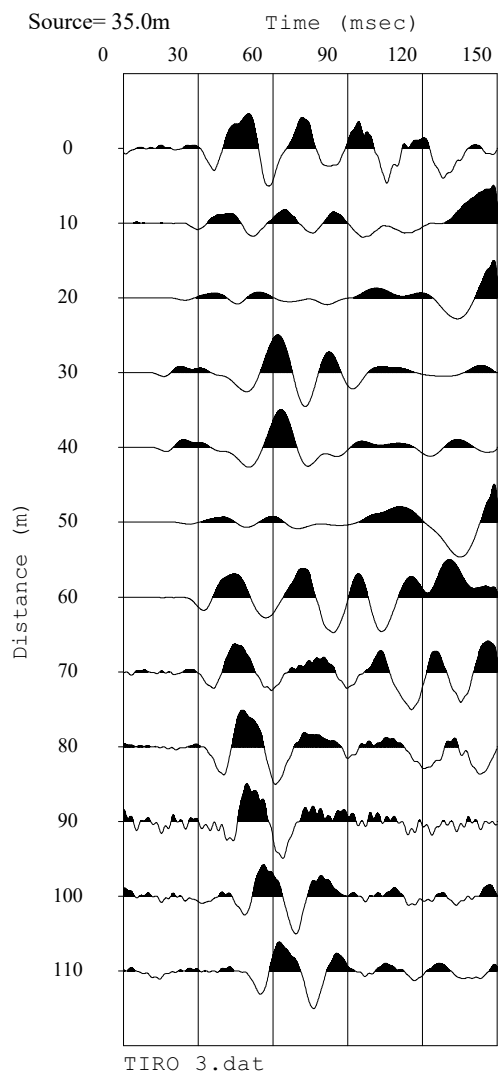
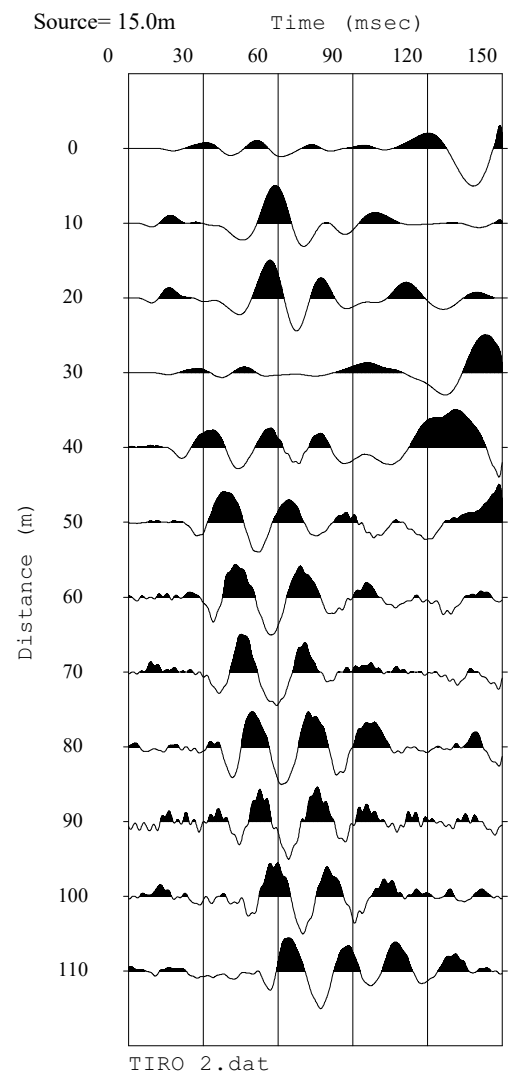
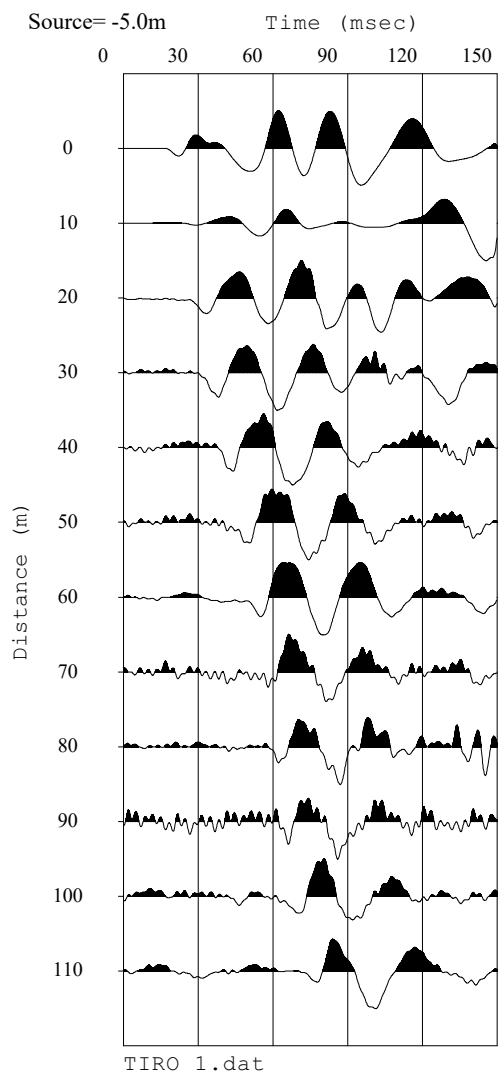
SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0.00
2	1.52	15.00	0.00	0.00
3	3.36	35.00	0.00	0.00
4	5.26	55.00	0.00	0.00
5	6.89	75.00	0.00	0.00
6	8.36	95.00	0.00	0.00
7	10.20	115.00	0.00	0.00

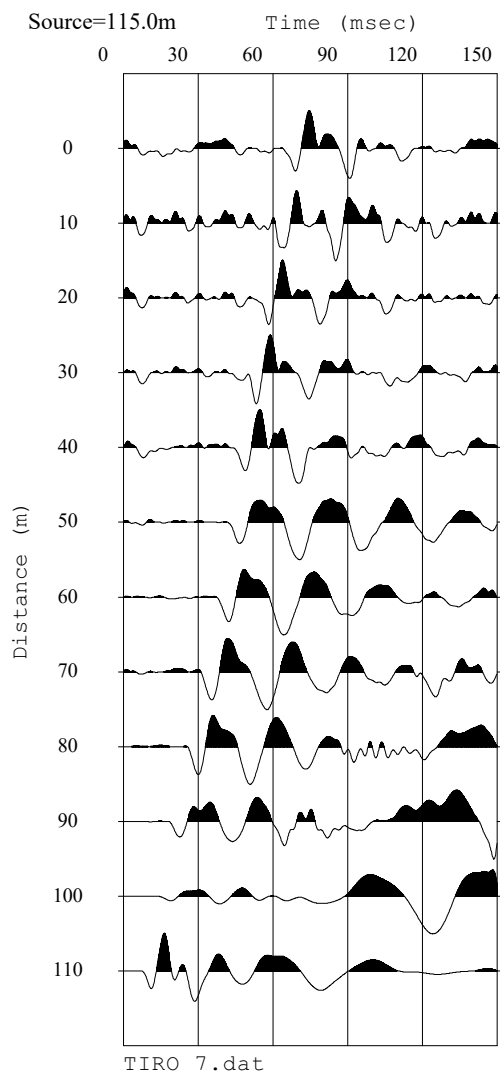
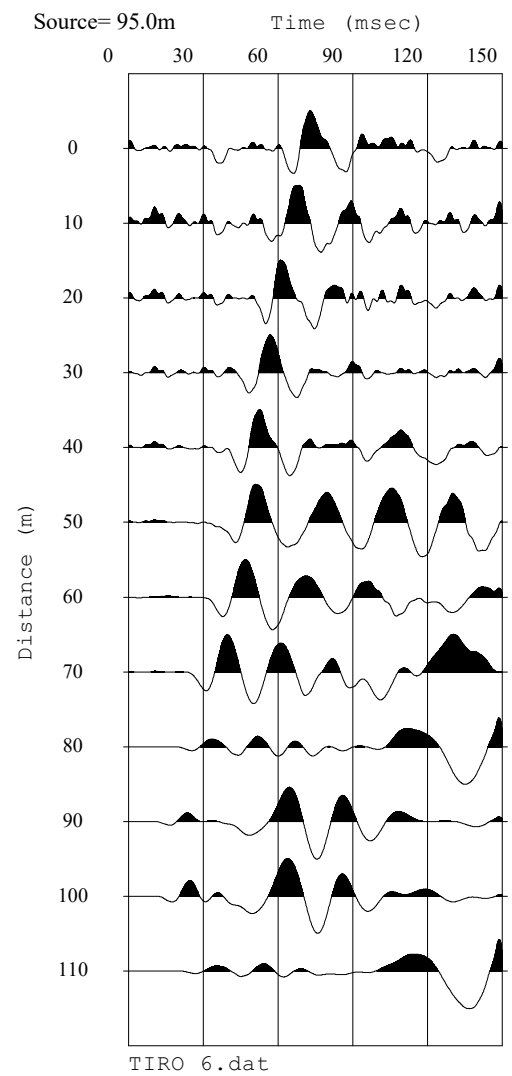
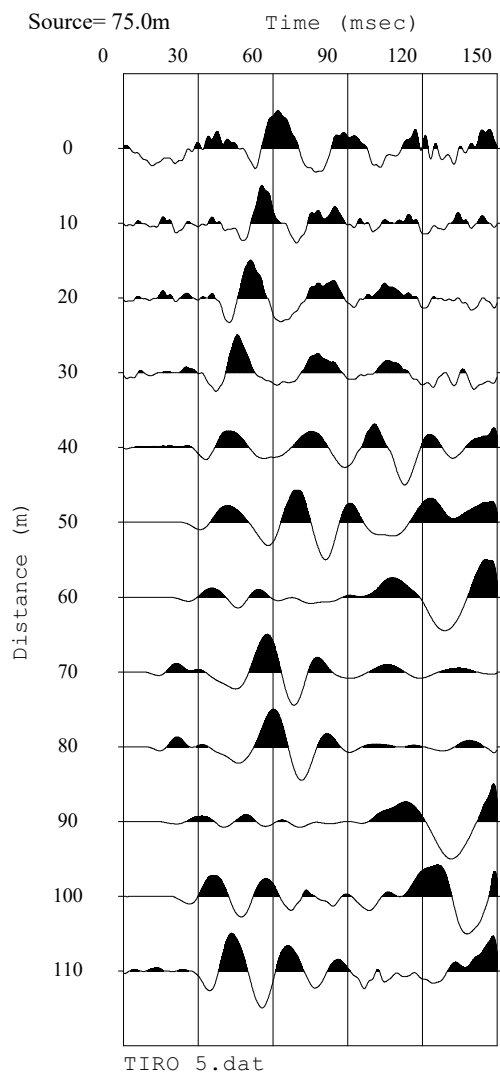
Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.33	0	0	17.97 1	14.85 1	30.78 1	42.63 1	47.17 1	60.34 1	66.15 1
2	1.09	10	0	24.03 1	4.86 1	24.32 1	37.25 1	43.62 1	53.98 1	60.93 1
3	1.95	20	0	26.46 1	5.94 1	19.27 1	33.30 1	37.52 1	49.66 1	55.80 1
4	2.93	30	0	31.19 1	12.15 1	12.24 1	25.96 1	31.18 1	44.45 1	50.84 1
5	3.8	40	0	38.07 1	16.57 1	11.25 1	21.98 1	27.65 1	38.58 1	45.54 1
6	4.88	50	0	44.01 1	23.06 1	19.38 1	14.45 1	23.31 1	35.03 1	42.40 1
7	5.64	60	0	50.08 1	28.49 1	24.87 1	14.45 1	18.10 1	30.93 1	38.36 1
8	6.51	70	0	54.94 1	32.30 1	29.83 1	23.63 1	9.73 1	25.52 1	31.38 1
9	7.27	80	0	57.24 1	37.02 1	33.42 1	26.46 1	9.18 1	19.07 1	25.05 1
10	8.03	90	0	60.40 1	40.44 1	36.05 1	30.11 1	15.27 1	11.77 1	18.23 1
11	8.68	100	0	64.13 1	46.34 1	40.50 1	35.28 1	18.77 1	10.70 1	14.37 1
12	9.11	110	0	68.64 1	52.20 1	49.58 1	43.33 1	28.49 1	21.48 1	7.31 1

Out data BS2105 – onda P

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.47	16.68
2	15.00	2.53	11.72
3	35.00	2.66	8.38
4	55.00	3.20	6.56
5	75.00	2.53	9.21
6	95.00	1.65	11.30
7	115.00	3.80	10.49
Geo			
1	0.00	2.35	11.99
2	10.00	2.65	12.14
3	20.00	2.31	10.83
4	30.00	2.62	9.98
5	40.00	2.60	6.99
6	50.00	3.17	6.75
7	60.00	2.98	7.04
8	70.00	2.98	8.36
9	80.00	2.00	10.01
10	90.00	1.91	11.03
11	100.00	2.07	11.22
12	110.00	2.98	11.10







Input data BS2105 – onda SH

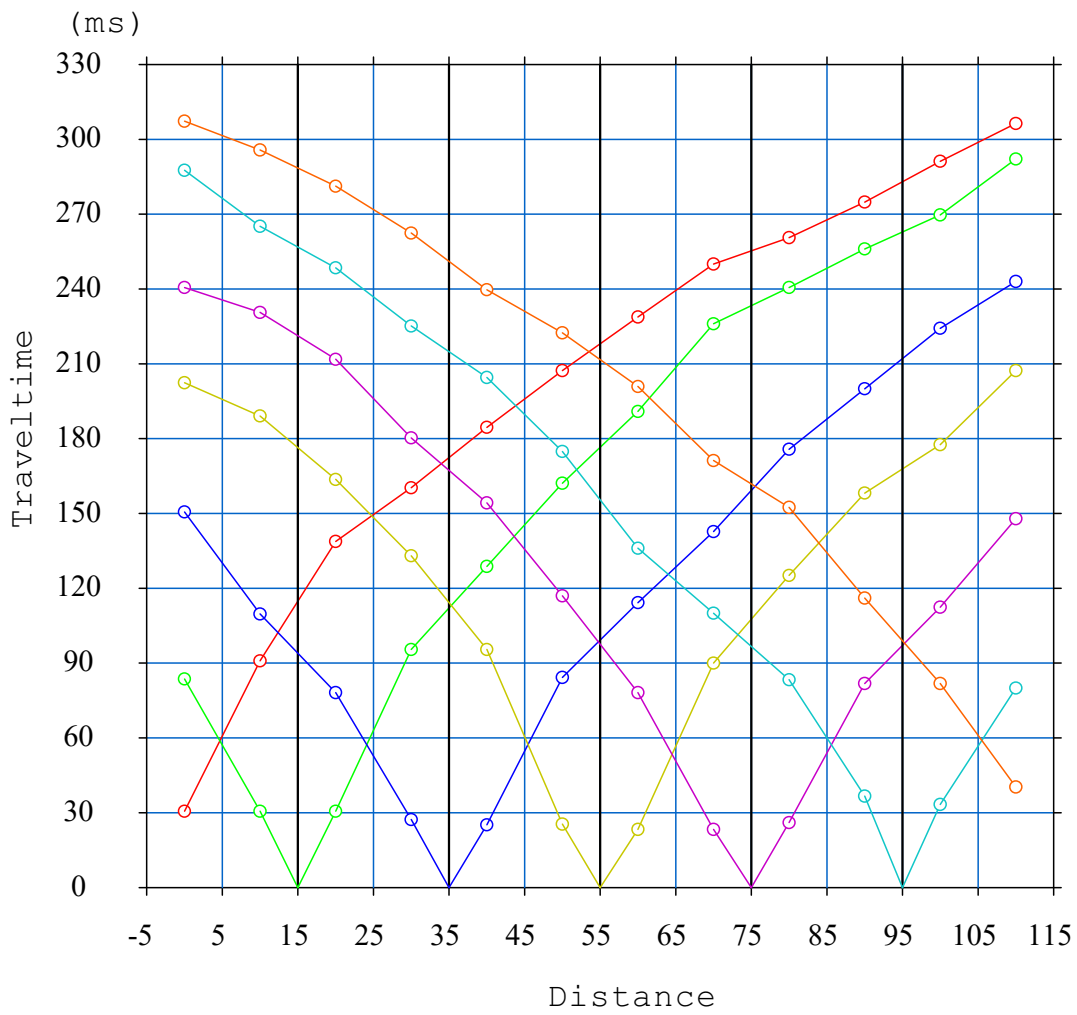
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0.00
2	1.52	15.00	0.00	0.00
3	3.36	35.00	0.00	0.00
4	5.26	55.00	0.00	0.00
5	6.89	75.00	0.00	0.00
6	8.36	95.00	0.00	0.00
7	10.20	115.00	0.00	0.00

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.33	0	0	30.68 1	83.83 1	150.66 1	202.62 1	240.87 1	287.65 1	307.40 1
2	1.09	10	0	91.13 1	30.68 1	109.96 1	189.30 1	230.85 1	265.17 1	295.85 1
3	1.95	20	0	138.81 1	30.68 1	78.37 1	163.86 1	212.02 1	248.77 1	281.27 1
4	2.93	30	0	160.38 1	95.68 1	27.57 1	133.27 1	180.43 1	225.38 1	262.44 1
5	3.8	40	0	184.63 1	128.79 1	25.21 1	95.68 1	154.31 1	204.73 1	239.96 1
6	4.88	50	0	207.46 1	162.20 1	84.52 1	25.70 1	117.25 1	174.96 1	222.65 1
7	5.64	60	0	229.03 1	191.06 1	114.51 1	23.39 1	78.37 1	136.08 1	201.08 1
8	6.51	70	0	250.00 1	226.29 1	142.83 1	90.21 1	23.39 1	110.23 1	171.32 1
9	7.27	80	0	260.62 1	240.87 1	175.95 1	125.45 1	26.12 1	83.59 1	152.48 1
10	8.03	90	0	274.89 1	256.06 1	200.17 1	158.38 1	82.01 1	36.68 1	116.34 1
11	8.68	100	0	291.30 1	269.73 1	224.47 1	177.69 1	112.69 1	33.41 1	82.01 1
12	9.11	110	0	306.48 1	292.21 1	243.30 1	207.46 1	147.93 1	80.19 1	40.40 1

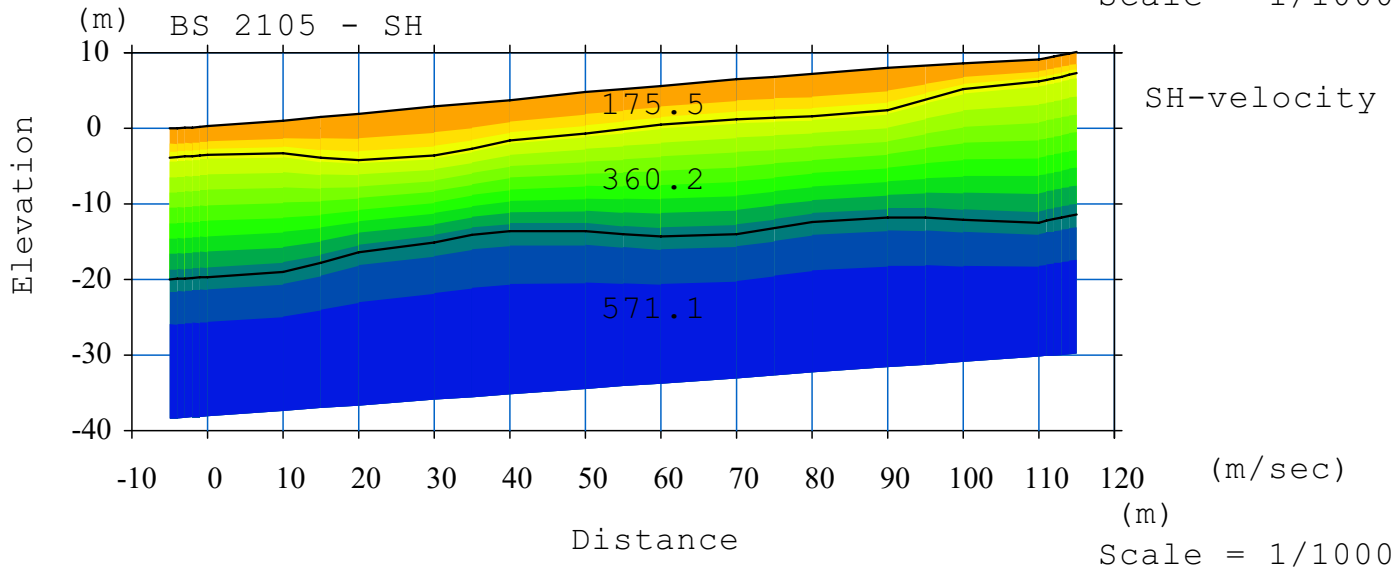
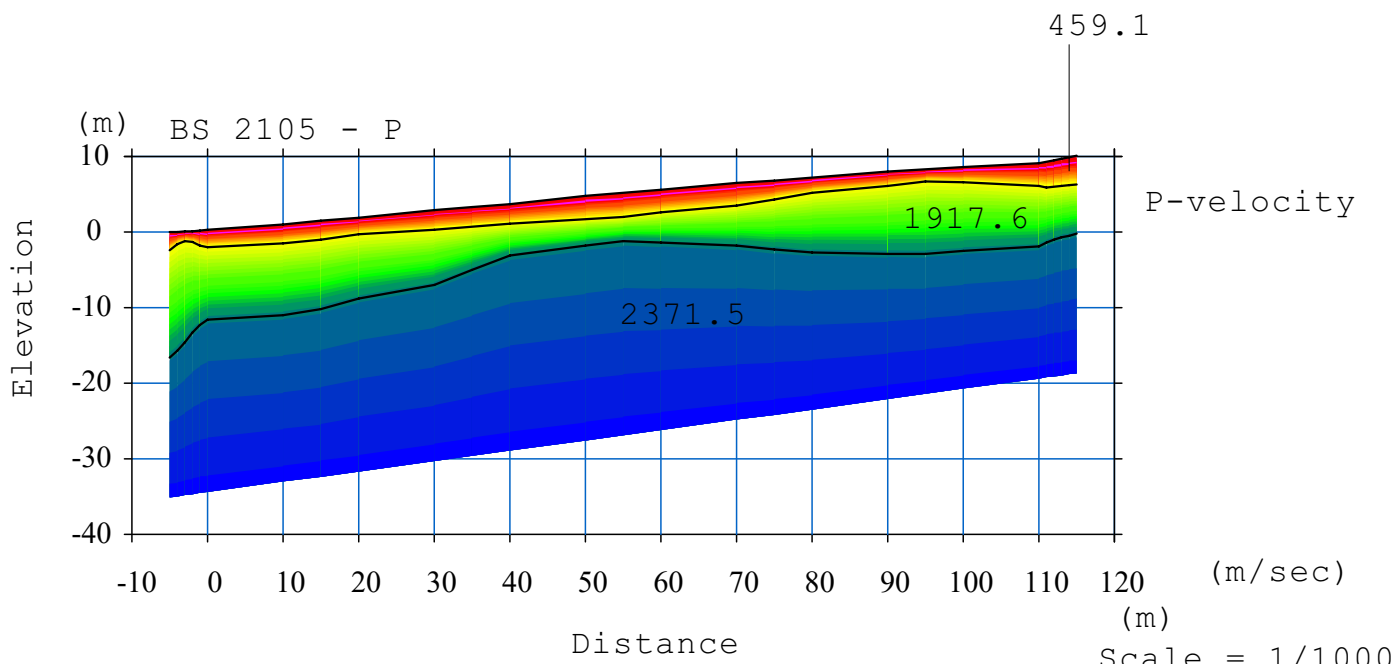
Out data BS2105 – onda SH

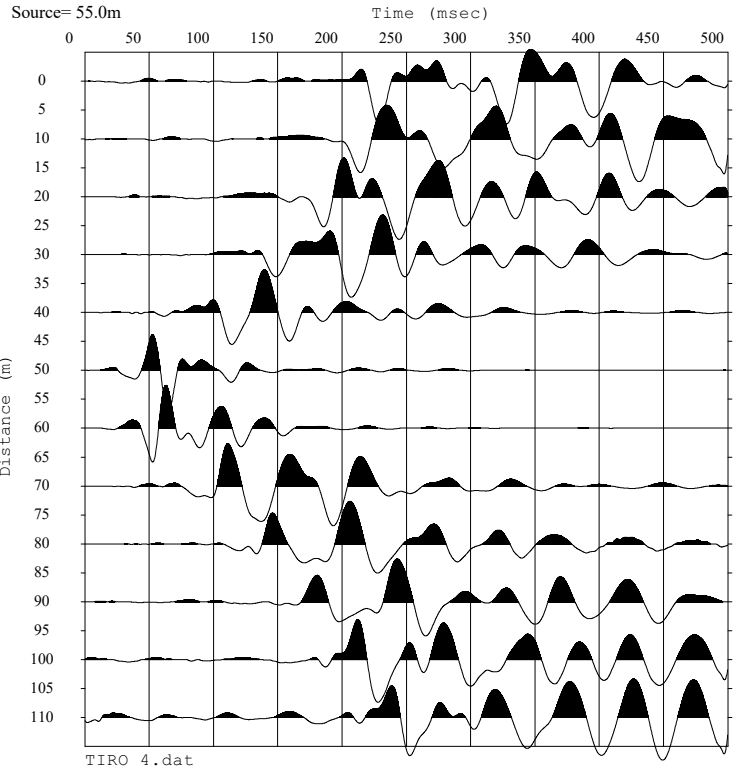
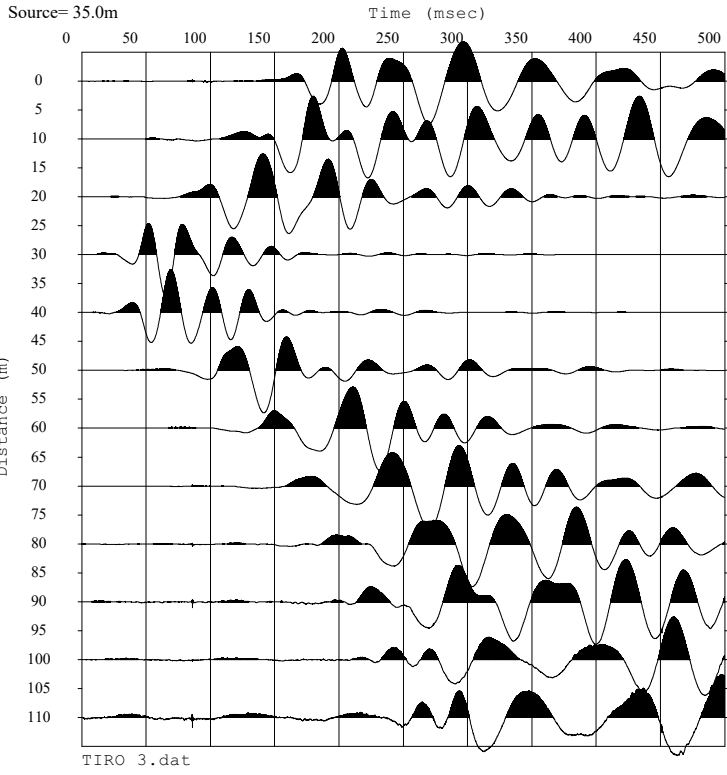
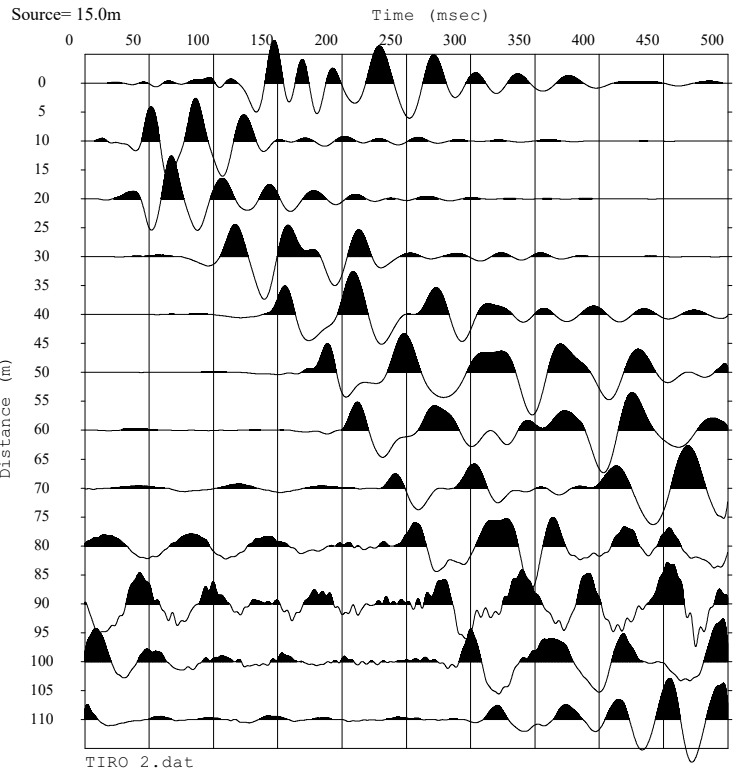
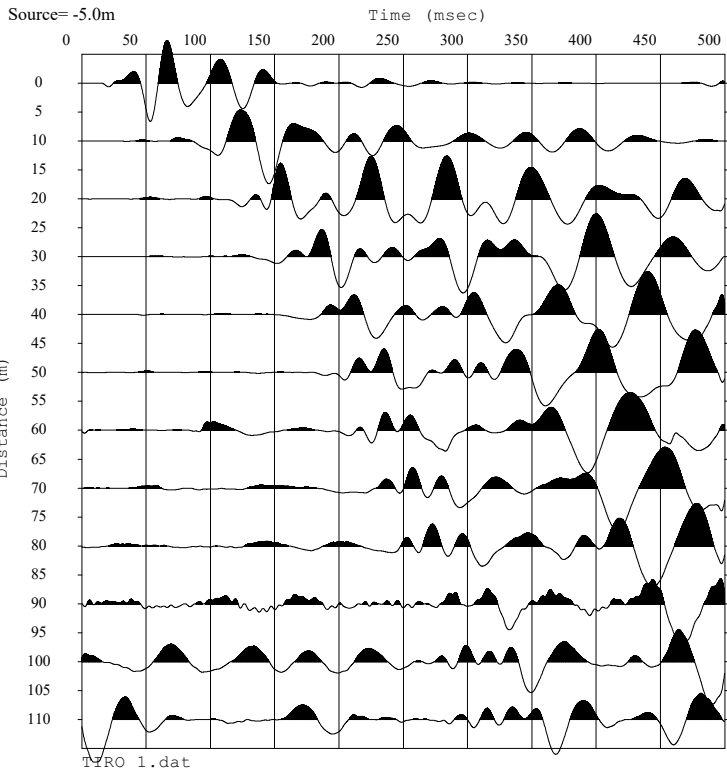
SP	X-loc	Layer 2	Layer 3
1	-5.00	3.92	20.03
2	15.00	5.43	19.38
3	35.00	6.11	17.50
4	55.00	5.40	19.29
5	75.00	5.44	20.18
6	95.00	4.49	20.22
7	115.00	2.87	21.62
Geo			
1	0.00	3.92	20.03
2	10.00	4.43	20.12
3	20.00	6.15	18.38
4	30.00	6.59	18.04
5	40.00	5.42	17.46
6	50.00	5.59	18.56
7	60.00	5.07	19.94
8	70.00	5.27	20.57
9	80.00	5.59	19.69
10	90.00	5.60	19.93
11	100.00	3.41	20.81
12	110.00	2.87	21.62

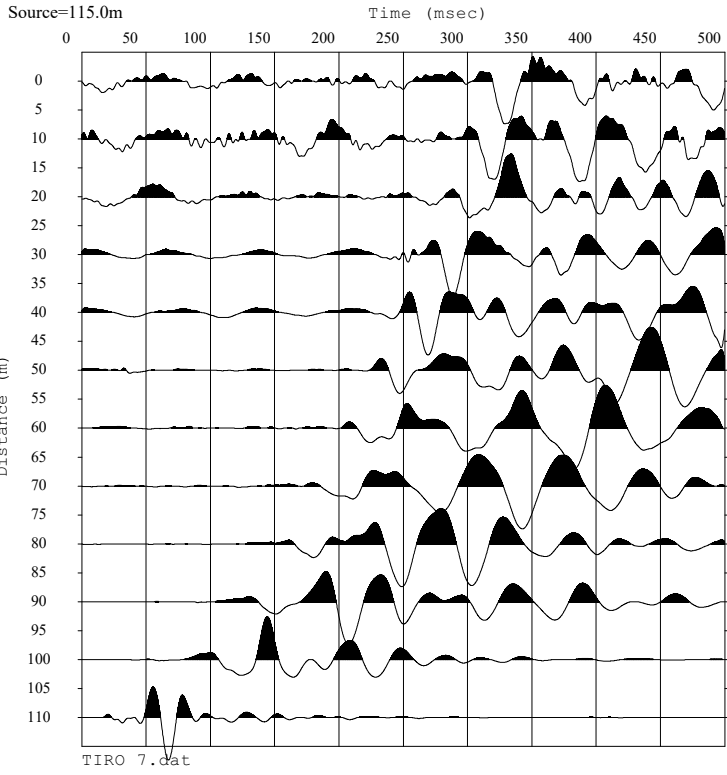
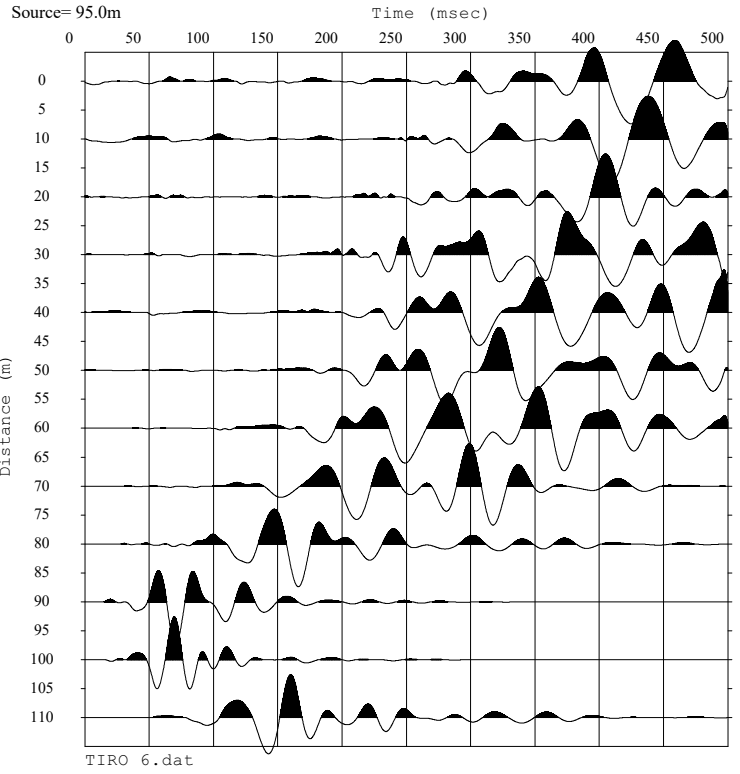
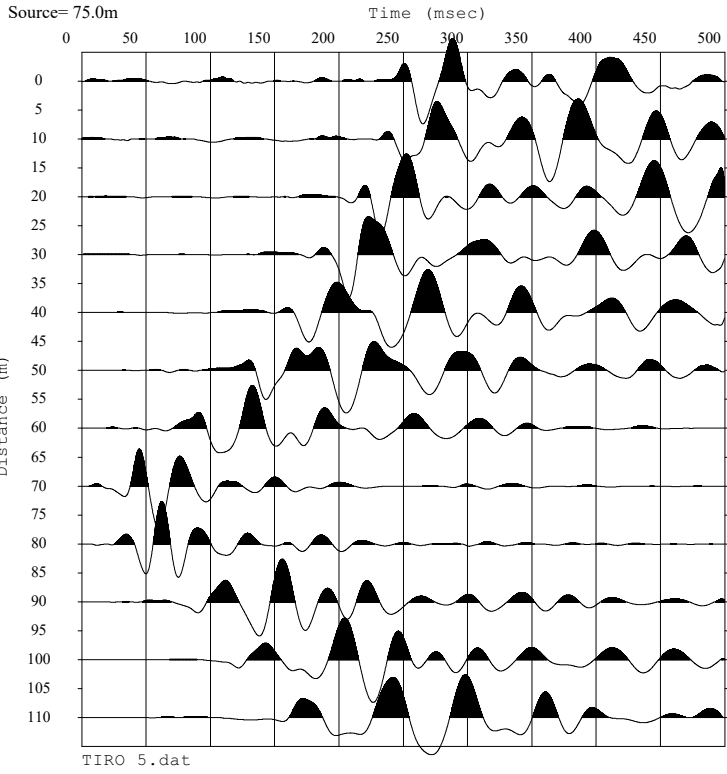


BS2105 - ONDA S.vs

Scale = 1 / 1000







BASE SISMICA 2106



INPUT DATA BS 2106

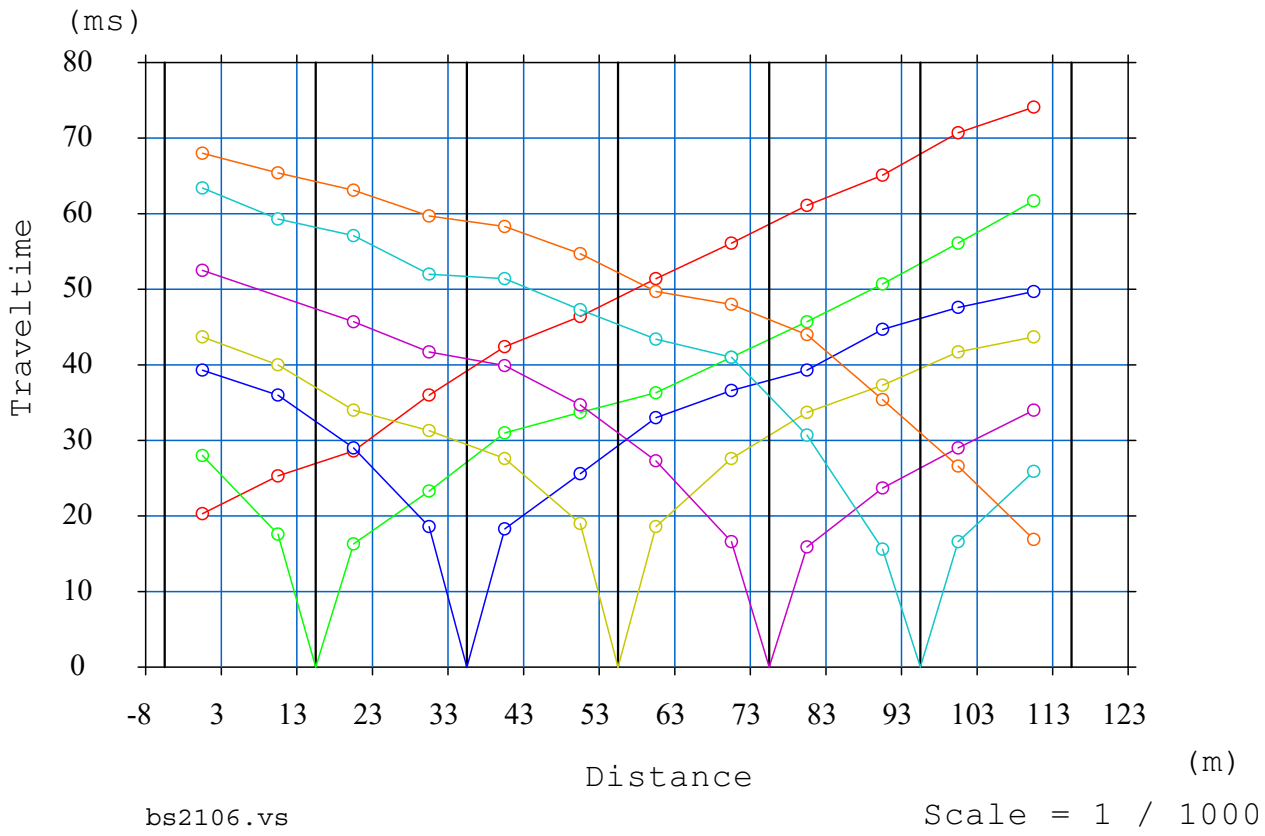
The spread contains 7 shotpoints and 12 geophones

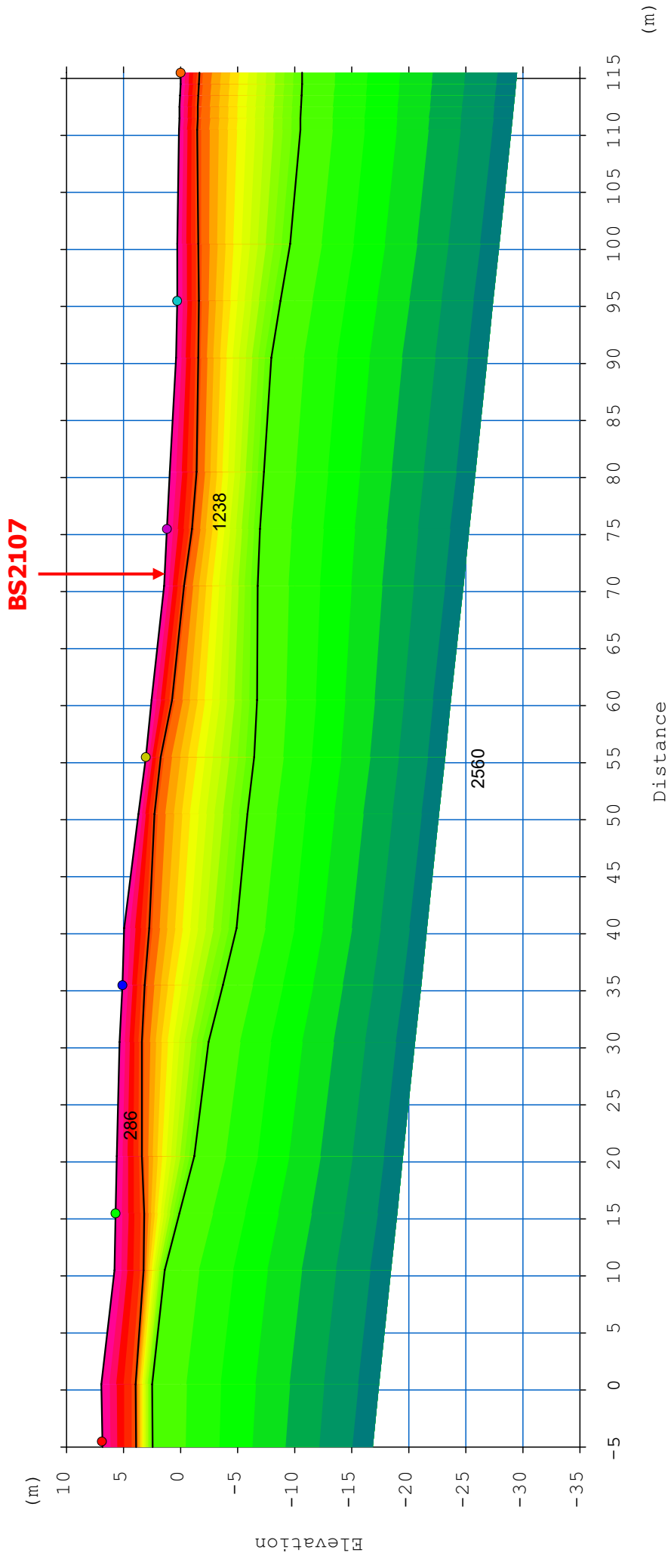
SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	5.73	15.00	0	0
3	5.12	35.00	0	0
4	3.07	55.00	0	0
5	1.23	75.00	0	0
6	0.35	95.00	0	0
7	0.00	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	6.96	0.00	0	20.36 1	28.01 1	39.38 1	43.76 1	52.52 1	63.45 1	68.06 1
2	5.83	10.00	0	25.31 1	17.66 1	36.00 1	40.02 1	0.00 -1	59.40 1	65.47 1
3	5.61	20.00	0	28.69 1	16.31 1	29.02 1	34.09 1	45.79 1	57.15 1	63.11 1
4	5.38	30.00	0	36.00 1	23.40 1	18.67 1	31.39 1	41.72 1	52.09 1	59.74 1
5	4.97	40.00	0	42.41 1	31.05 1	18.34 1	27.67 1	39.91 1	51.41 1	58.39 1
6	3.71	50.00	0	46.41 1	33.75 1	25.65 1	19.01 1	34.76 1	47.36 1	54.79 1
7	2.56	60.00	0	51.41 1	36.34 1	33.07 1	18.67 1	27.34 1	43.42 1	49.72 1
8	1.46	70.00	0	56.14 1	41.06 1	36.67 1	27.67 1	16.65 1	41.06 1	48.04 1
9	0.98	80.00	0	61.16 1	45.79 1	39.38 1	33.75 1	15.97 1	30.71 1	44.10 1
10	0.41	90.00	0	65.14 1	50.74 1	44.77 1	37.35 1	23.74 1	15.64 1	35.44 1
11	0.31	100.00	0	70.71 1	56.14 1	47.70 1	41.74 1	29.02 1	16.65 1	26.66 1
12	0.18	110.00	0	74.17 1	61.76 1	49.72 1	43.76 1	34.09 1	25.99 1	16.99 1

OUTPUT DATA BS 2106

SP	X-loc	Layer 2	Layer 3
1	-5.00	0.00	0.00
2	15.00	2.48	5.61
3	35.00	1.96	8.85
4	55.00	1.32	9.54
5	75.00	2.24	8.19
6	95.00	1.95	9.11
7	115.00	0.00	0.00
Geo			
1	0.00	2.96	4.44
2	10.00	2.55	4.41
3	20.00	2.18	6.82
4	30.00	1.93	7.85
5	40.00	2.21	9.90
6	50.00	1.39	9.60
7	60.00	1.79	9.27
8	70.00	1.77	8.26
9	80.00	2.40	8.33
10	90.00	1.99	8.38
11	100.00	1.86	9.93
12	110.00	1.65	10.69





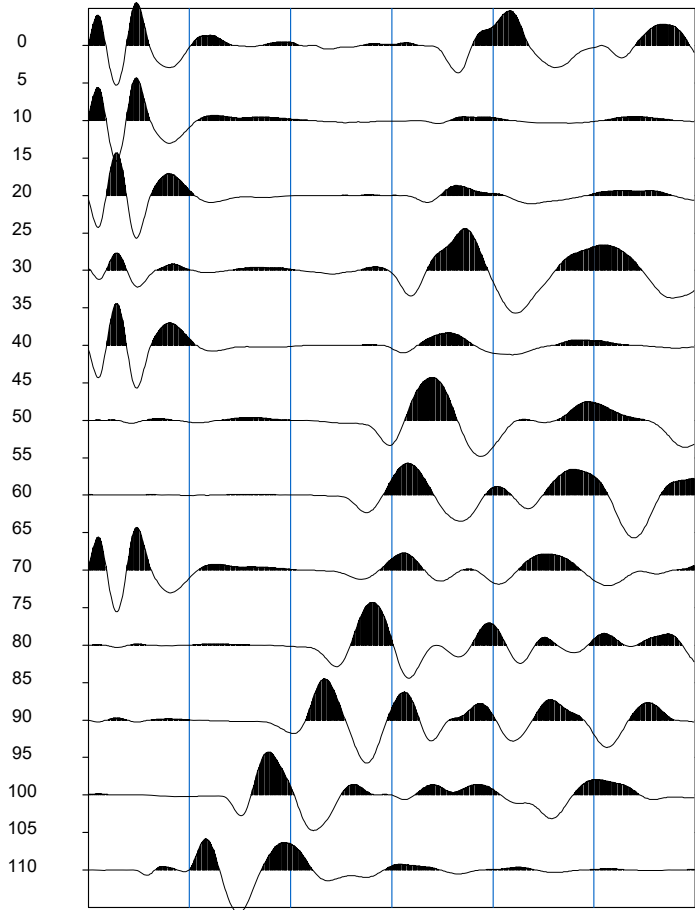
bs2106.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

0 20 40 60 80 100 120

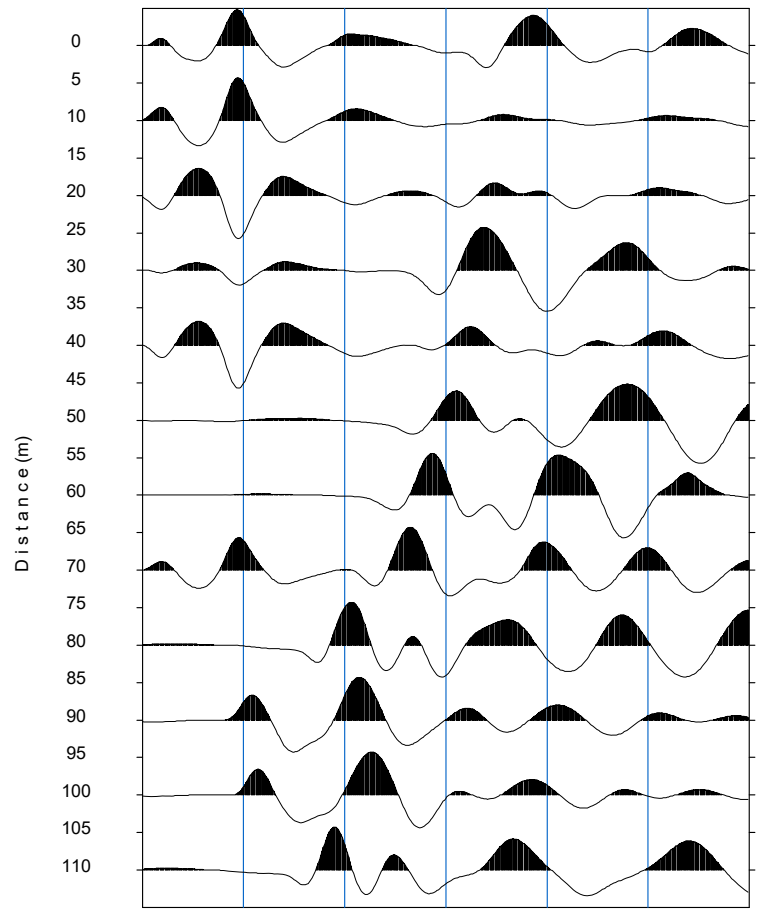


tiro 7.dat

Source= 95.0m

Time (msec)

0 20 40 60 80 100 120

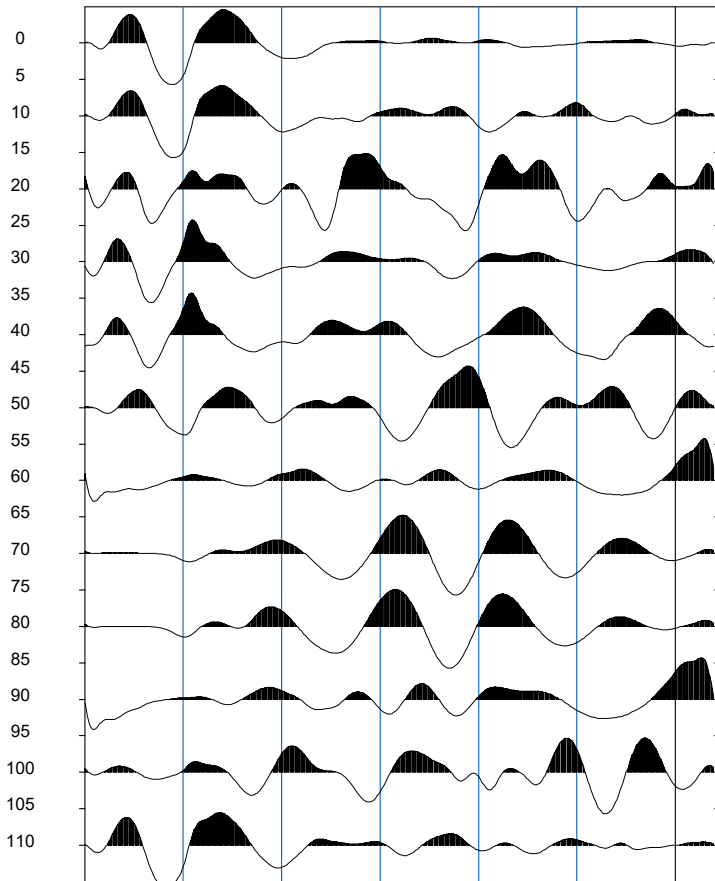


tiro 6.dat

Source= 75.0m

Time (msec)

0 20 40 60 80 100 120

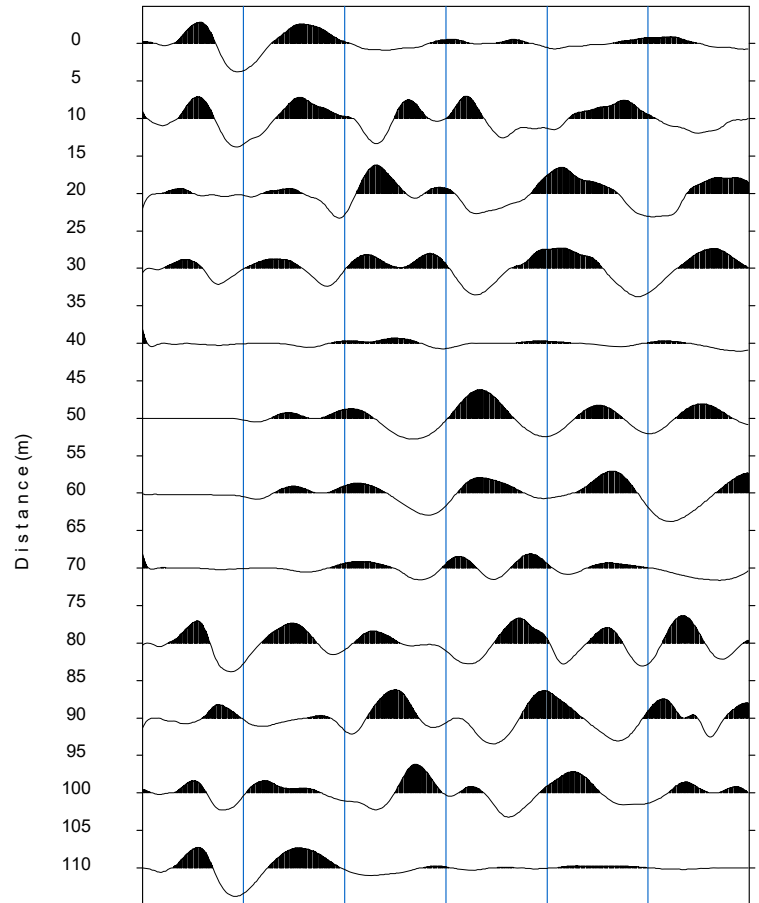


tiro 5.dat

Source= 55.0m

Time (msec)

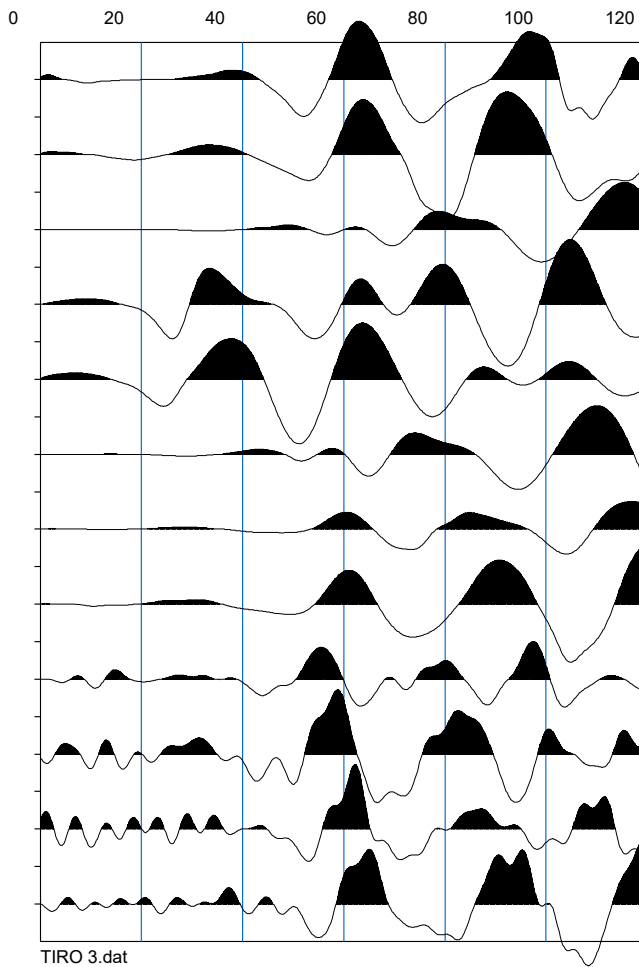
0 20 40 60 80 100 120



tiro 4.dat

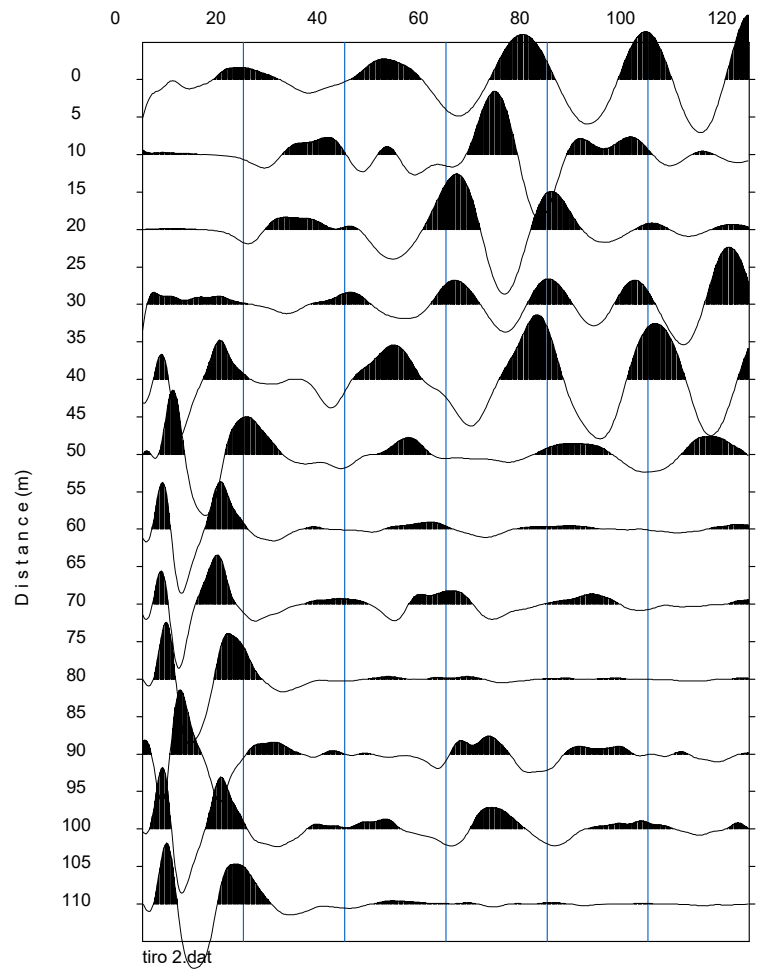
Source= 35.0m

T i m e (msec)



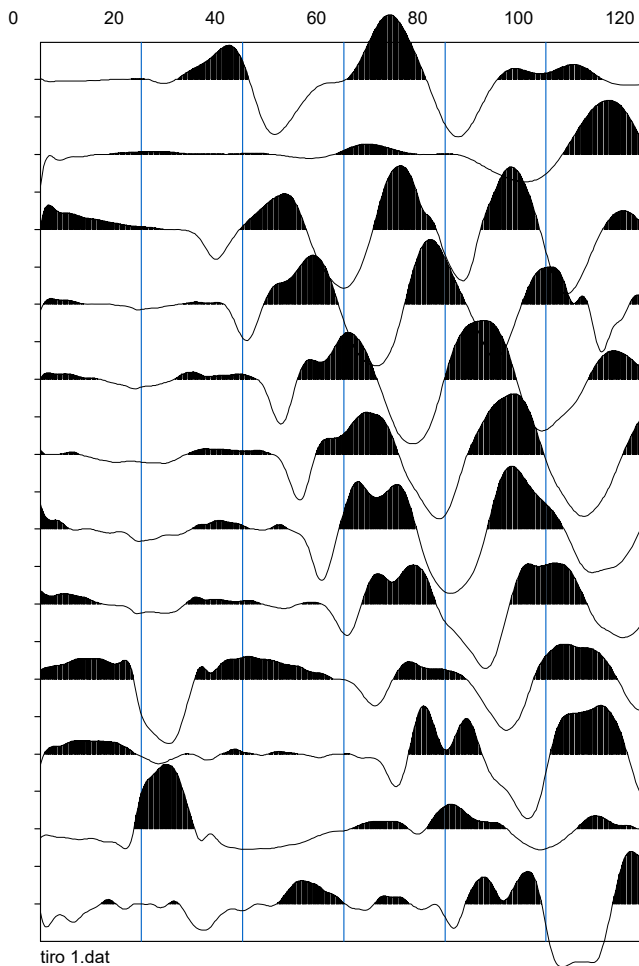
Source= 15.0m

T i m e (msec)



Source= -5.0m

T i m e (msec)



BASE SISMICA 2107



INPUT DATA BS 2107

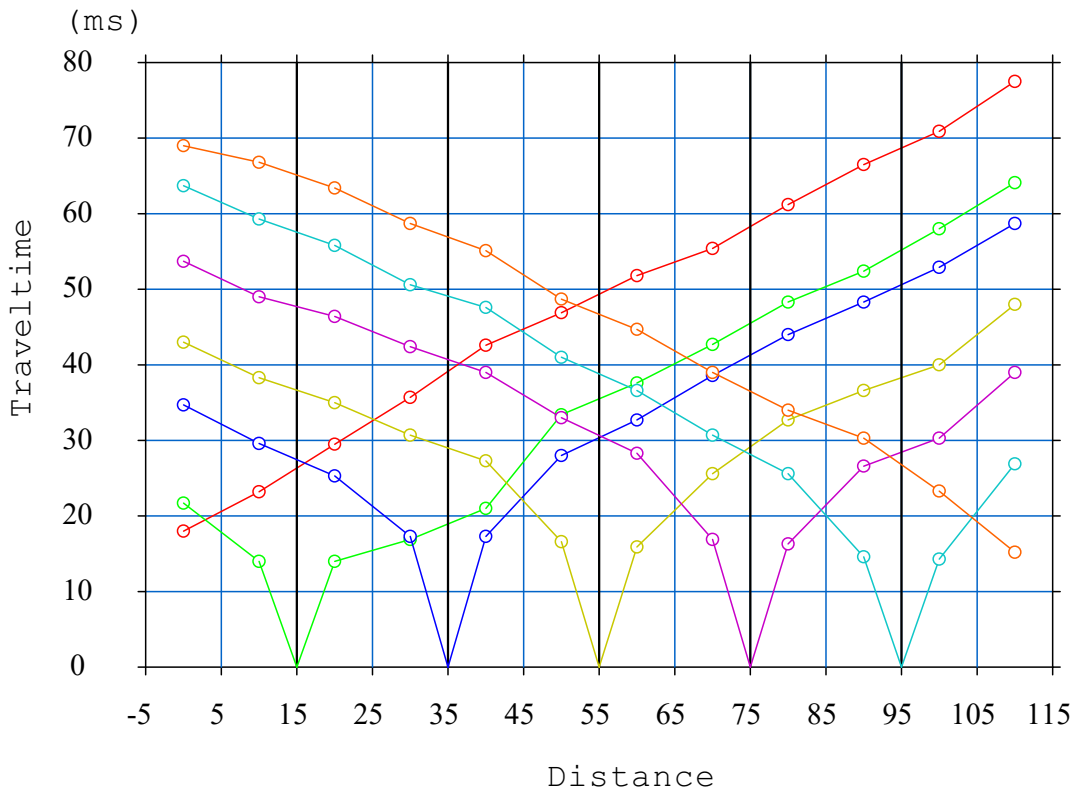
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	-5.77	-5.00	0.00	0.00
2	-4.37	15.00	0.00	0.00
3	-4.10	35.00	0.00	0.00
4	-4.30	55.00	0.00	0.00
5	-3.67	75.00	0.00	0.00
6	-2.31	95.00	0.00	0.00
7	0.00	115.00	0.00	0.00

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	-5.77	0.00	0	18.00 1	21.71 1	34.76 1	43.09 1	53.77 1	63.79 1	69.07 1
2	-5.81	10.00	0	23.26 1	14.06 1	29.70 1	38.36 1	49.05 1	59.40 1	66.82 1
3	-4.81	20.00	0	29.56 1	14.06 1	25.31 1	35.10 1	46.46 1	55.85 1	63.45 1
4	-4.12	30.00	0	35.71 1	16.99 1	17.32 1	30.71 1	42.41 1	50.68 1	58.72 1
5	-4.06	40.00	0	42.67 1	21.04 1	17.32 1	27.34 1	39.04 1	47.70 1	55.12 1
6	-4.15	50.00	0	46.95 1	33.41 1	28.01 1	16.65 1	33.07 1	41.06 1	48.71 1
7	-4.43	60.00	0	51.84 1	37.69 1	32.74 1	15.97 1	28.35 1	36.67 1	44.77 1
8	-3.93	70.00	0	55.48 1	42.75 1	38.70 1	25.65 1	16.99 1	30.71 1	39.04 1
9	-3.22	80.00	0	61.25 1	48.37 1	44.10 1	32.74 1	16.31 1	25.65 1	34.09 1
10	-2.57	90.00	0	66.55 1	52.42 1	48.37 1	36.67 1	26.66 1	14.62 1	30.37 1
11	-2.09	100.00	0	70.97 1	58.05 1	52.92 1	40.05 1	30.37 1	14.40 1	23.40 1
12	-1.38	110.00	0	77.51 1	64.13 1	58.74 1	48.04 1	39.04 1	27.00 1	15.30 1

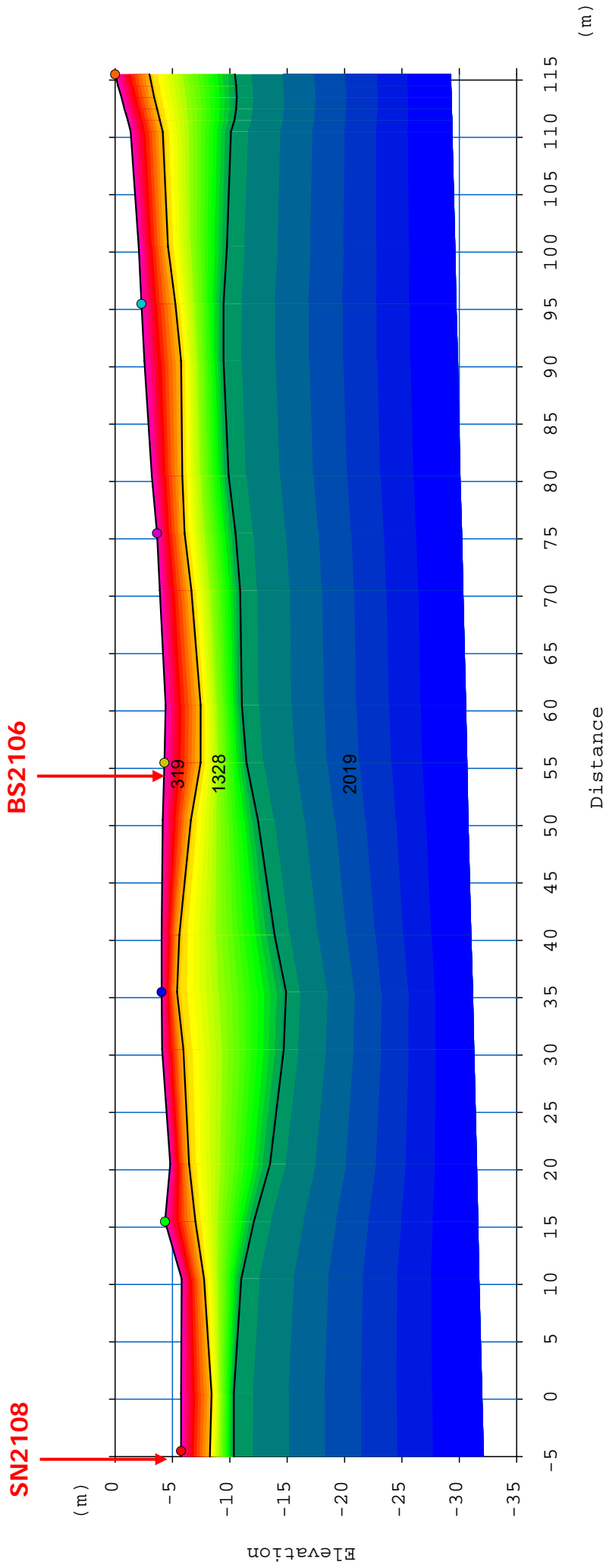
OUTPUT DATA BS 2107

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.50	4.61
2	15.00	2.66	7.74
3	35.00	1.35	10.82
4	55.00	3.20	7.16
5	75.00	2.43	6.85
6	95.00	2.95	7.16
7	115.00	3.05	10.48
Geo			
1	0.00	2.65	4.61
2	10.00	1.96	5.19
3	20.00	1.67	8.70
4	30.00	1.84	10.59
5	40.00	1.58	9.88
6	50.00	2.48	8.34
7	60.00	3.03	6.66
8	70.00	2.76	7.01
9	80.00	2.66	6.68
10	90.00	3.18	6.91
11	100.00	2.53	7.67
12	110.00	2.78	8.74



bs2107.vs

Scale = 1 / 1000



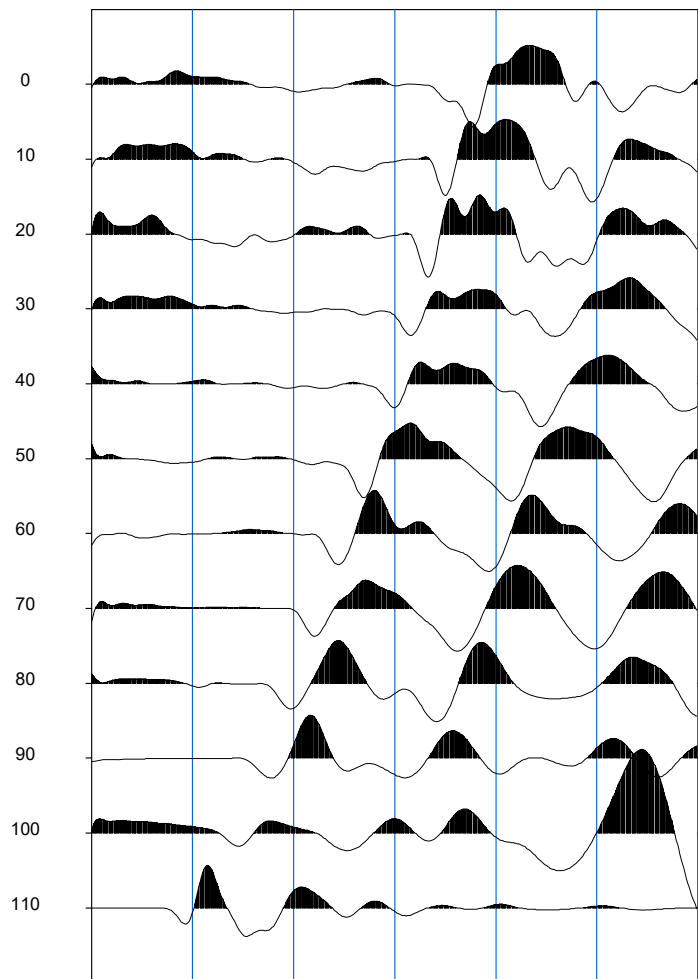
bs2107.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

0 20 40 60 80 100 120

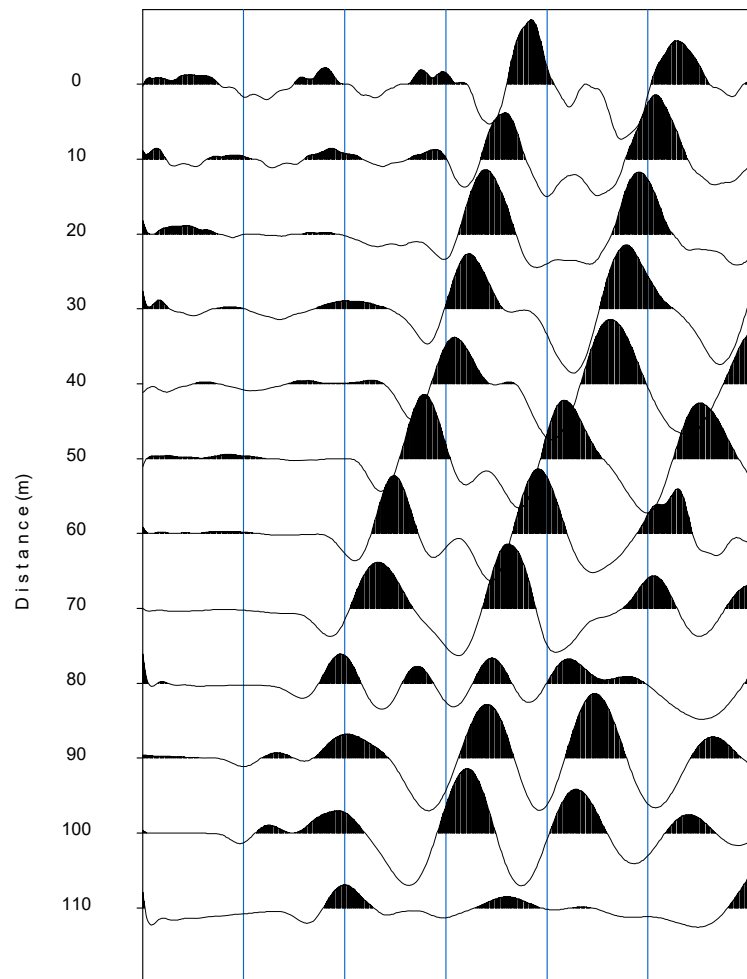


tiro 7.dat

Source=95.0m

Time (msec)

0 20 40 60 80 100 120

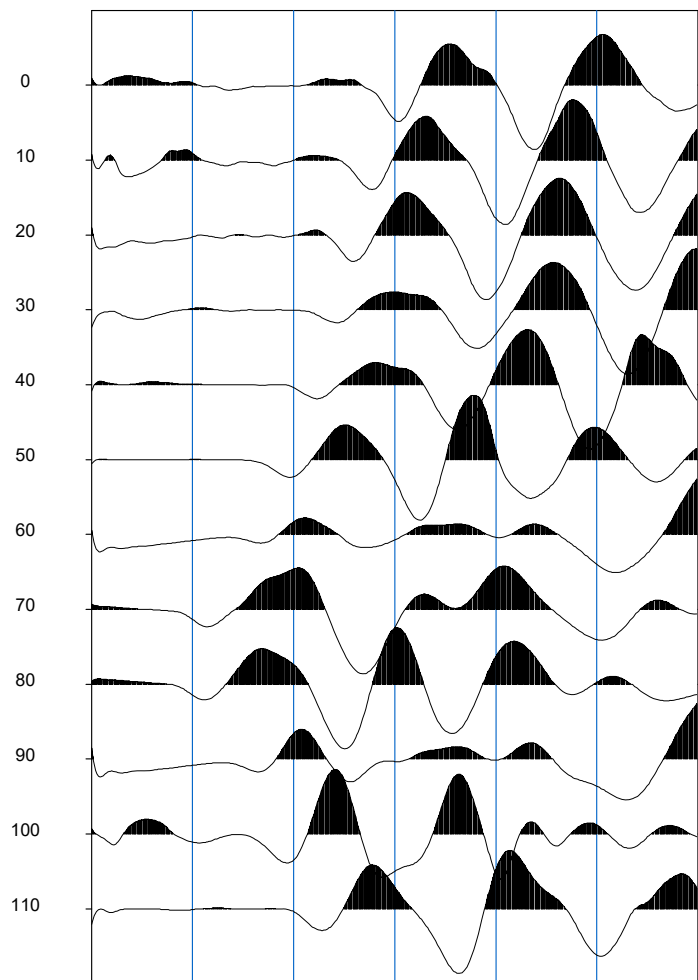


tiro 6.dat

Source=75.0m

Time (msec)

0 20 40 60 80 100 120

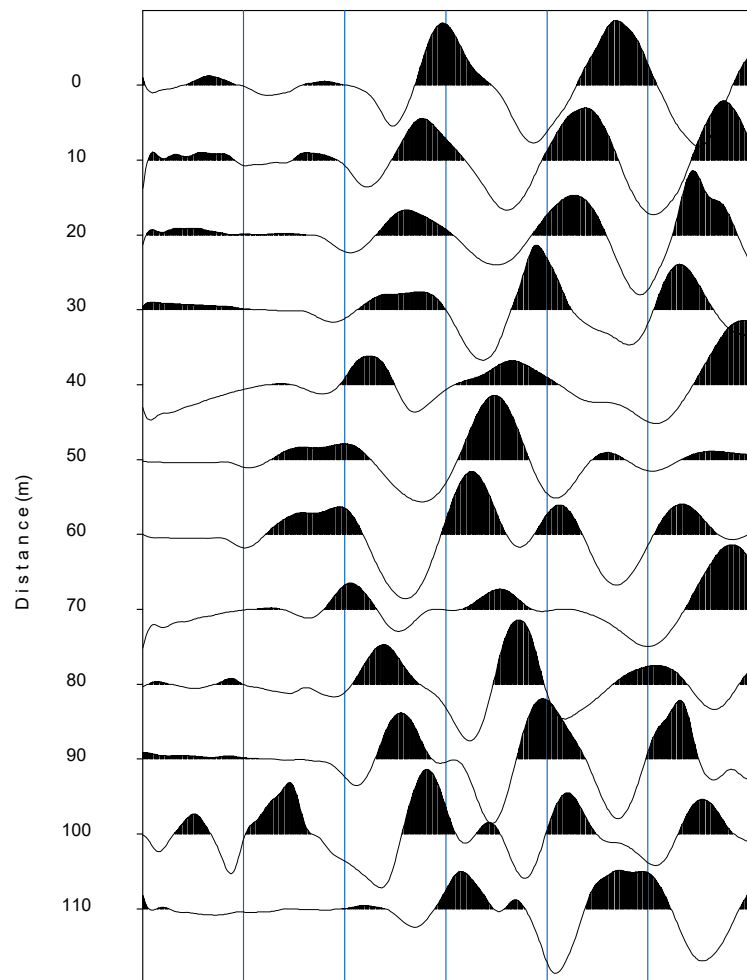


tiro 5.dat

Source=55.0m

Time (msec)

0 20 40 60 80 100 120

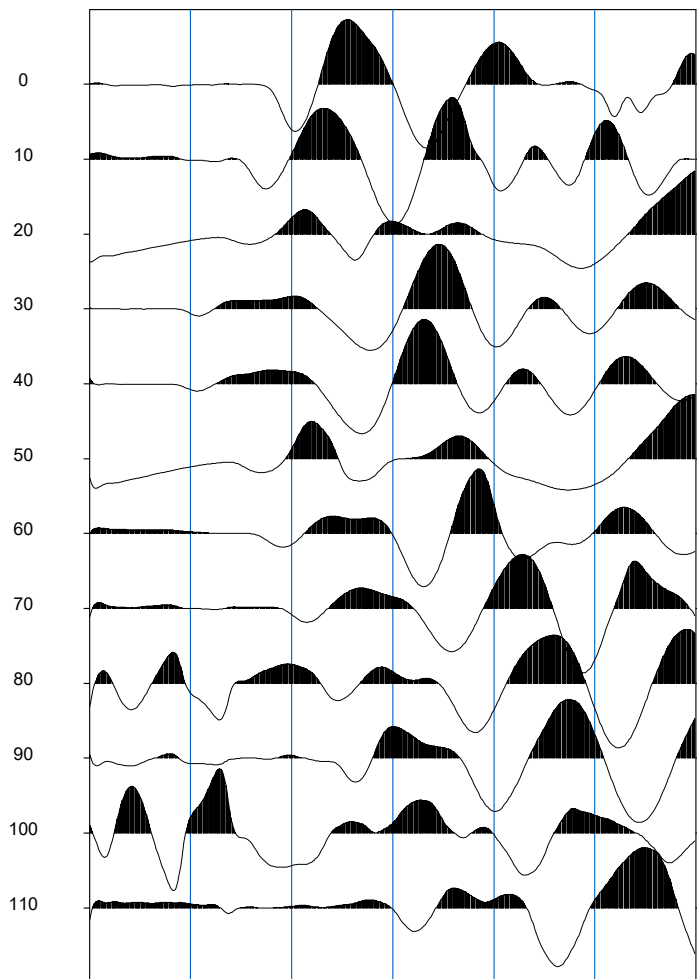


tiro 4.dat

Source= 35.0m

T i m e (msec)

0 20 40 60 80 100 120

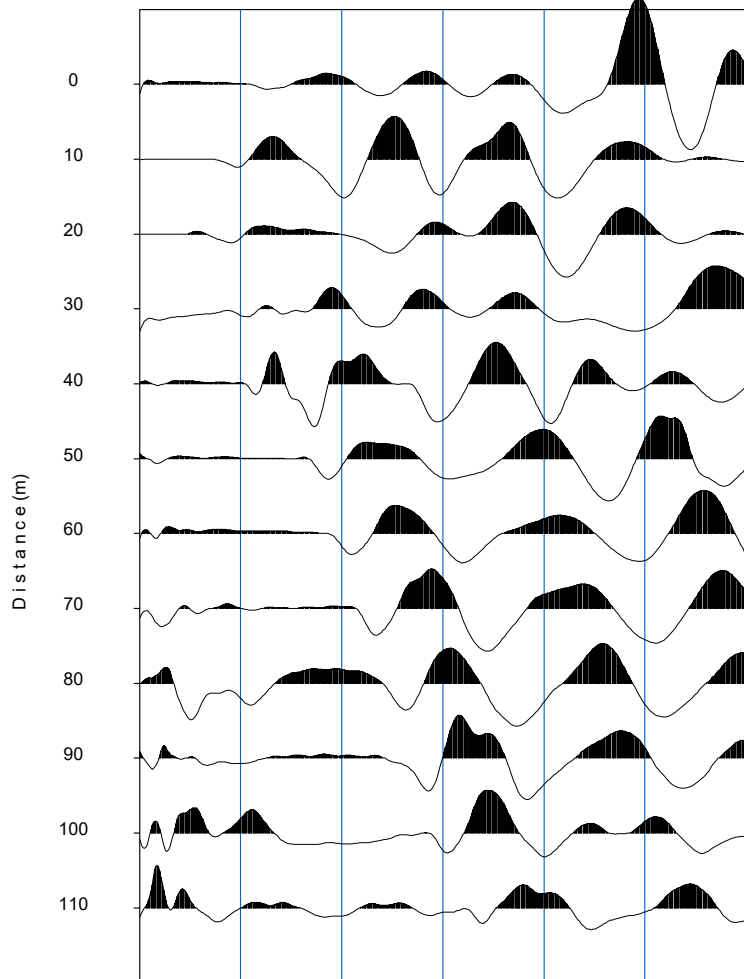


tiro 3.dat

Source= 15.0m

T i m e (msec)

0 20 40 60 80 100 120

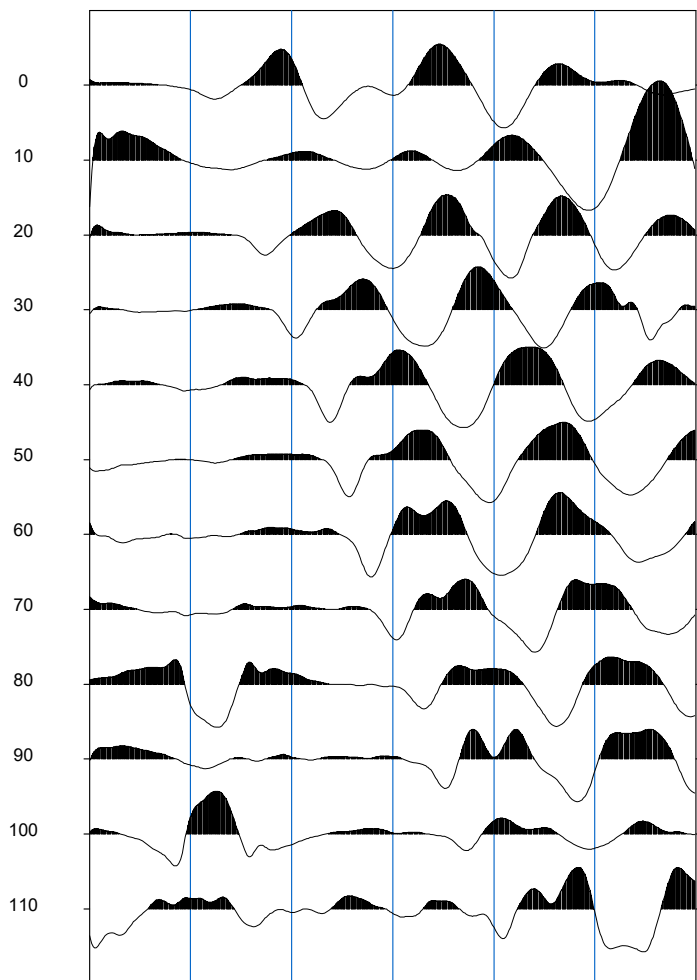


tiro 2.dat

Source= -5.0m

T i m e (msec)

0 20 40 60 80 100 120



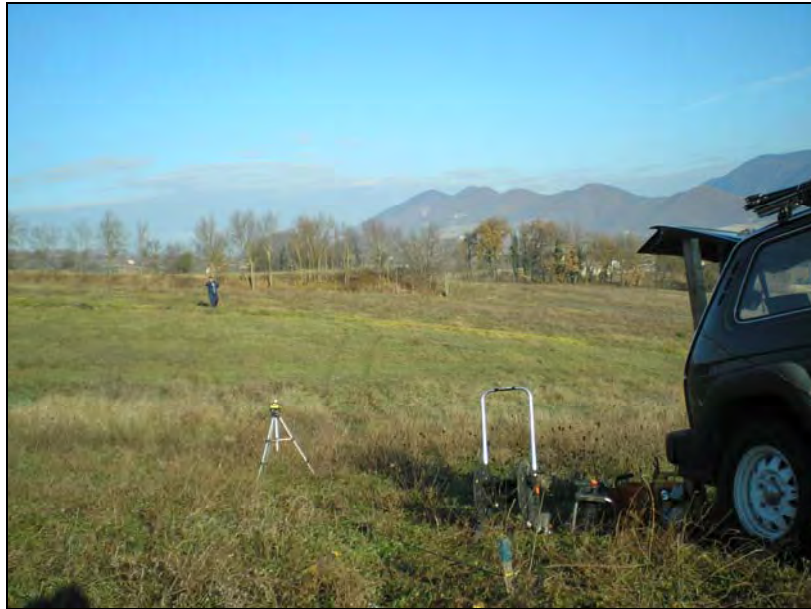
tiro 1.dat

BASE SISMICA 21 08-09-10



LINEA 8





LINEA 9





LINEA 10



INPUT DATA BS 21 08-09-10

The spread contains 19 shotpoints and 36 geophones

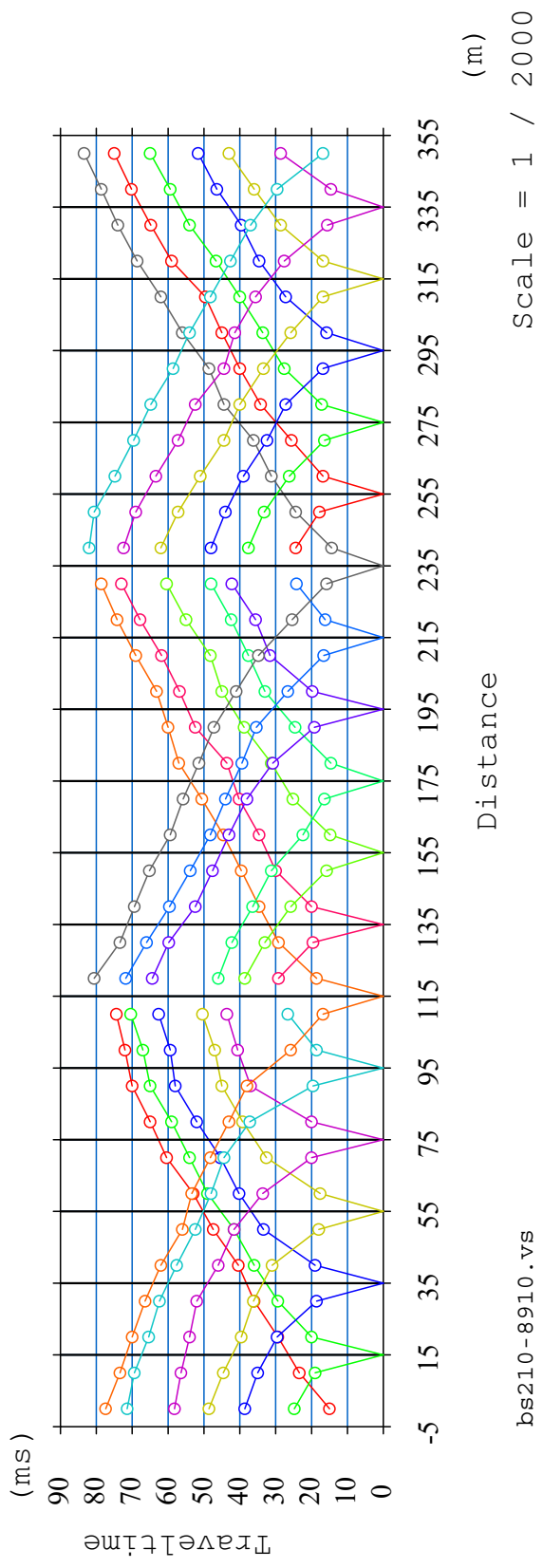
SP	Elev	X-loc	Y-loc	Depth
1	0.26	-5.00	0	0
2	0.35	15.00	0	0
3	0.41	35.00	0	0
4	0.60	55.00	0	0
5	1.43	75.00	0	0
6	2.50	95.00	0	0
7	5.15	115.00	0	0
8	8.00	135.00	0	0
9	10.55	155.00	0	0
10	13.35	175.00	0	0
11	16.40	195.00	0	0
12	19.10	215.00	0	0
13	23.15	235.00	0	0
14	26.00	255.00	0	0
15	28.80	275.00	0	0
16	31.15	295.00	0	0
17	34.00	315.00	0	0
18	36.65	335.00	0	0
19	39.45	355.00	0	0

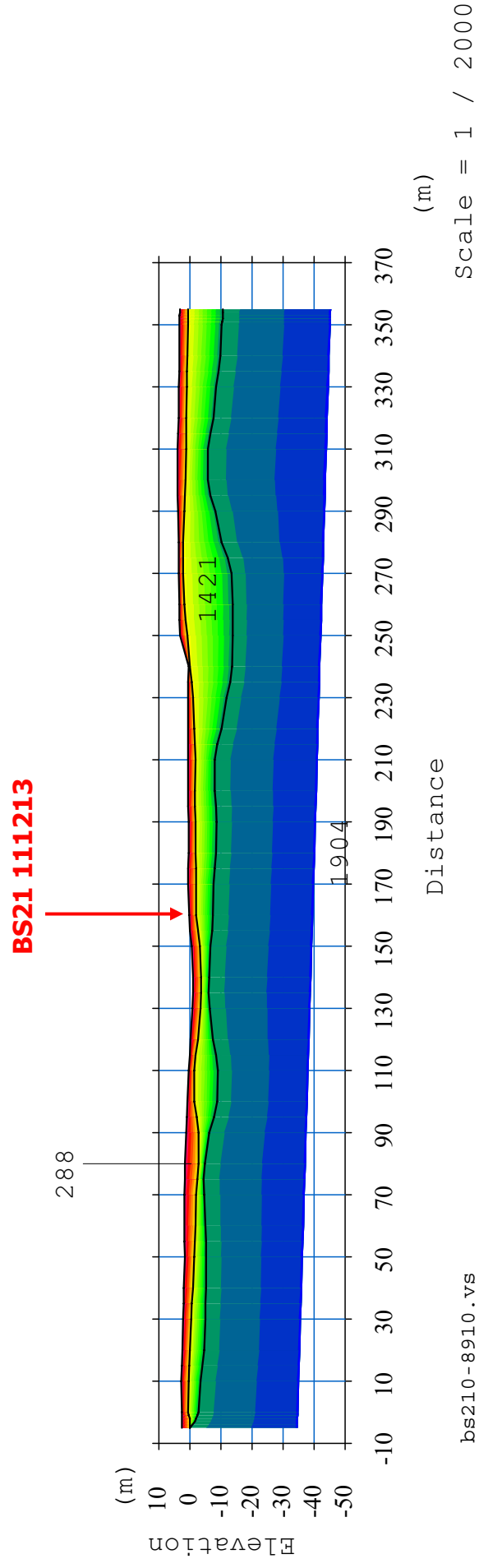
Geo	Elev	X-loc	Y-loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7	SP 8	SP 9	SP 10	SP 11	SP 12	SP 13	SP 14	SP 15	SP 16	SP 17	SP 18	SP 19	
1	0.22	0.00	0	13.021	23.741	33.631	45.931	58.281	67.911	74.971	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
2	0.32	10.00	0	24.401	18.081	29.491	40.801	54.881	59.331	71.291	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
3	0.39	20.00	0	30.991	18.871	24.471	37.021	46.691	55.851	65.141	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
4	0.41	30.00	0	34.301	25.991	17.531	31.041	43.681	53.601	62.101	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
5	0.41	40.00	0	38.351	30.111	18.411	26.591	39.951	48.641	57.611	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
6	0.43	50.00	0	45.551	35.171	28.521	20.941	36.591	46.181	54.111	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1
7	1.32	60.00	0	50.581	41.891	33.041	20.361	32.821	41.321	50.461	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1	0.00-1

OUTPUT DATA BS 21 08-09-10

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.29	3.34
2	15.00	2.40	4.18
3	35.00	2.80	6.28
4	55.00	3.06	8.03
5	75.00	3.02	10.70
6	95.00	2.95	10.94
7	115.00	2.48	9.25
8	135.00	2.74	6.93
9	155.00	2.14	8.52
10	175.00	2.80	9.19
11	195.00	3.28	10.04
12	215.00	3.99	10.70
13	235.00	3.78	9.62
14	255.00	2.54	4.72
15	275.00	3.33	5.38
16	295.00	2.94	9.08
17	315.00	2.96	11.10
18	335.00	2.95	9.23
19	355.00	3.29	8.24
Geo			
1	0.00	2.29	3.34
2	10.00	2.34	3.77
3	20.00	2.59	4.75
4	30.00	2.76	5.49
5	40.00	2.82	7.01
6	50.00	2.91	7.53
7	60.00	3.65	9.21
8	70.00	3.42	9.98
9	80.00	2.79	10.98
10	90.00	2.75	10.87
11	100.00	2.83	11.10
12	110.00	2.67	10.79
13	120.00	2.30	7.44
14	130.00	2.86	7.05
15	140.00	2.09	7.24
16	150.00	2.26	8.40
17	160.00	2.18	8.53
18	170.00	2.64	8.99
19	180.00	2.78	9.52
20	190.00	3.29	10.29
21	200.00	3.37	9.81
22	210.00	4.12	10.53
23	220.00	3.66	10.68
24	230.00	3.45	10.17
25	240.00	2.62	7.37
26	250.00	2.72	6.19
27	260.00	2.27	3.76
28	270.00	3.47	4.95

29	280.00	2.91	6.52
30	290.00	3.08	8.41
31	300.00	2.94	9.67
32	310.00	3.56	11.08
33	320.00	2.62	10.68
34	330.00	3.14	10.34
35	340.00	2.63	8.22
36	350.00	3.29	8.24



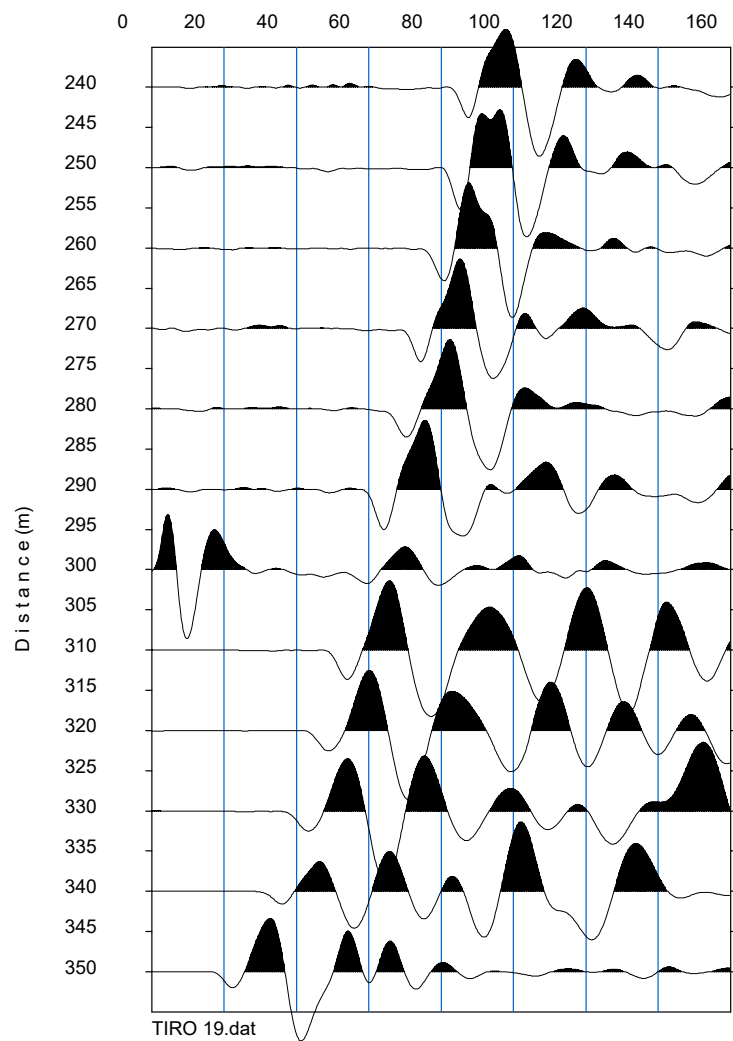


bs210-8910.vs

Scale = 1 / 2000

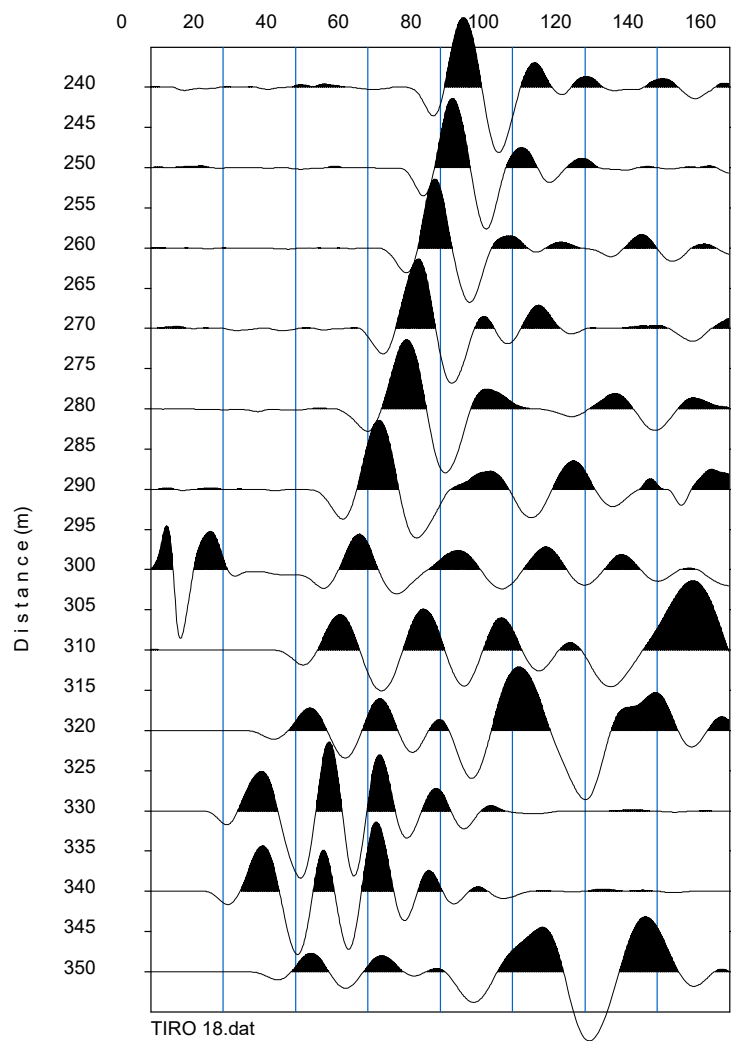
Source=355.0m

Time (msec)



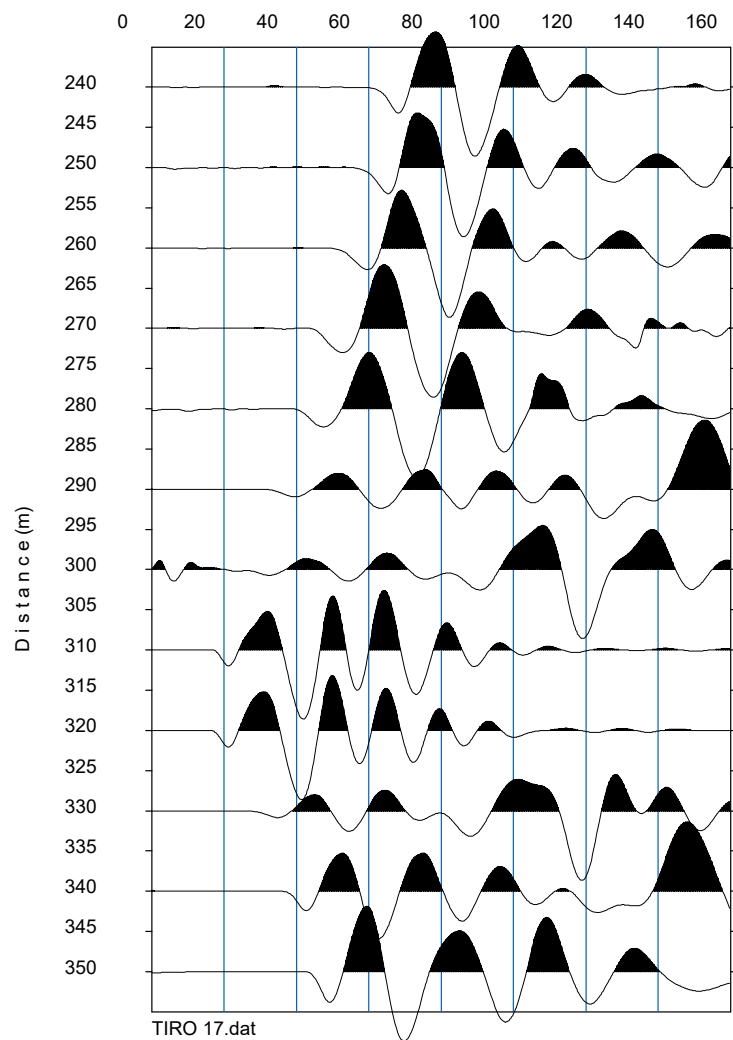
Source=335.0m

Time (msec)



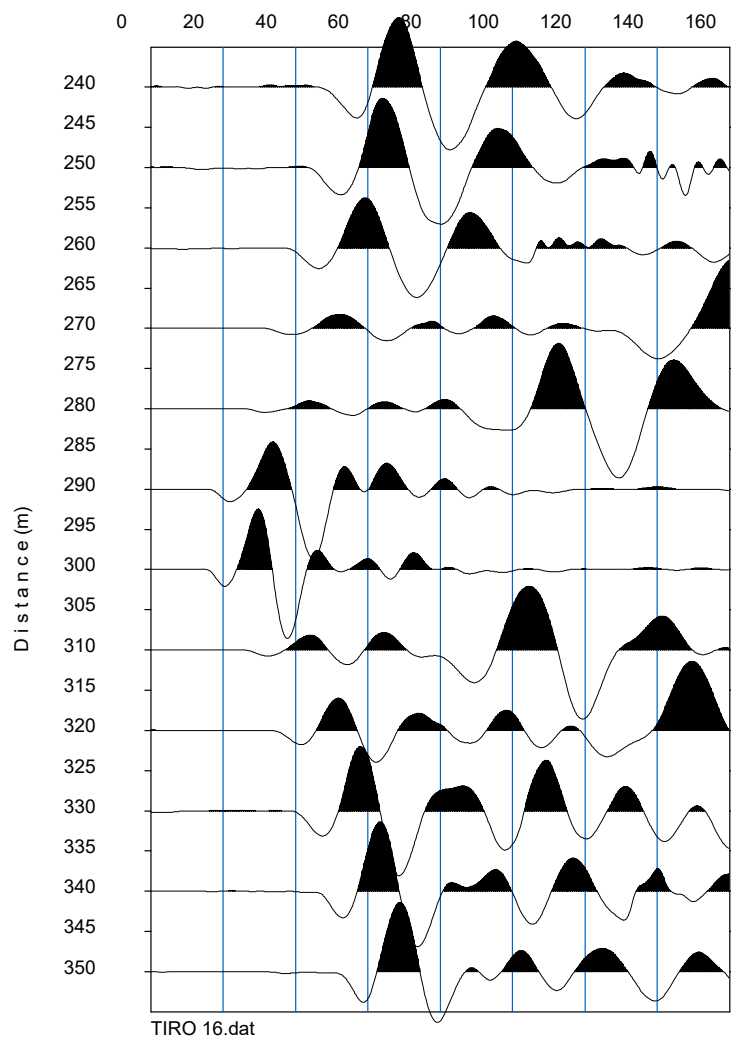
Source=315.0m

Time (msec)



Source=295.0m

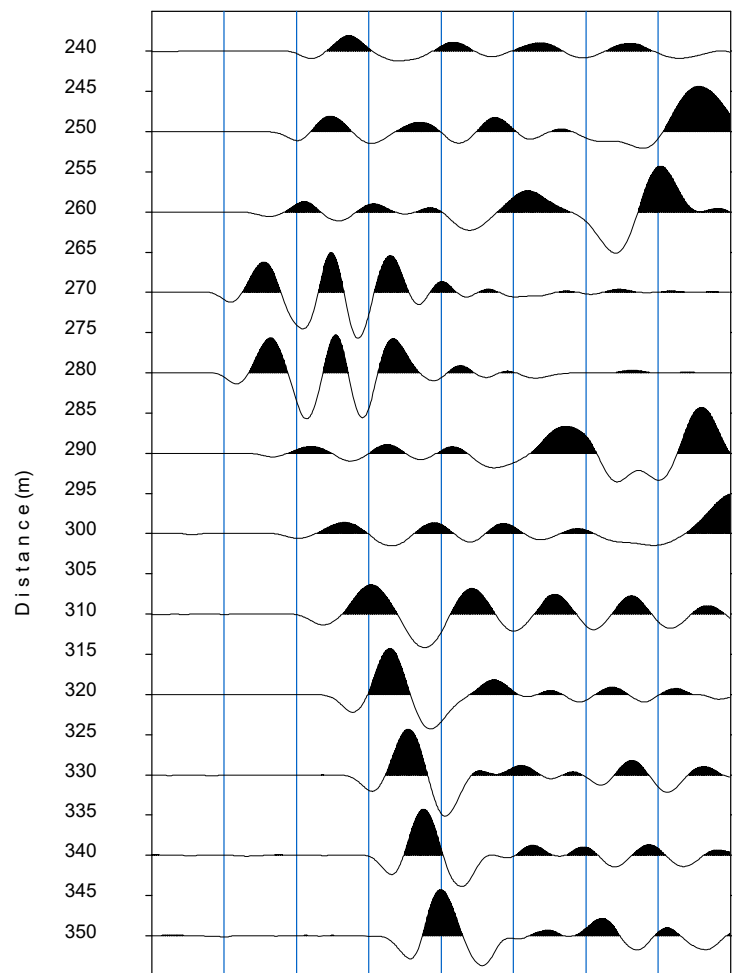
Time (msec)



Source=275.0m

Time (msec)

0 20 40 60 80 100 120 140 160

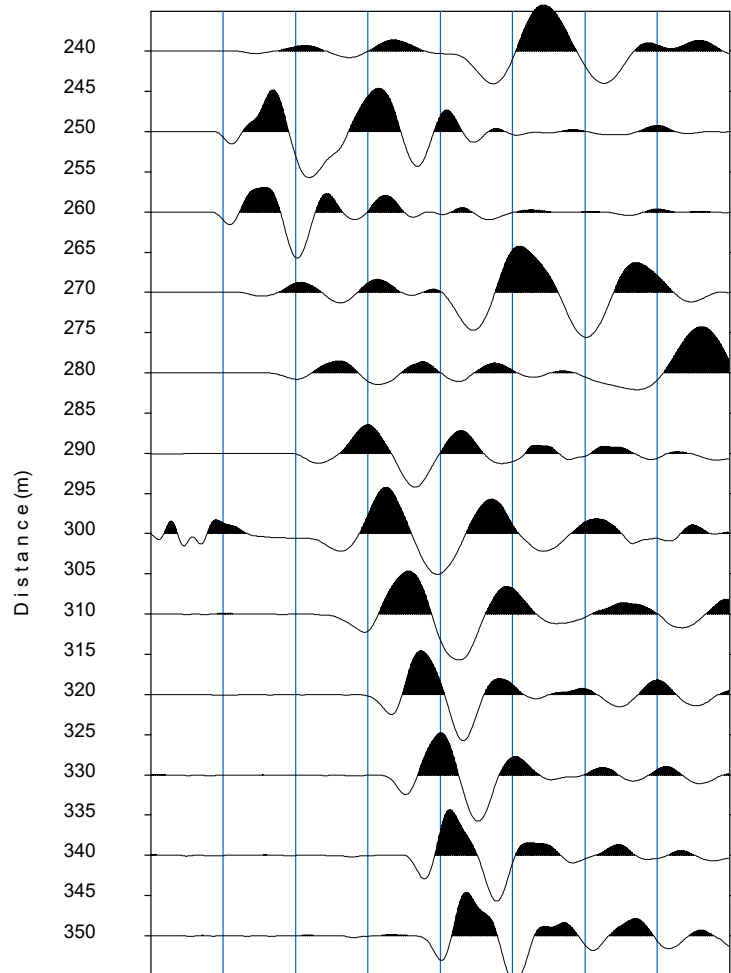


TIRO 15.dat

Source=255.0m

Time (msec)

0 20 40 60 80 100 120 140 160

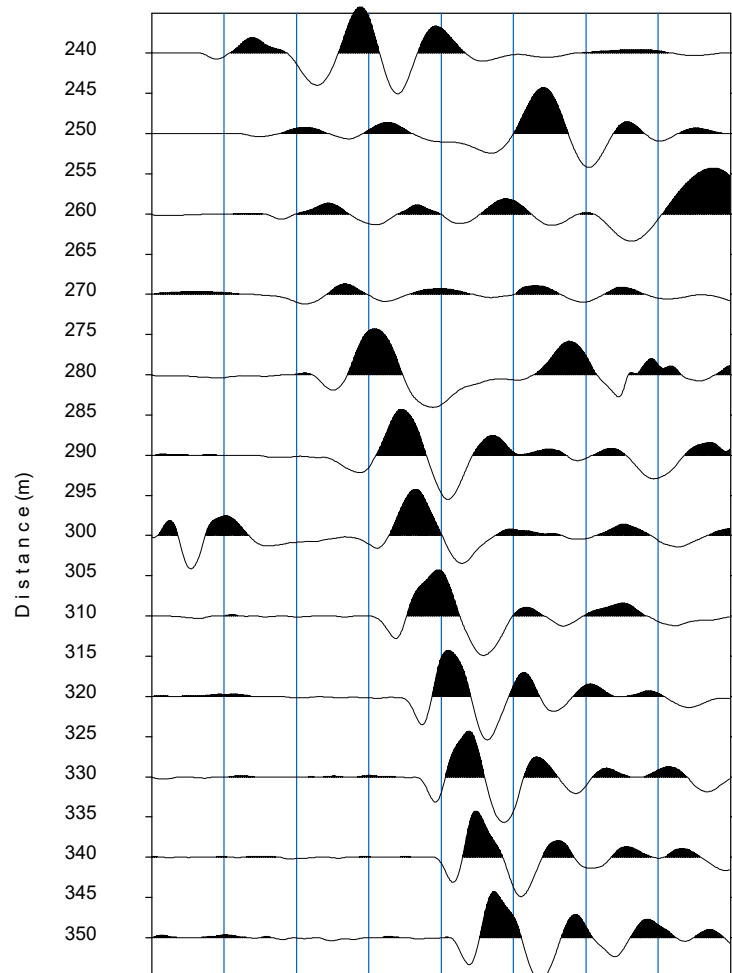


TIRO 14.dat

Source=235.0m

Time (msec)

0 20 40 60 80 100 120 140 160

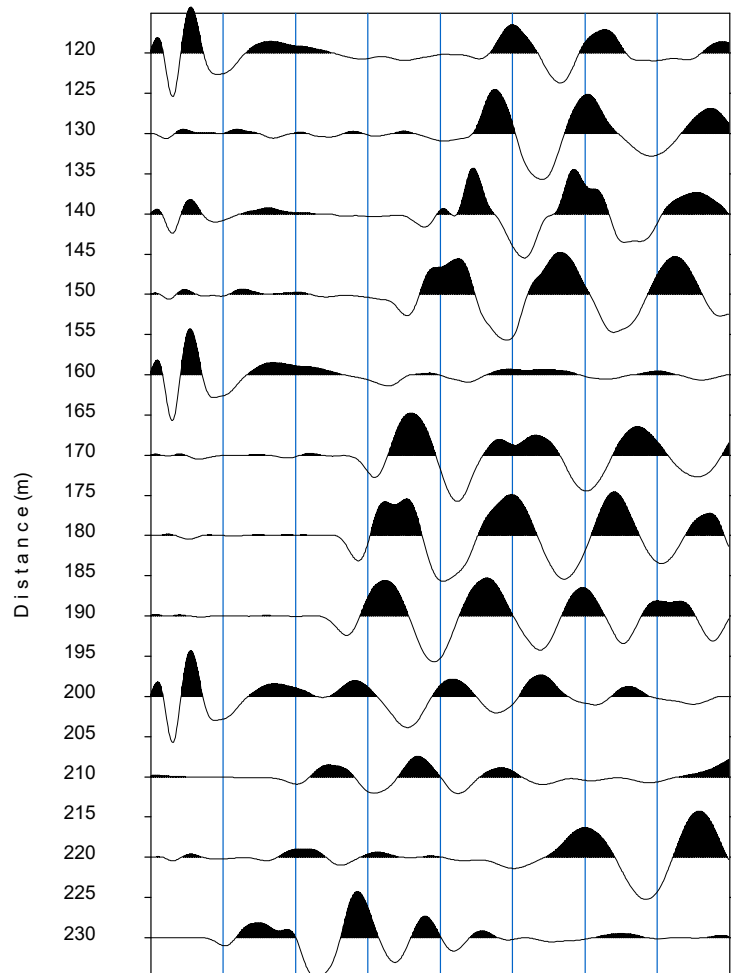


TIRO 13 BIS.dat

Source=235.0m

Time (msec)

0 20 40 60 80 100 120 140 160

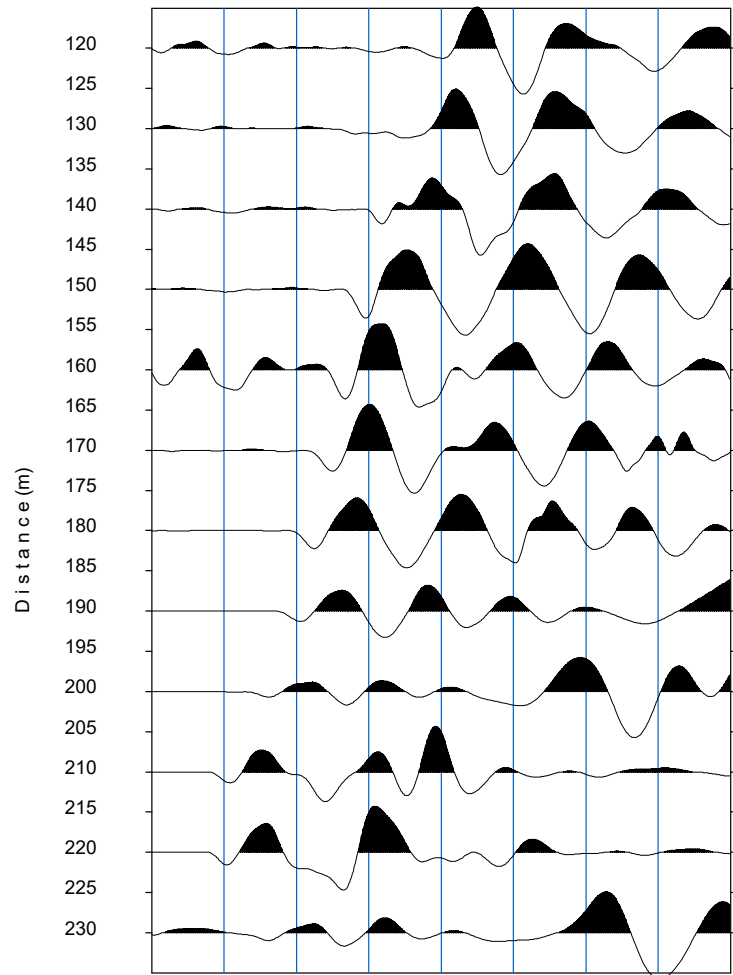


TIRO 13.dat

Source=215.0m

Time (msec)

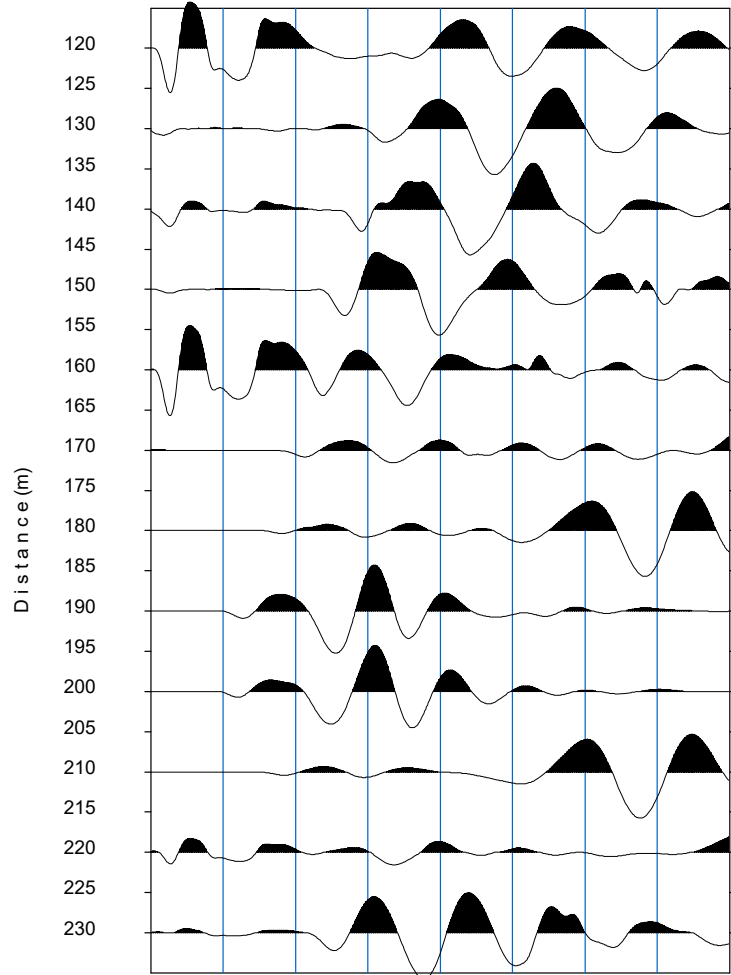
0 20 40 60 80 100 120 140 160



Source=195.0m

Time (msec)

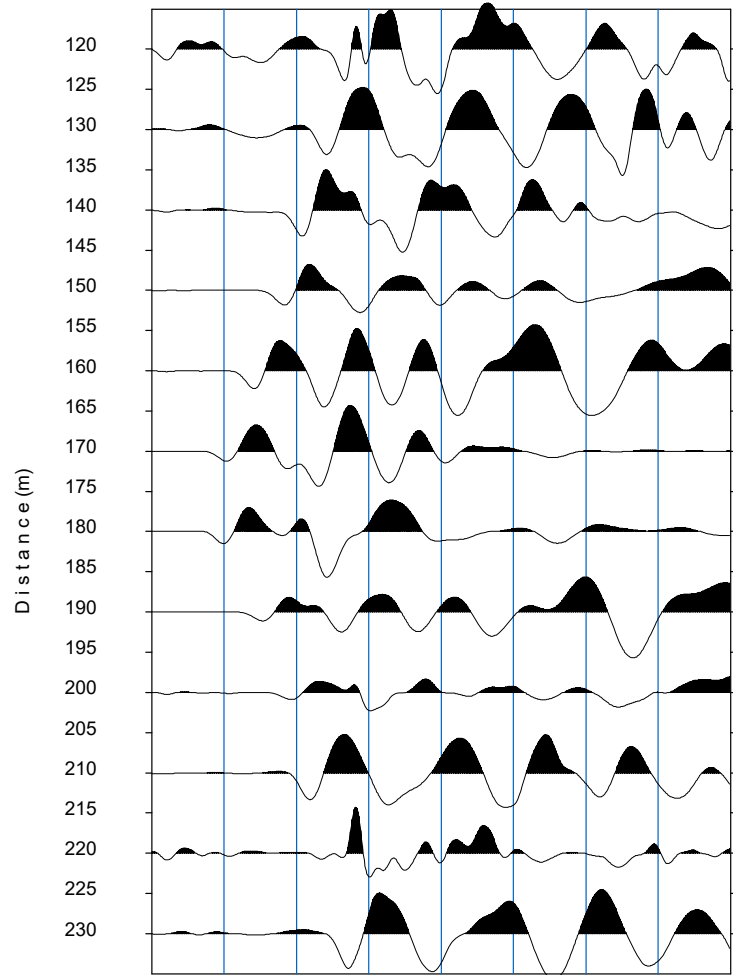
0 20 40 60 80 100 120 140 160



Source=175.0m

Time (msec)

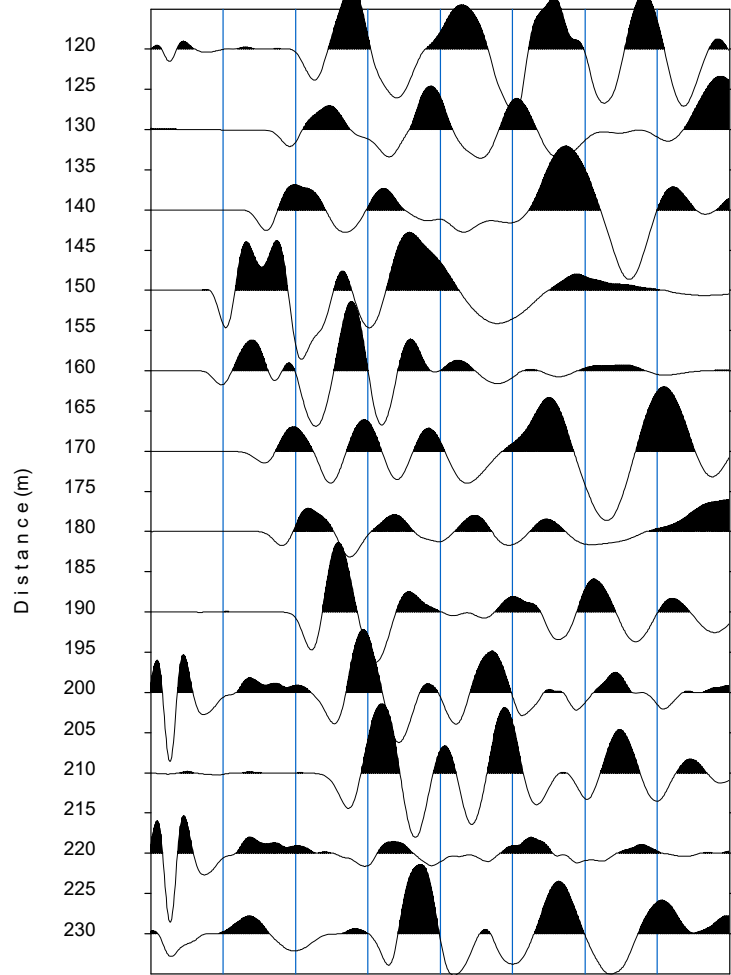
0 20 40 60 80 100 120 140 160



Source=155.0m

Time (msec)

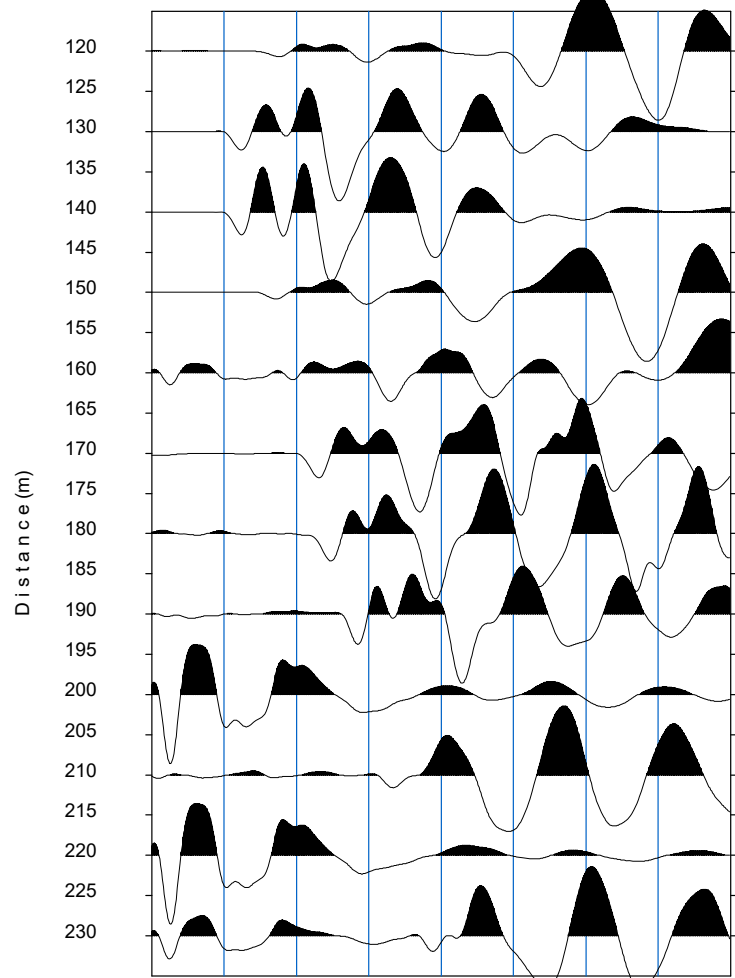
0 20 40 60 80 100 120 140 160



Source=135.0m

Time (msec)

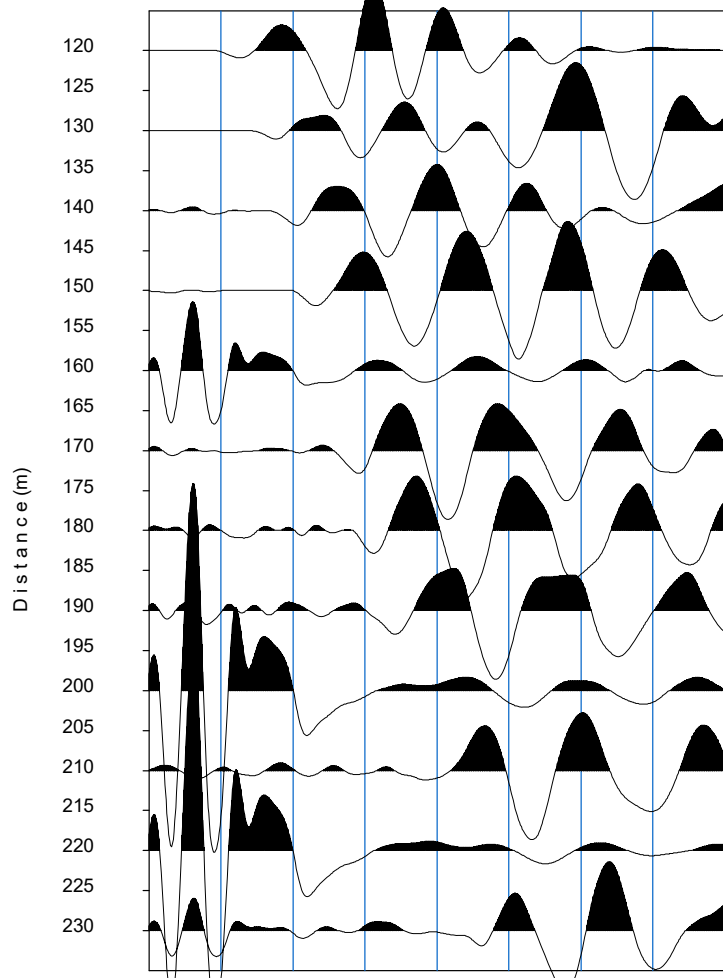
0 20 40 60 80 100 120 140 160



Source=115.0m

Time (msec)

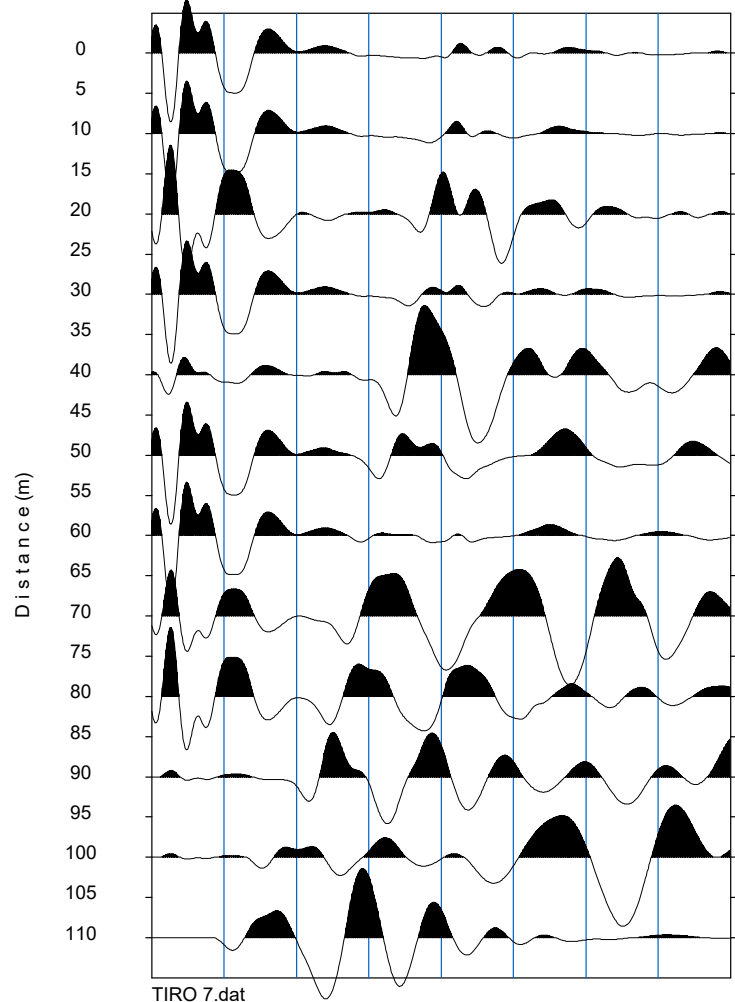
0 20 40 60 80 100 120 140 160



Source=115.0m

Time (msec)

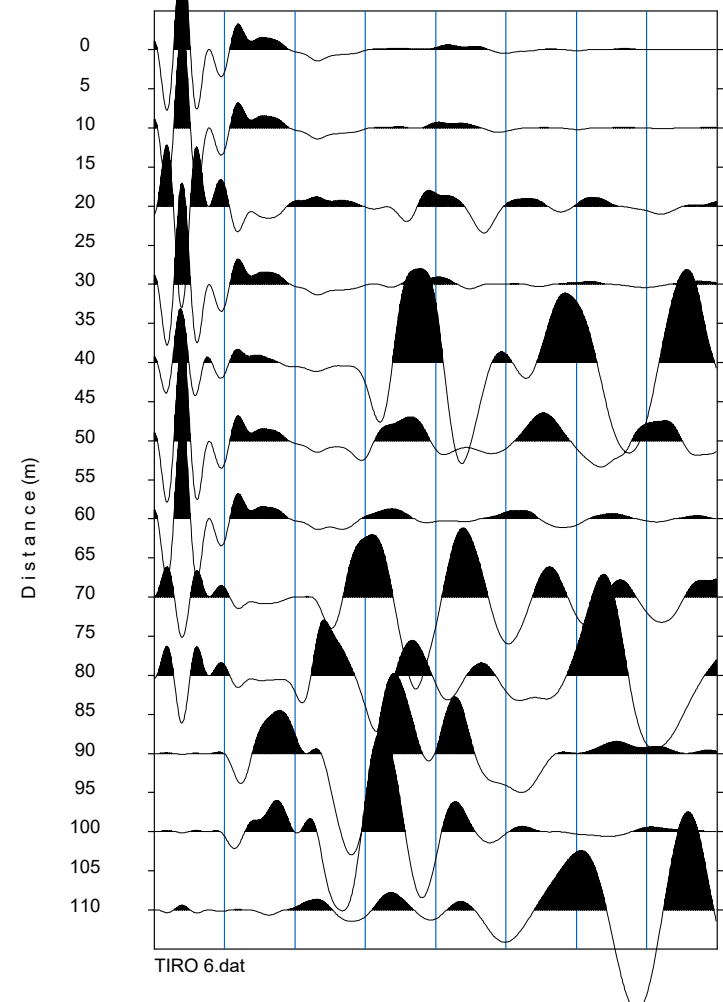
0 20 40 60 80 100 120 140 160



Source= 95.0m

Time (msec)

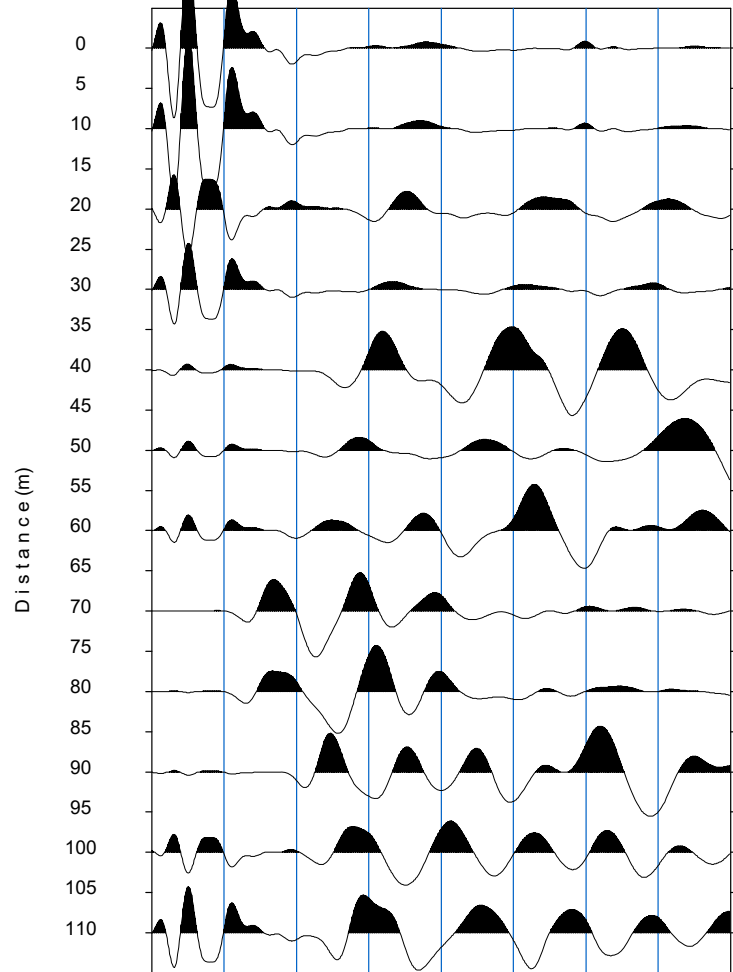
0 20 40 60 80 100 120 140 160



Source= 75.0m

Time (msec)

0 40 60 80 100 120 140 160

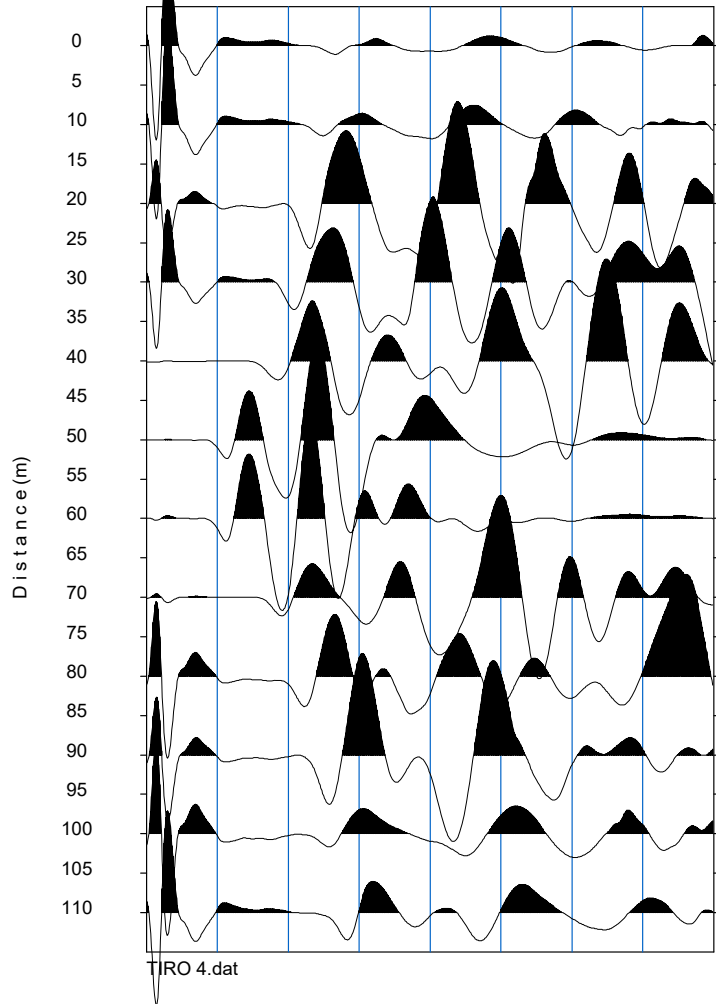


TIRO 5.dat

Source= 55.0m

Time (msec)

0 20 40 60 80 100 120 140 160

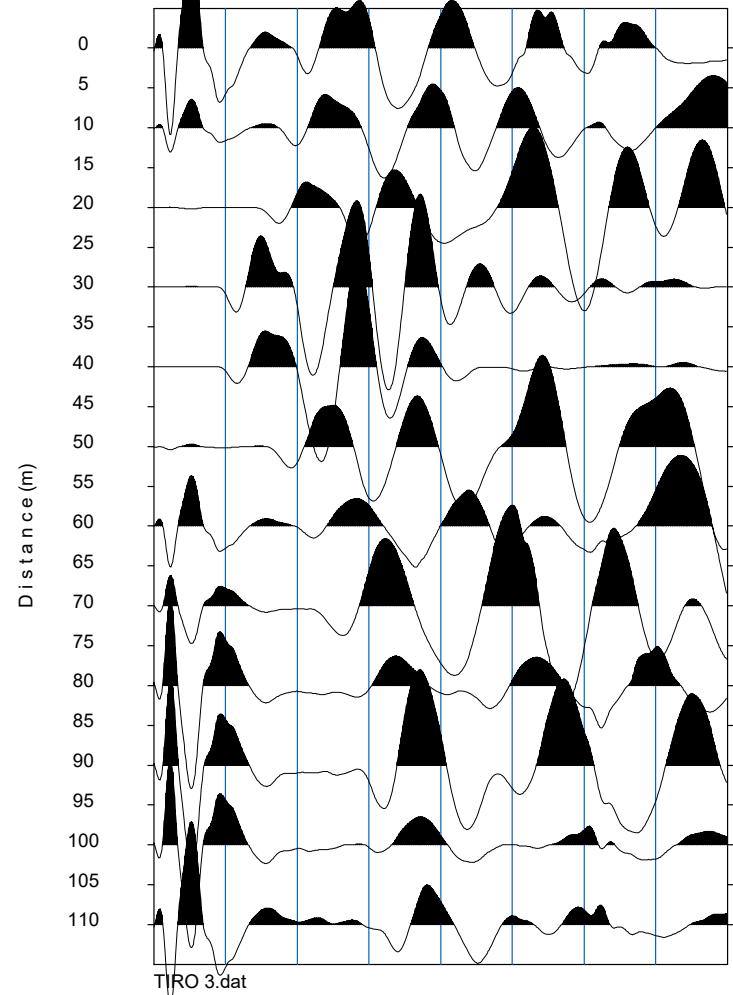


TIRO 4.dat

Source= 35.0m

Time (msec)

0 40 60 80 100 120 140 160

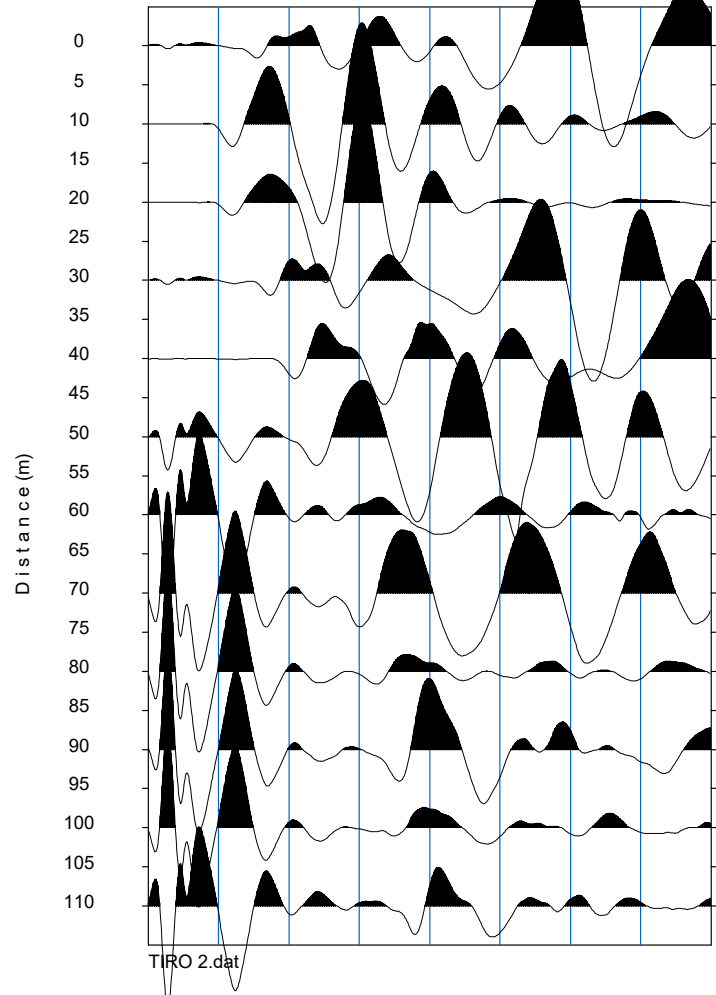


TIRO 3.dat

Source= 15.0m

Time (msec)

0 20 40 60 80 100 120 140 160



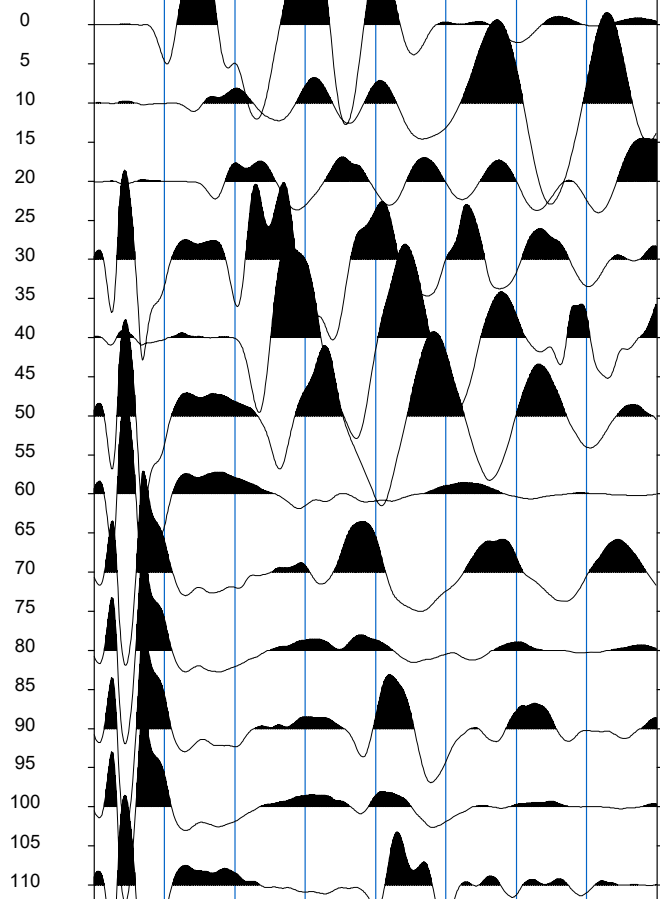
TIRO 2.dat

Source= -5.0m

Time (msec)

0 20 40 60 80 100 120 140 160

Distance (m)



TIRO 1.dat

BASE SISMICA 21 11-12-13



LINEA 11



LINEA 12





LINEA 13



INPUT DATA BS 21 11-12-13

The spread contains 19 shotpoints and 36 geophones

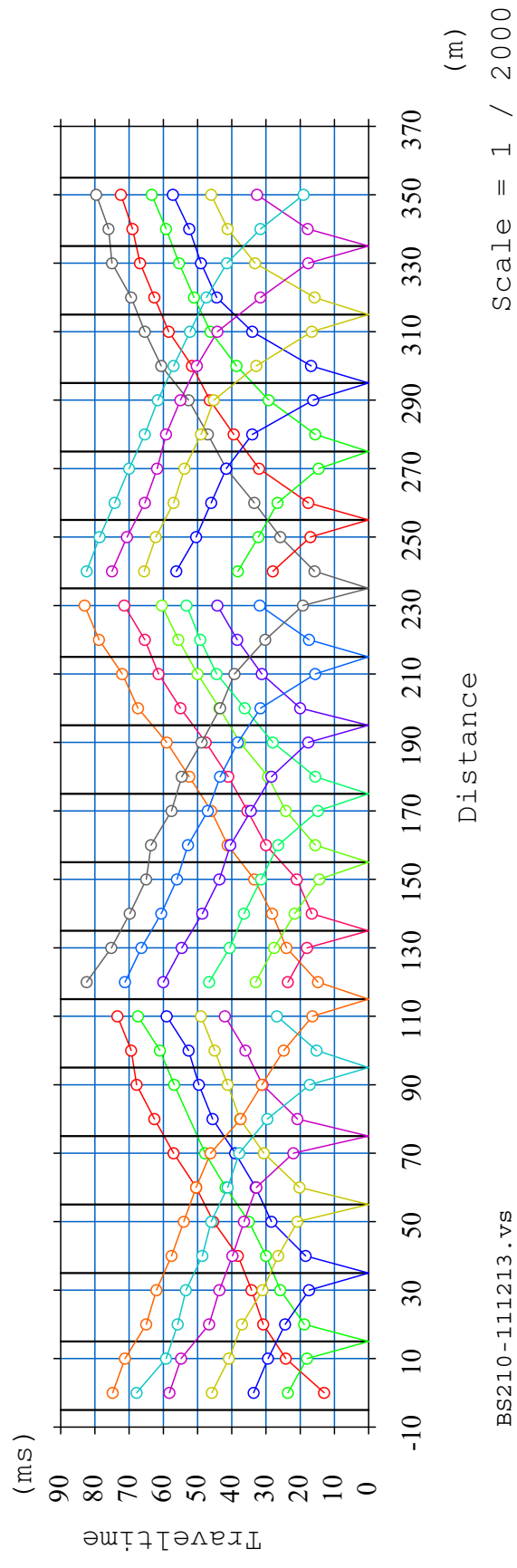
SP	Elev	X-loc	Y-Loc	Depth
1	0.26	-5.00	0.00	0.00
2	0.35	15.00	0.00	0.00
3	0.41	35.00	0.00	0.00
4	0.60	55.00	0.00	0.00
5	1.43	75.00	0.00	0.00
6	2.50	95.00	0.00	0.00
7	5.15	115.00	0.00	0.00
8	8.00	135.00	0.00	0.00
9	10.55	155.00	0.00	0.00
10	13.35	175.00	0.00	0.00
11	16.40	195.00	0.00	0.00
12	19.10	215.00	0.00	0.00
13	23.15	235.00	0.00	0.00
14	26.00	255.00	0.00	0.00
15	28.80	275.00	0.00	0.00
16	31.15	295.00	0.00	0.00
17	34.00	315.00	0.00	0.00
18	36.65	335.00	0.00	0.00
19	39.45	355.00	0.00	0.00

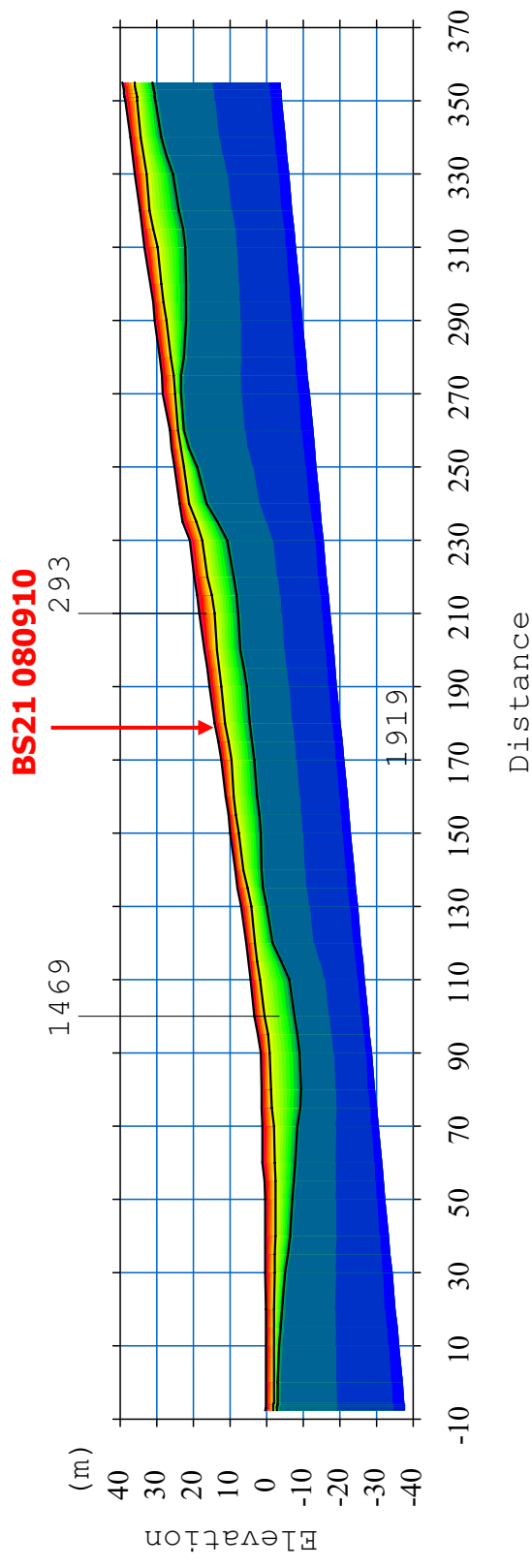
Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7	SP 8	SP 9	SP 10	SP 11	SP 12	SP 13	SP 14	SP 15	SP 16	SP 17	SP 18	SP 19
1	0.22	0.00	0.00	13.02	23.74	33.63	45.93	58.28	67.91	74.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.32	10.00	0.00	24.40	18.08	29.49	40.80	54.88	59.33	71.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.39	20.00	0.00	30.99	18.87	24.47	37.02	46.69	55.85	65.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.41	30.00	0.00	34.30	25.99	17.53	31.04	43.68	53.60	62.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.41	40.00	0.00	38.35	30.11	18.41	26.59	39.95	48.64	57.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.43	50.00	0.00	45.55	35.17	28.52	20.94	36.59	46.18	54.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	1.32	60.00	0.00	50.58	41.89	33.04	20.36	32.82	41.32	50.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OUTPUT DATA BS 21 11-12-13

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.29	3.34
2	15.00	2.40	4.18
3	35.00	2.80	6.28
4	55.00	3.06	8.03
5	75.00	3.02	10.70
6	95.00	2.95	10.94
7	115.00	2.48	9.25
8	135.00	2.74	6.93
9	155.00	2.14	8.52
10	175.00	2.80	9.19
11	195.00	3.28	10.04
12	215.00	3.99	10.70
13	235.00	3.78	9.62
14	255.00	2.54	4.72
15	275.00	3.33	5.38
16	295.00	2.94	9.08
17	315.00	2.96	11.10
18	335.00	2.95	9.23
19	355.00	3.29	8.24
Geo			
1	0.00	2.29	3.34
2	10.00	2.34	3.77
3	20.00	2.59	4.75
4	30.00	2.76	5.49
5	40.00	2.82	7.01
6	50.00	2.91	7.53
7	60.00	3.65	9.21
8	70.00	3.42	9.98
9	80.00	2.79	10.98
10	90.00	2.75	10.87
11	100.00	2.83	11.10
12	110.00	2.67	10.79
13	120.00	2.30	7.44
14	130.00	2.86	7.05
15	140.00	2.09	7.24
16	150.00	2.26	8.40
17	160.00	2.18	8.53
18	170.00	2.64	8.99
19	180.00	2.78	9.52
20	190.00	3.29	10.29
21	200.00	3.37	9.81
22	210.00	4.12	10.53
23	220.00	3.66	10.68
24	230.00	3.45	10.17
25	240.00	2.62	7.37
26	250.00	2.72	6.19
27	260.00	2.27	3.76
28	270.00	3.47	4.95
29	280.00	2.91	6.52

30	290.00	3.08	8.41
31	300.00	2.94	9.67
32	310.00	3.56	11.08
33	320.00	2.62	10.68
34	330.00	3.14	10.34
35	340.00	2.63	8.22
36	350.00	3.29	8.24



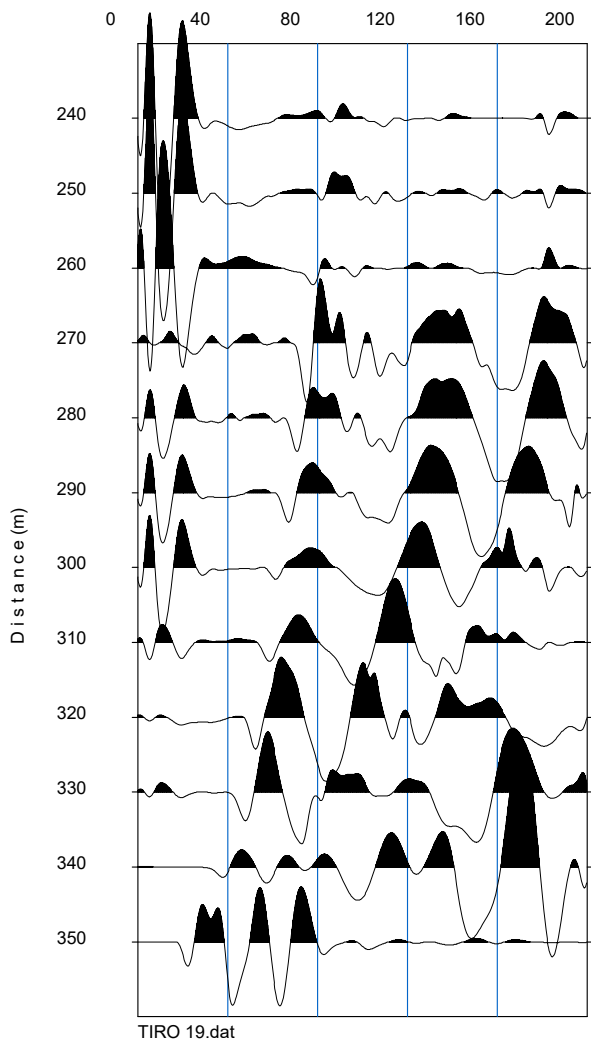


BS210-111213.vs

Scale = 1 / 2000

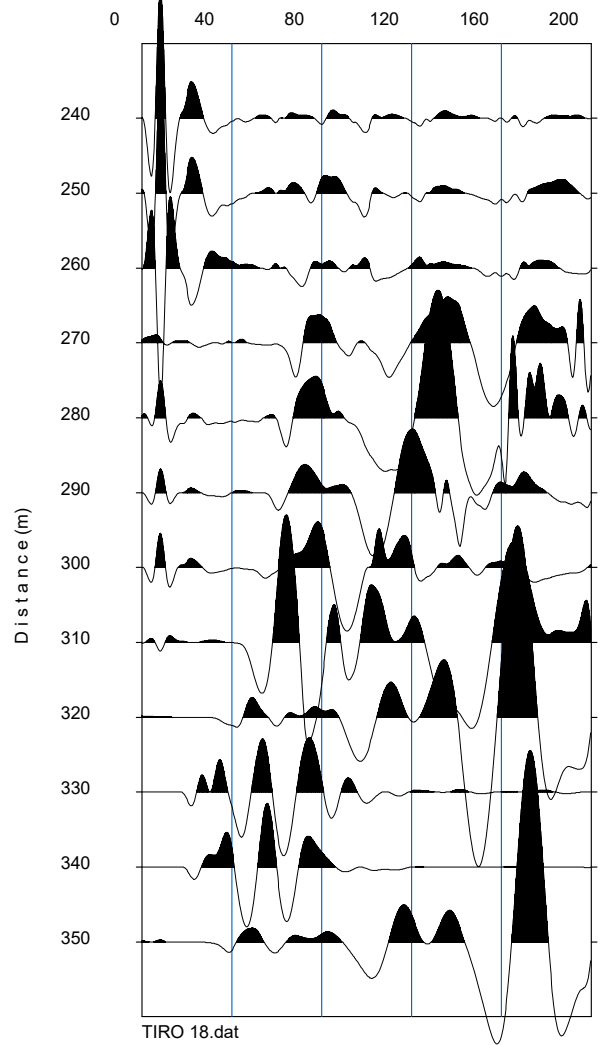
Source=355.0m

Time (msec)



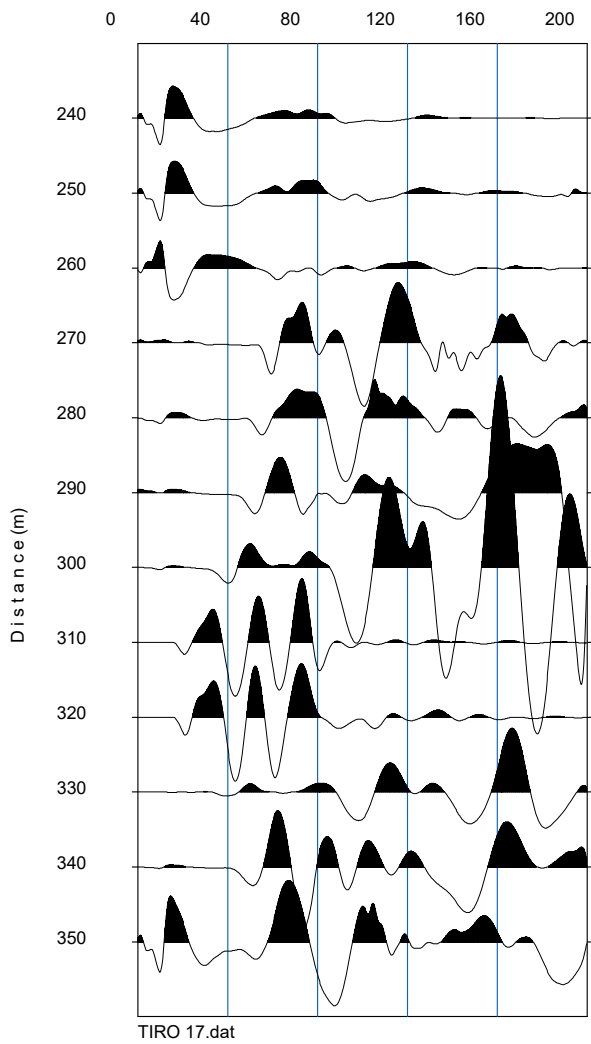
Source=335.0m

Time (msec)



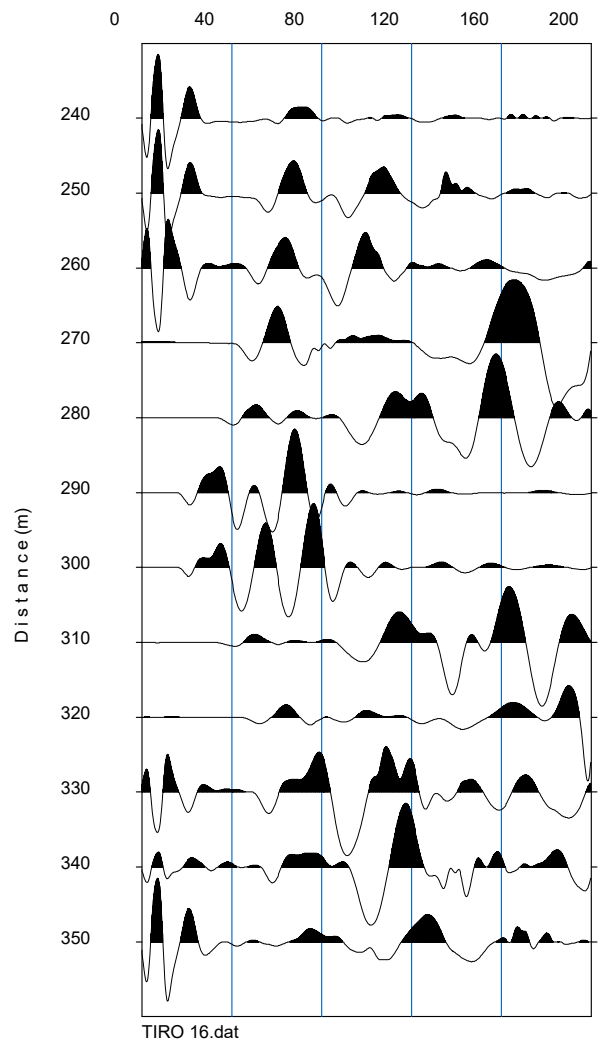
Source=315.0m

Time (msec)



Source=295.0m

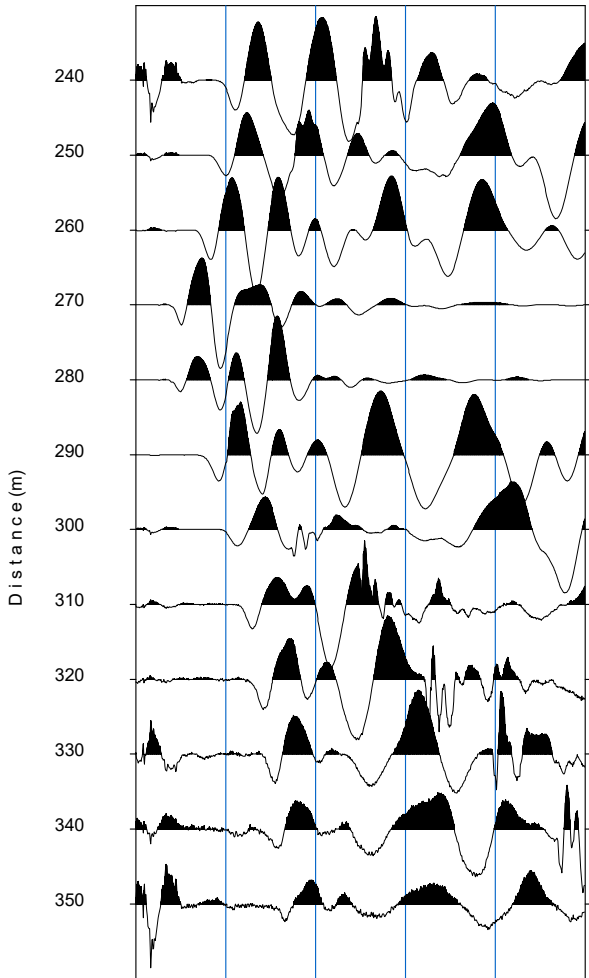
Time (msec)



Source=275.0m

Time (msec)

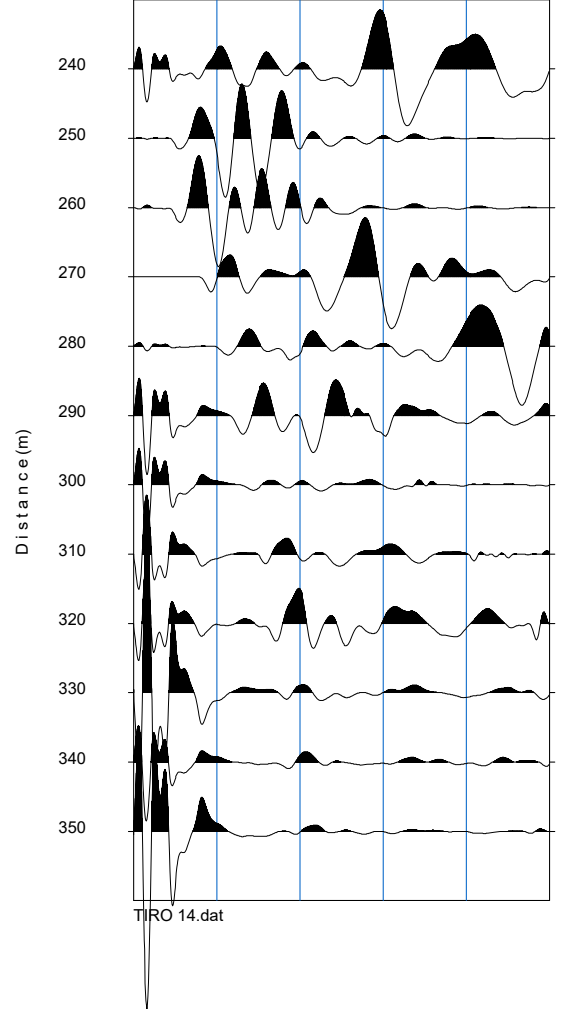
0 40 80 120 160 200



Source=255.0m

Time (msec)

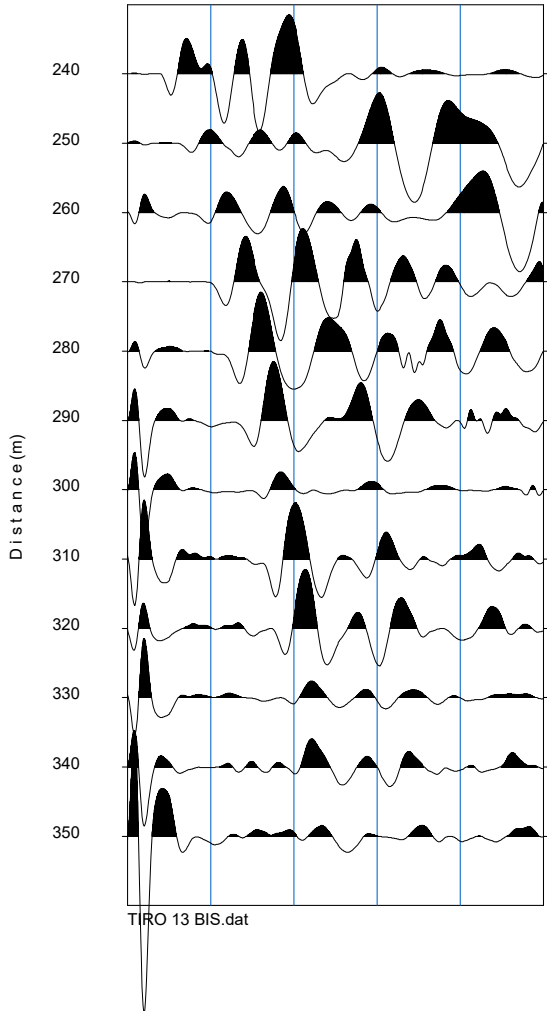
0 40 80 120 160 200



Source=235.0m

Time (msec)

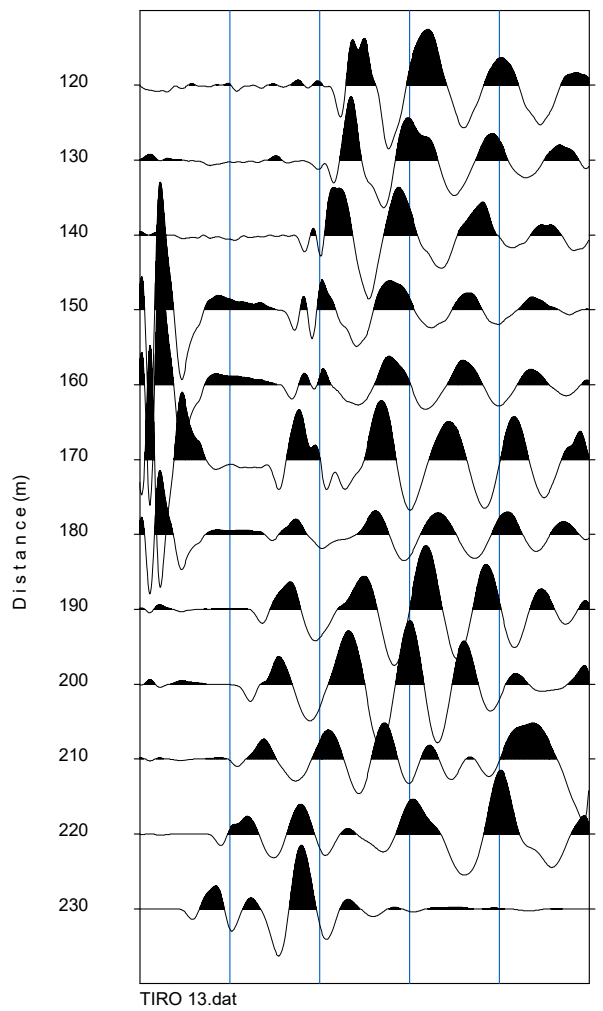
0 40 80 120 160 200



Source=235.0m

Time (msec)

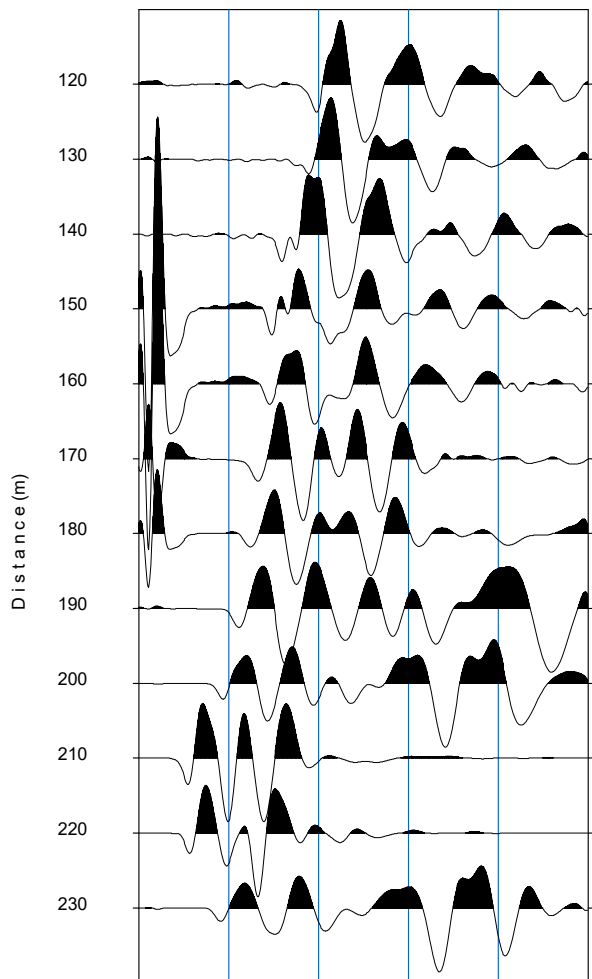
0 40 80 120 160 200



Source=215.0m

Time (msec)

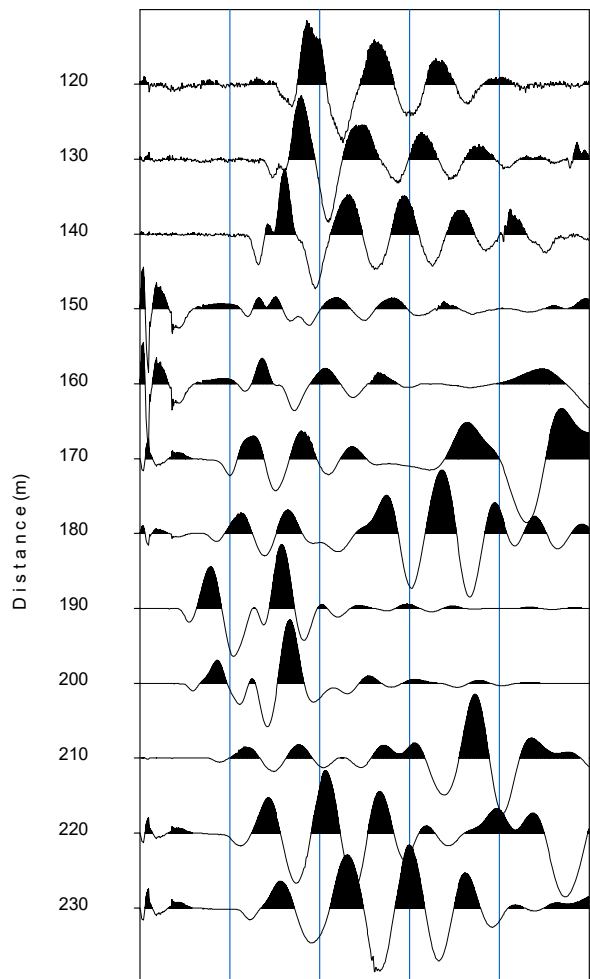
0 40 80 120 160 200



Source=195.0m

Time (msec)

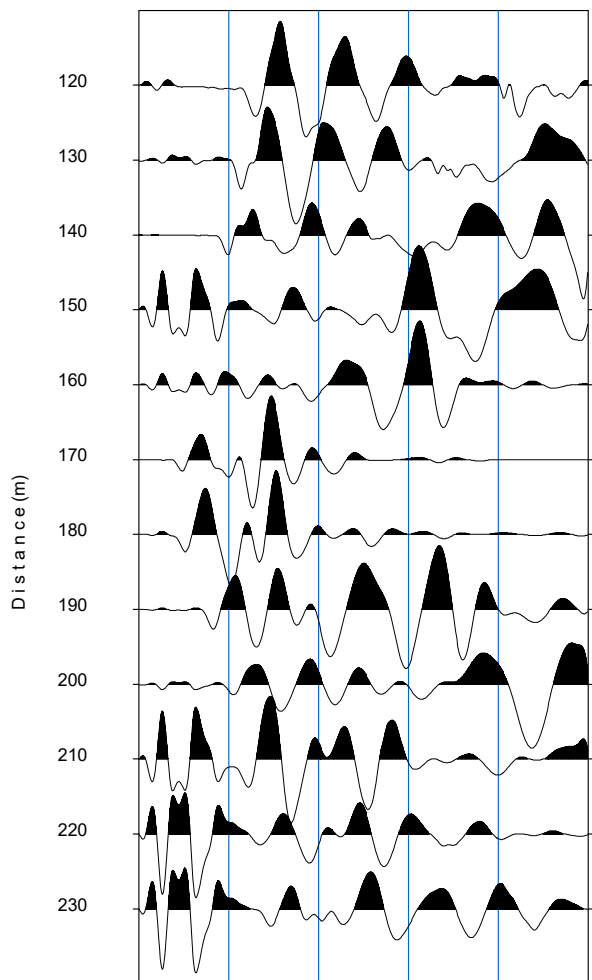
0 40 80 120 160 200



Source=175.0m

Time (msec)

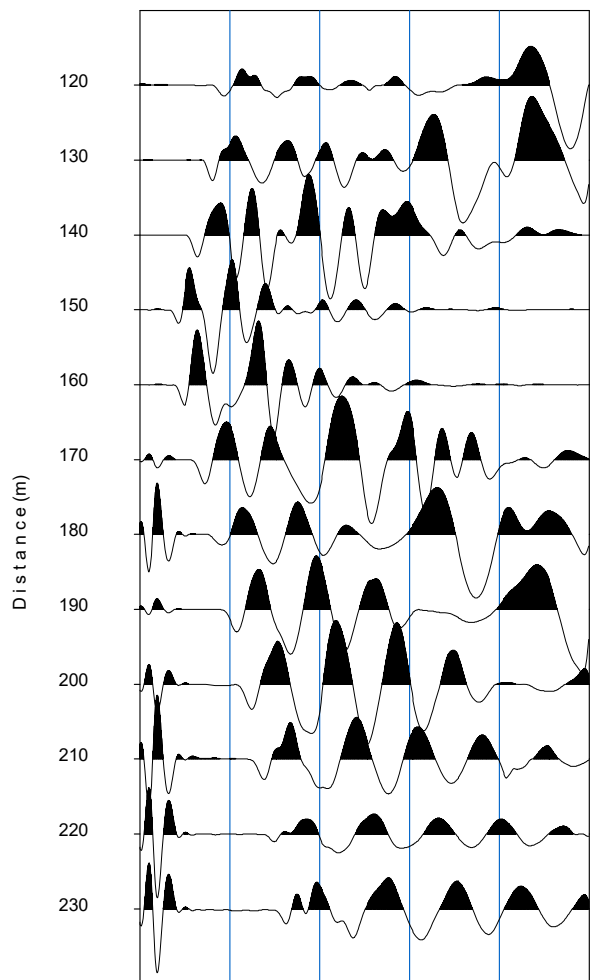
0 40 80 120 160 200



Source=155.0m

Time (msec)

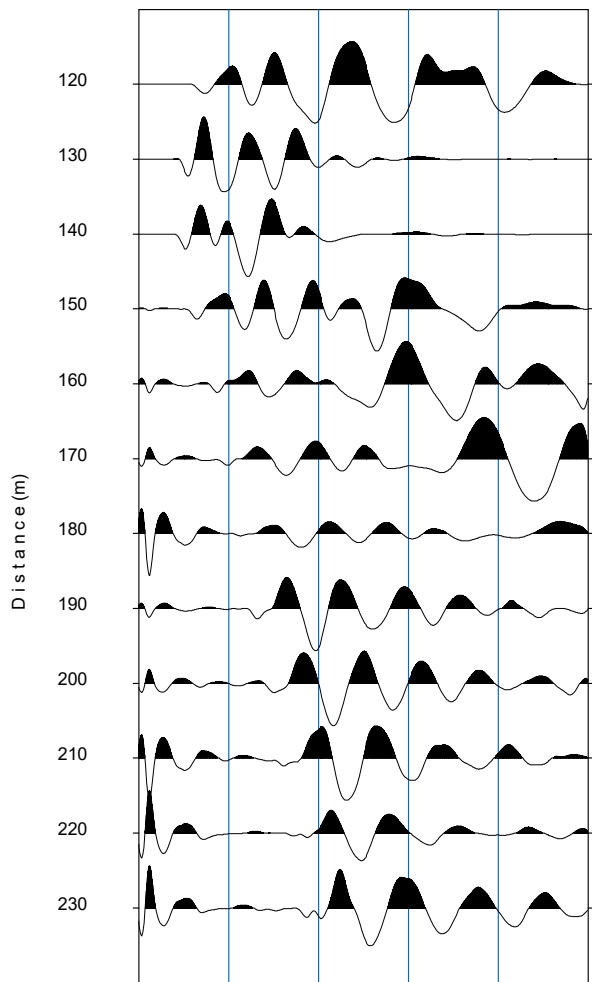
0 40 80 120 160 200



Source=135.0m

Time (msec)

0 40 80 120 160 200

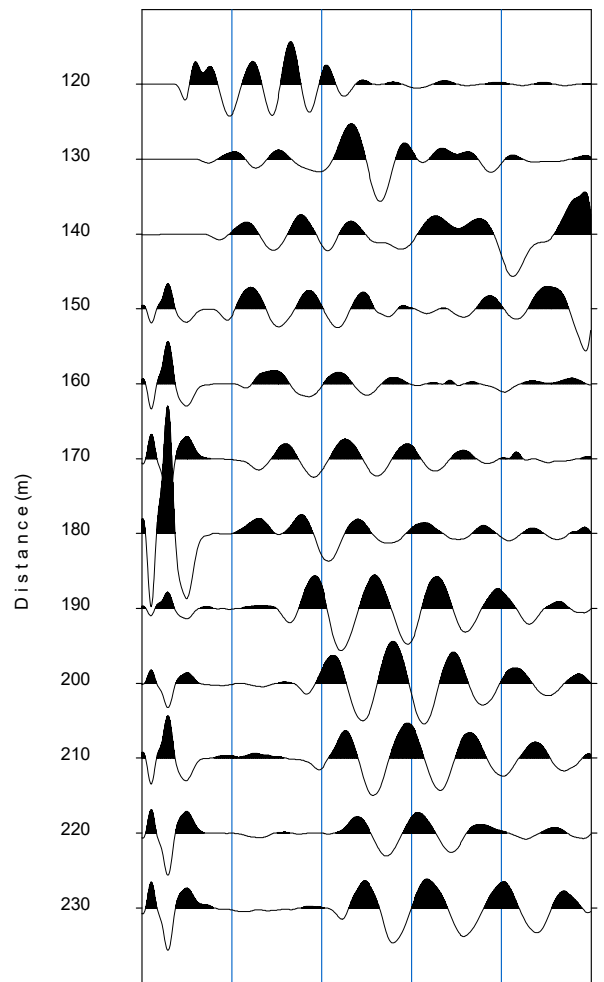


TIRO 8.dat

Source=115.0m

Time (msec)

0 40 80 120 160 200

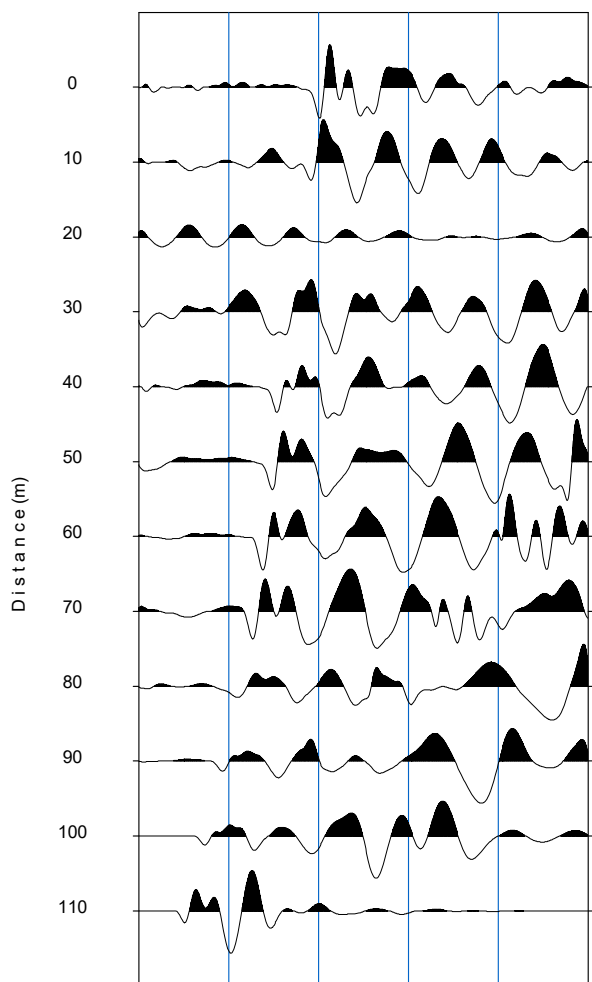


TIRO 7 BIS.dat

Source=115.0m

Time (msec)

0 40 80 120 160 200

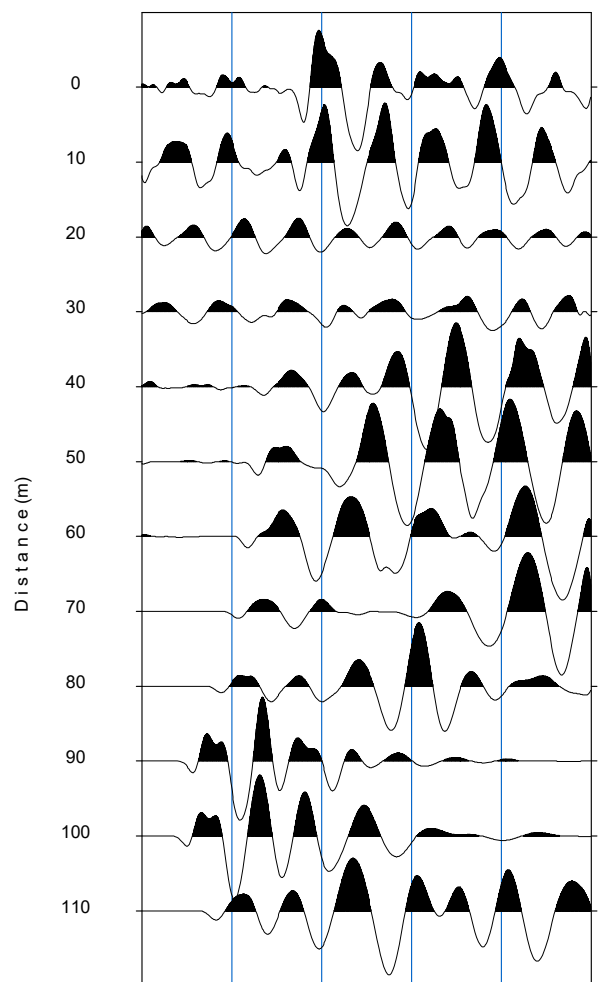


TIRO 7.dat

Source= 95.0m

Time (msec)

0 40 80 120 160 200

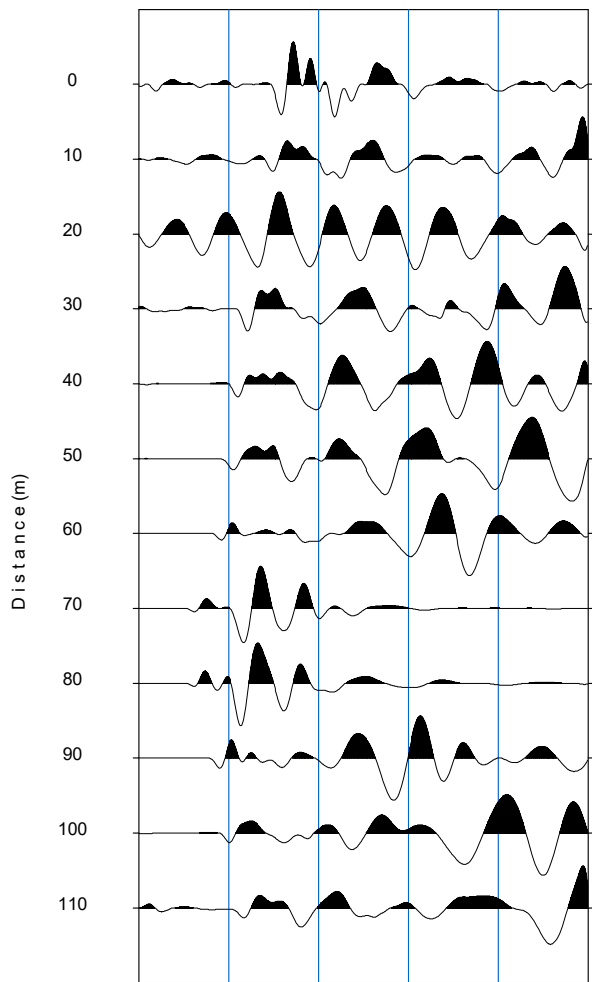


TIRO 6.dat

Source= 75.0m

Time (msec)

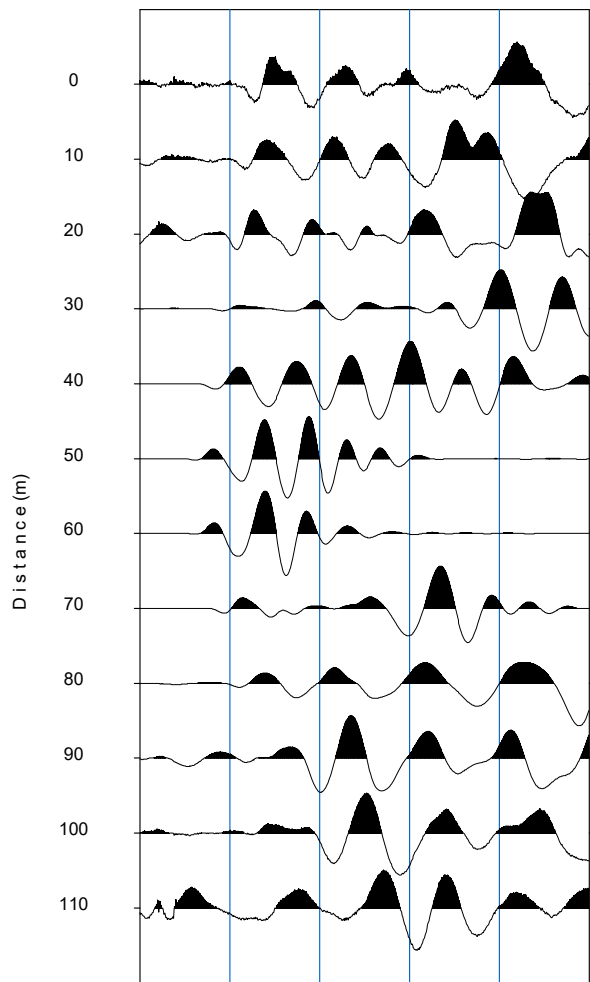
0 40 80 120 160 200



Source= 55.0m

Time (msec)

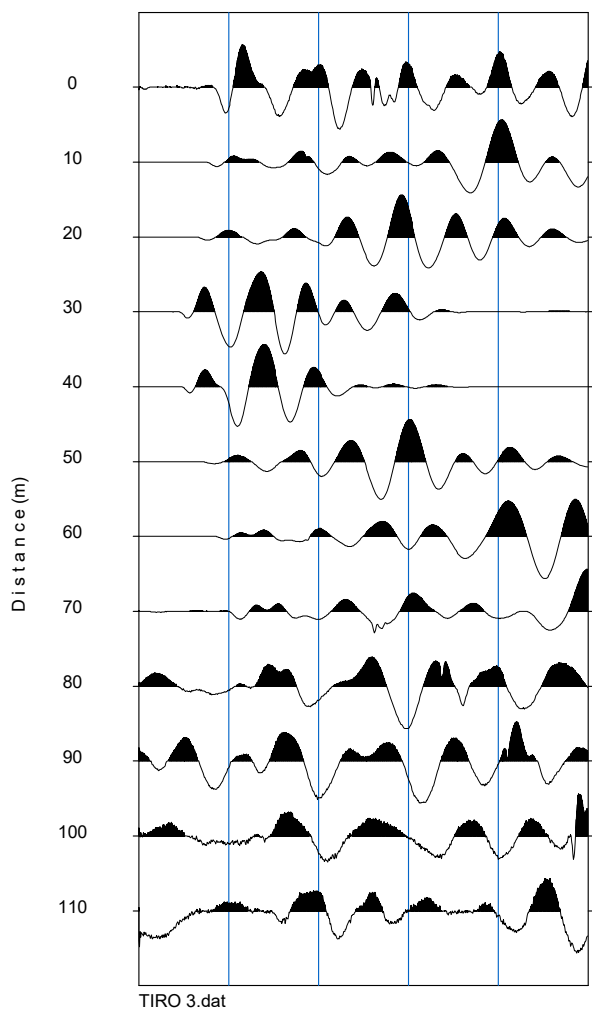
0 40 80 120 160 200



Source= 35.0m

Time (msec)

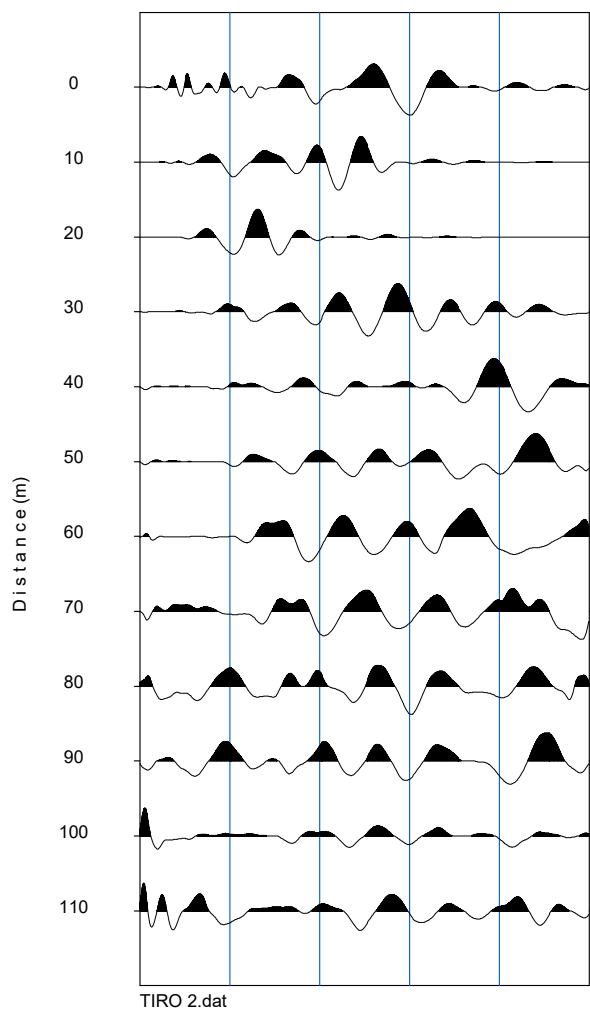
0 40 80 120 160 200



Source= 15.0m

Time (msec)

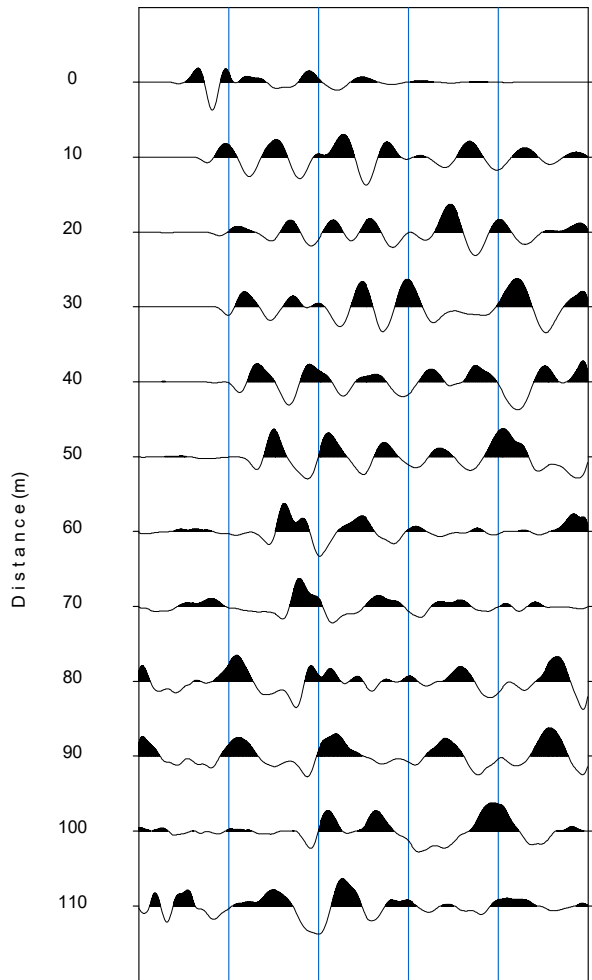
0 40 80 120 160 200



Source= -5.0m

Time (msec)

0 40 80 120 160 200



TIRO 1.dat

BASE SISMICA 2114



INPUT DATA BS 2114

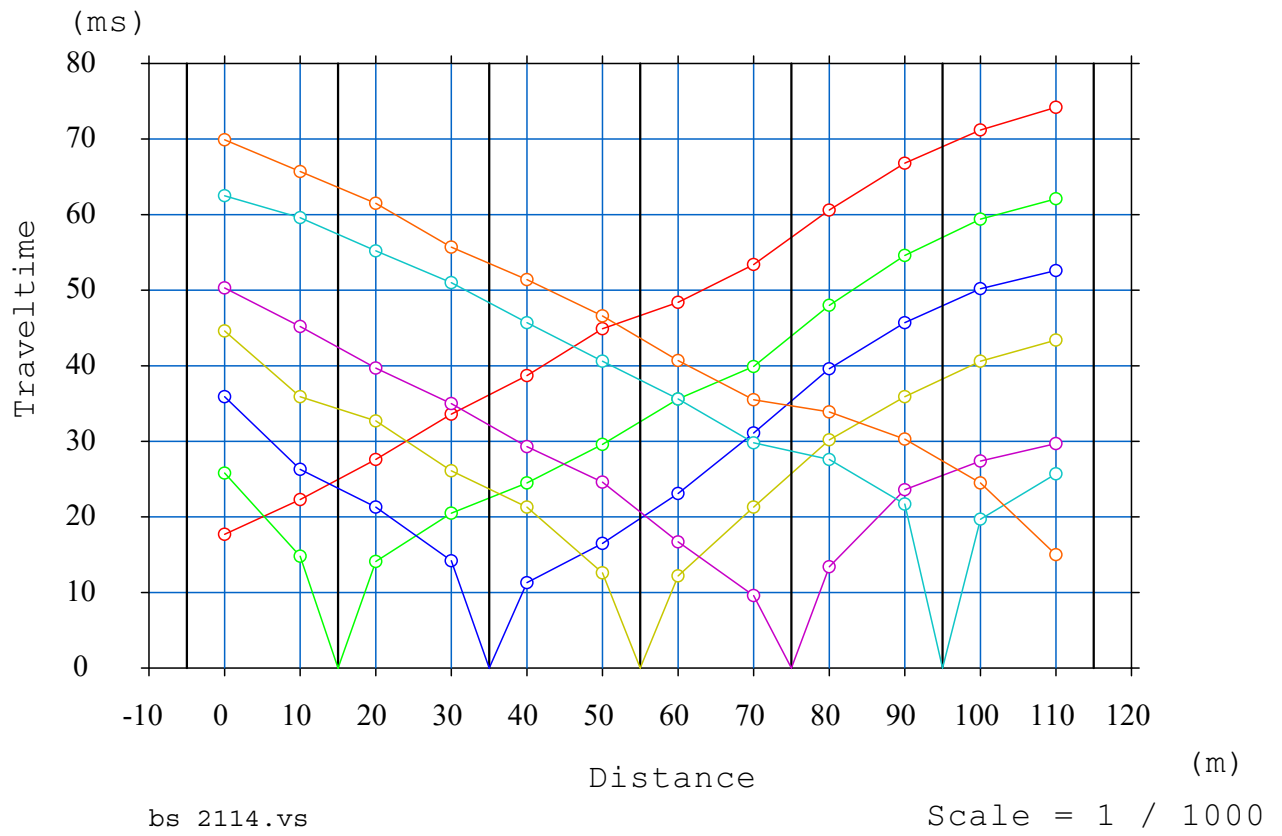
The spread contains 7 shotpoints and 12 geophones

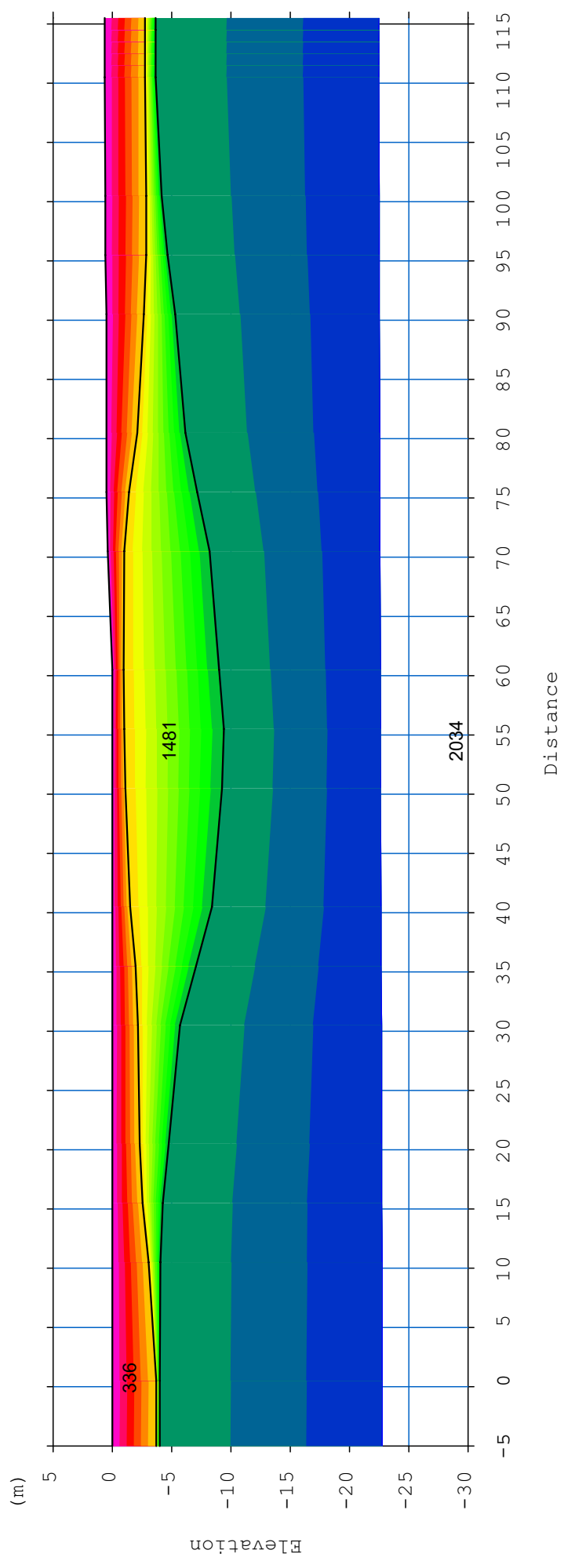
SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	0.00	15.00	0	0
3	0.00	35.00	0	0
4	0.00	55.00	0	0
5	0.50	75.00	0	0
6	0.60	95.00	0	0
7	0.70	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.00	0.00	0	17.77 1	25.89 1	36.00 1	44.67 1	50.33 1	62.53 1	70.00 1
2	0.00	10.00	0	22.30 1	14.84 1	26.40 1	36.00 1	45.26 1	59.70 1	65.75 1
3	0.00	20.00	0	27.70 1	14.20 1	21.34 1	32.80 1	39.73 1	55.28 1	61.54 1
4	0.00	30.00	0	33.65 1	20.57 1	14.27 1	26.13 1	35.01 1	51.02 1	55.73 1
5	0.00	40.00	0	38.76 1	24.56 1	11.39 1	21.33 1	29.35 1	45.73 1	51.47 1
6	0.00	50.00	0	44.93 1	29.69 1	16.60 1	12.67 1	24.64 1	40.65 1	46.67 1
7	0.00	60.00	0	48.43 1	35.69 1	23.18 1	12.27 1	16.74 1	35.65 1	40.80 1
8	0.40	70.00	0	53.48 1	39.99 1	31.11 1	21.32 1	9.62 1	29.85 1	35.60 1
9	0.50	80.00	0	60.66 1	48.08 1	39.67 1	30.29 1	13.47 1	27.67 1	34.00 1
10	0.50	90.00	0	66.88 1	54.67 1	45.79 1	35.98 1	23.67 1	21.78 1	30.40 1
11	0.60	100.00	0	71.23 1	59.46 1	50.21 1	40.66 1	27.43 1	19.71 1	24.53 1
12	0.70	110.00	0	74.21 1	62.19 1	52.67 1	43.47 1	29.73 1	25.78 1	15.07 1

OUTPUT DATA BS 2114

SP	X-loc	Layer 2	Layer 3
1	-5.00	3.70	4.00
2	15.00	2.59	4.29
3	35.00	1.97	7.07
4	55.00	1.01	9.44
5	75.00	1.94	7.69
6	95.00	3.47	5.29
7	115.00	3.49	4.38
Geo			
1	0.00	3.70	4.00
2	10.00	3.06	4.07
3	20.00	2.34	4.78
4	30.00	2.19	5.72
5	40.00	1.51	8.42
6	50.00	1.11	9.27
7	60.00	0.97	9.02
8	70.00	1.43	8.60
9	80.00	2.64	6.69
10	90.00	3.20	5.85
11	100.00	3.46	4.76
12	110.00	3.49	4.38





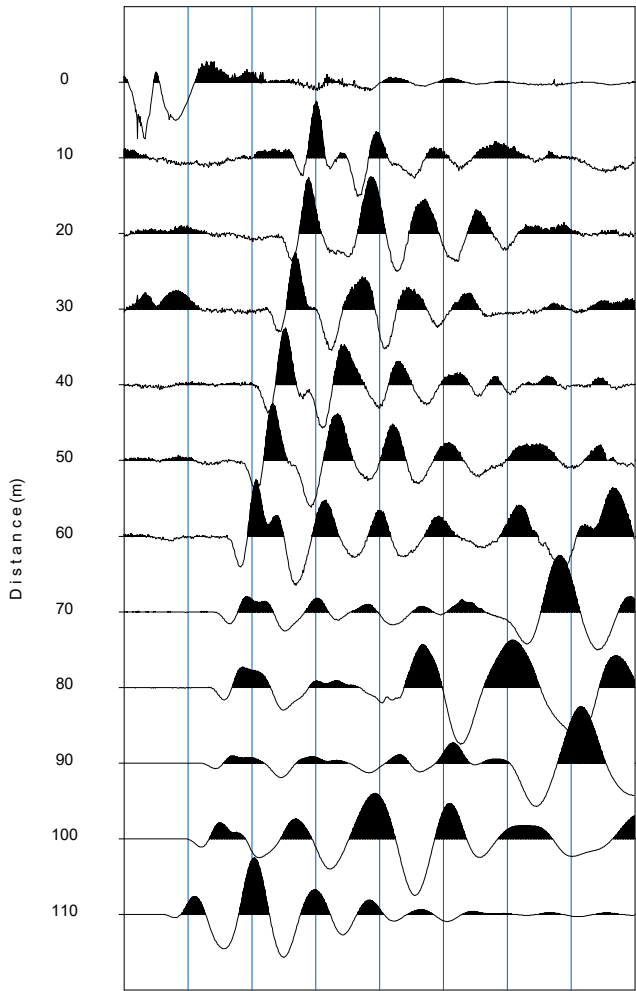
bs 2114.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

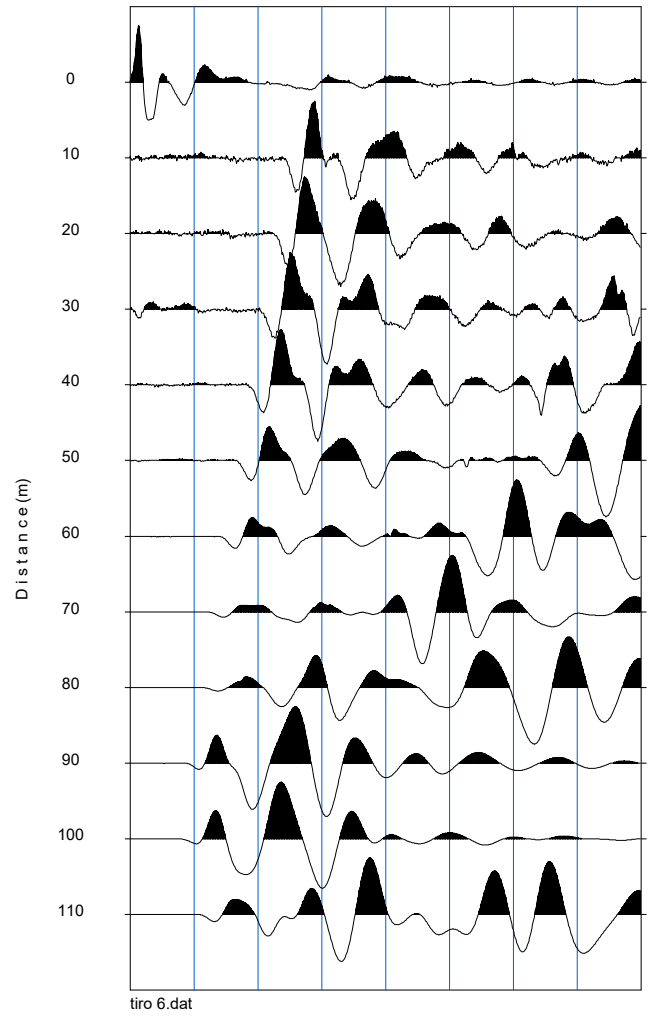
0 25 50 75 100 125 150 175 200



Source= 95.0m

Time (msec)

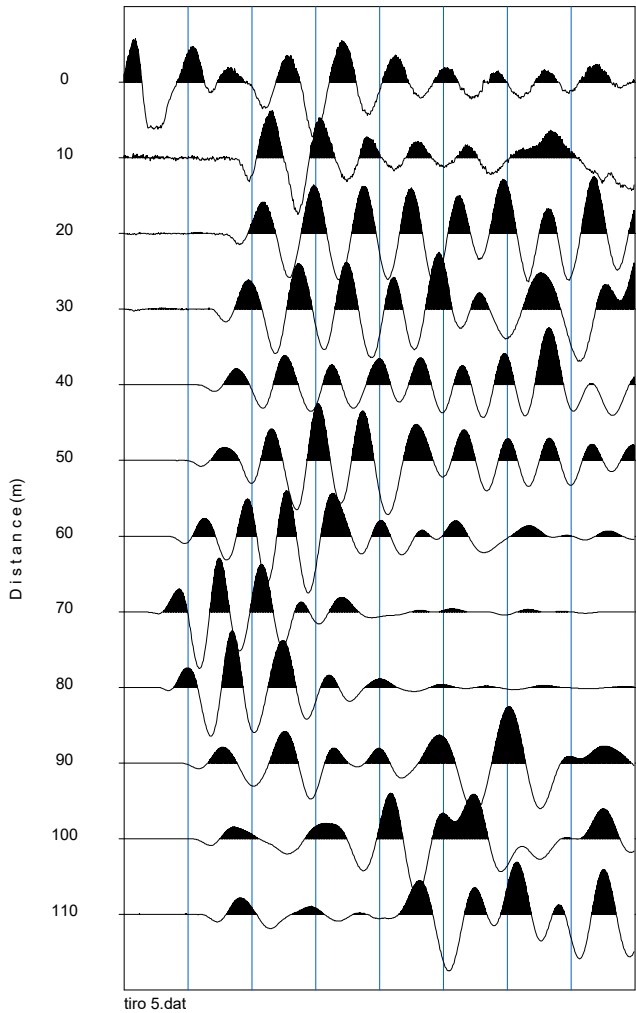
0 25 50 75 100 125 150 175 200



Source= 75.0m

Time (msec)

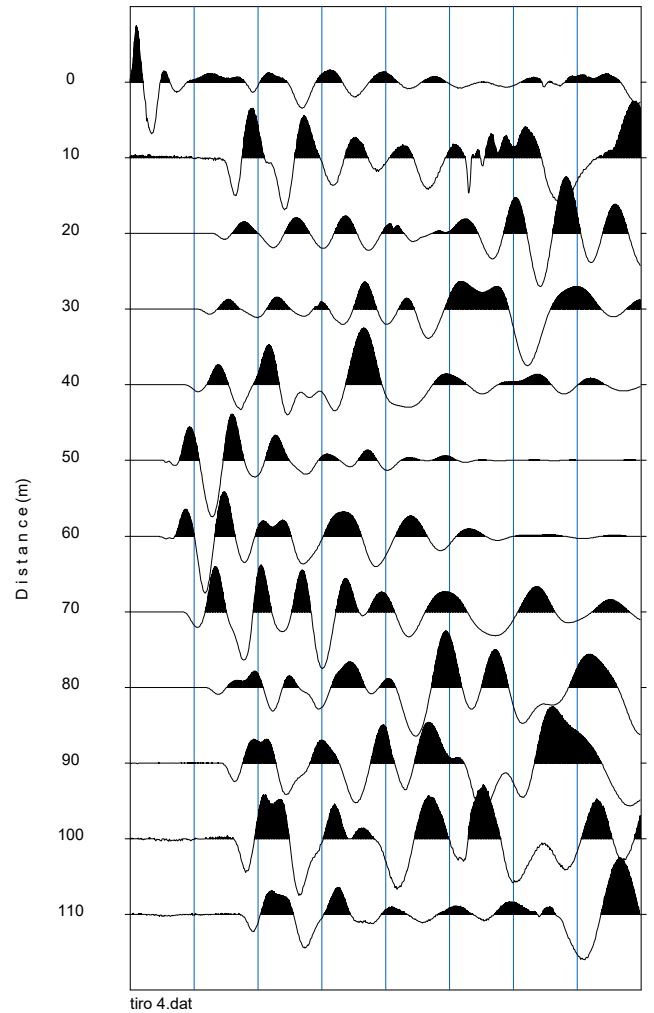
0 25 50 75 100 125 150 175 200



Source= 55.0m

Time (msec)

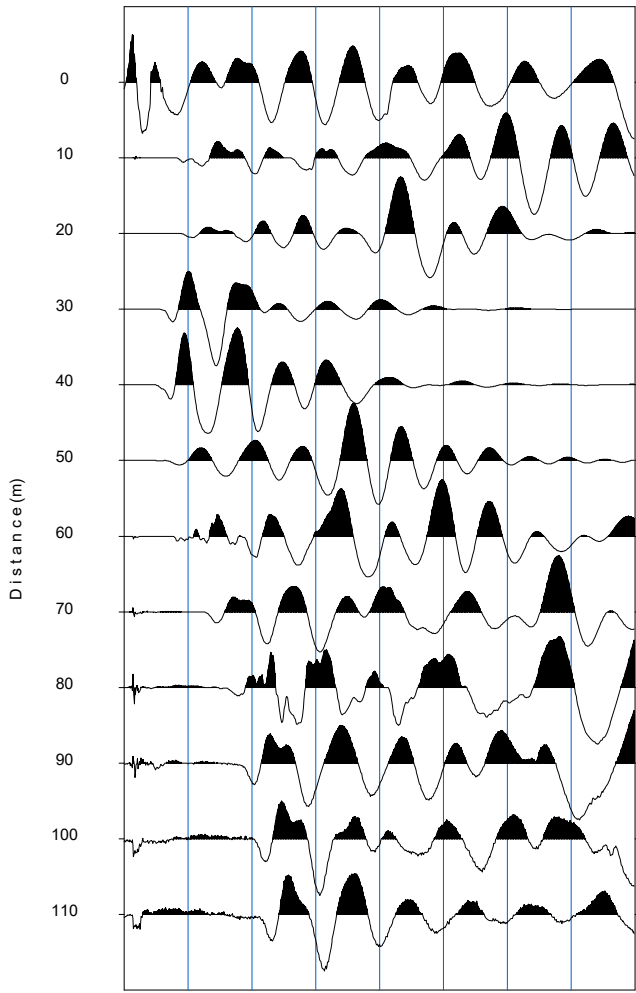
0 25 50 75 100 125 150 175 200



Source= 35.0m

Time (msec)

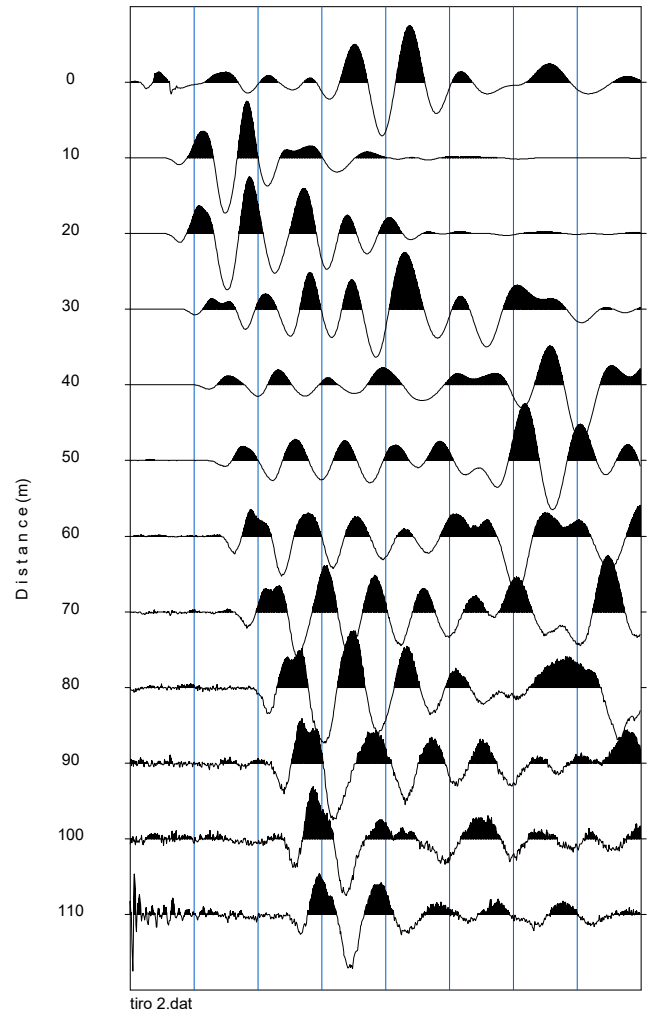
0 25 50 75 100 125 150 175 200



Source= 15.0m

Time (msec)

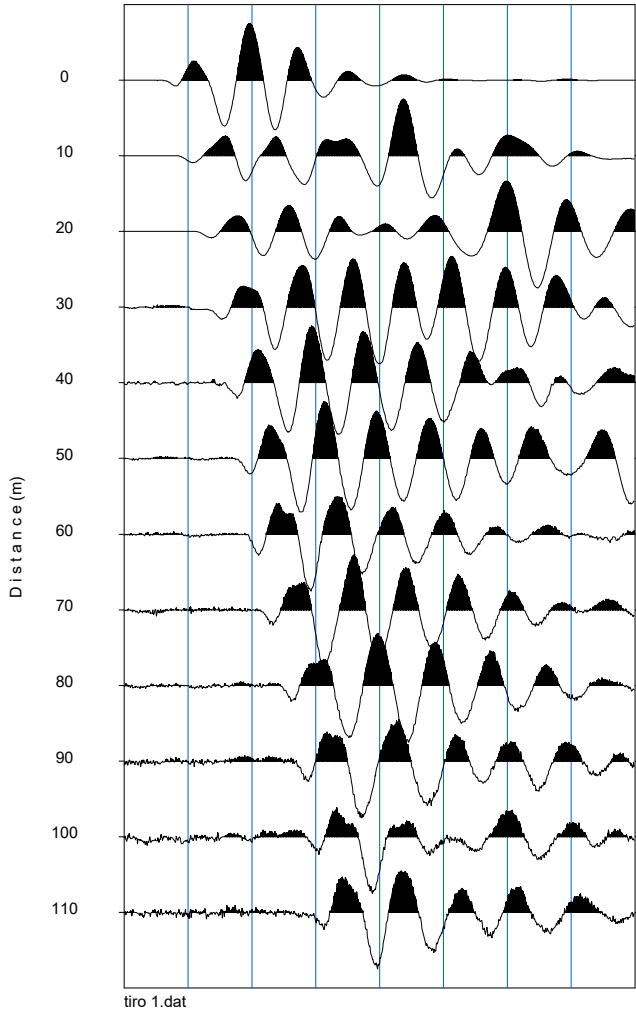
0 25 50 75 100 125 150 175 200



Source= -5.0m

Time (msec)

0 25 50 75 100 125 150 175 200



BASE SISMICA 2115



INPUT DATA BS 2115

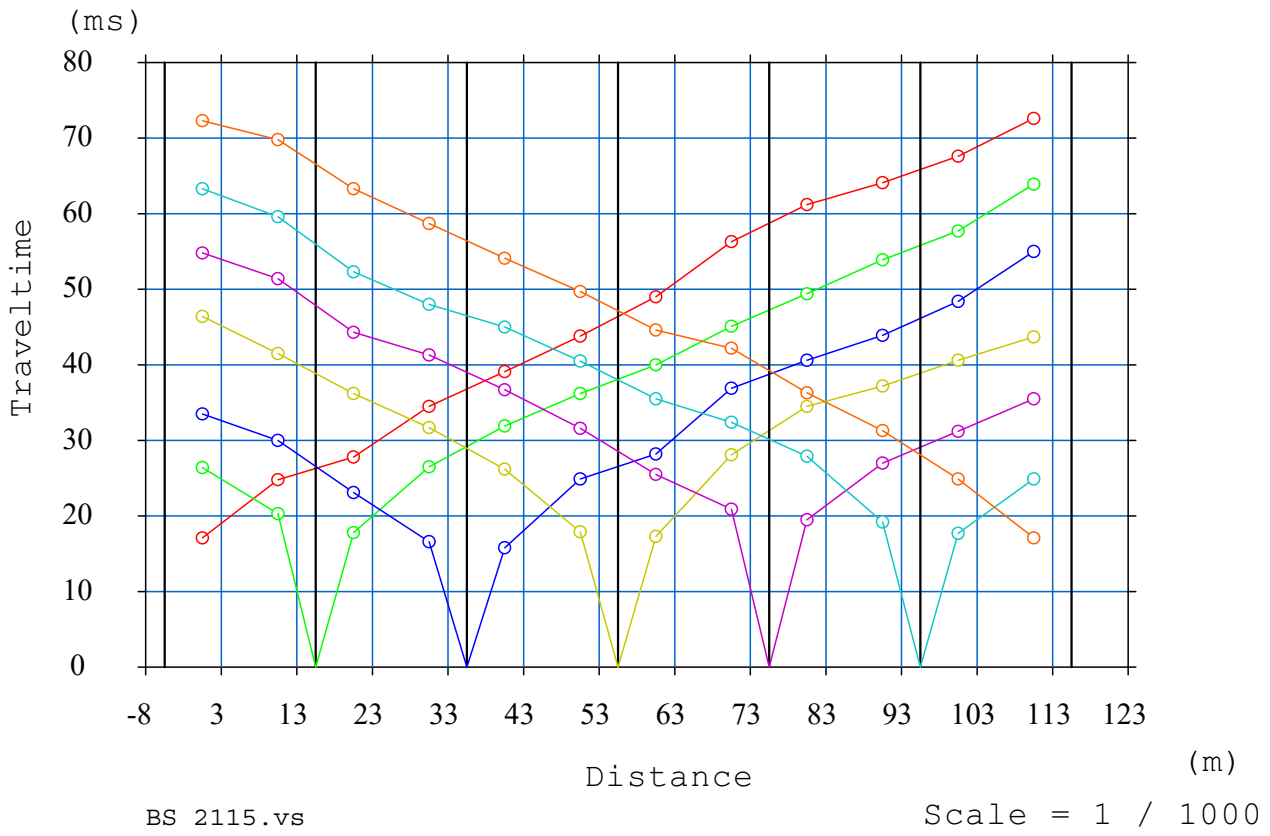
The spread contains 7 shotpoints and 12 geophones

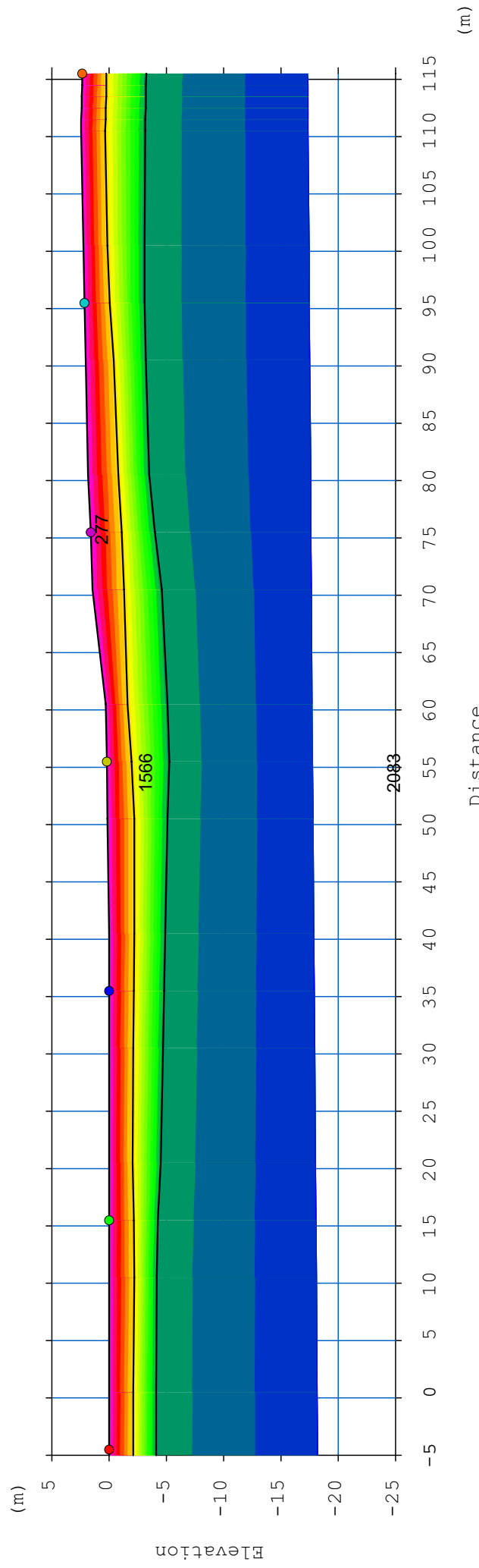
SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	0.00	15.00	0	0
3	0.00	35.00	0	0
4	0.24	55.00	0	0
5	1.65	75.00	0	0
6	2.17	95.00	0	0
7	2.37	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.00	0.00	0	17.16 1	26.45 1	33.60 1	46.44 1	54.83 1	63.33 1	72.36 1
2	0.00	10.00	0	24.87 1	20.36 1	30.08 1	41.50 1	51.42 1	59.61 1	69.87 1
3	0.00	20.00	0	27.90 1	17.86 1	23.16 1	36.24 1	44.31 1	52.33 1	63.40 1
4	0.00	30.00	0	34.51 1	26.53 1	16.67 1	31.77 1	41.38 1	48.04 1	58.75 1
5	0.00	40.00	0	39.18 1	31.92 1	15.87 1	26.28 1	36.80 1	45.03 1	54.10 1
6	0.17	50.00	0	43.89 1	36.26 1	25.00 1	17.93 1	31.68 1	40.55 1	49.77 1
7	0.35	60.00	0	49.08 1	40.08 1	28.26 1	17.33 1	25.54 1	35.51 1	44.64 1
8	1.45	70.00	0	56.32 1	45.19 1	36.96 1	28.13 1	20.93 1	32.50 1	42.23 1
9	1.85	80.00	0	61.21 1	49.46 1	40.62 1	34.56 1	19.52 1	27.90 1	36.37 1
10	2.06	90.00	0	64.19 1	53.91 1	43.91 1	37.23 1	27.08 1	19.28 1	31.40 1
11	2.27	100.00	0	67.65 1	57.75 1	48.44 1	40.65 1	31.21 1	17.73 1	25.00 1
12	2.47	110.00	0	72.65 1	63.94 1	55.07 1	43.76 1	35.60 1	24.93 1	17.20 1

OUTPUT DATA BS 2115

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.13	4.15
2	15.00	2.18	4.3
3	35.00	2.16	4.85
4	55.00	2.21	5.5
5	75.00	2.77	5.68
6	95.00	2.26	5.28
7	115.00	2.12	5.63
Geo			
1	0.00	2.13	4.15
2	10.00	2.24	4.19
3	20.00	2.09	4.52
4	30.00	2.12	4.74
5	40.00	2.23	4.95
6	50.00	2.39	5.3
7	60.00	1.96	5.45
8	70.00	2.76	6.07
9	80.00	2.69	5.38
10	90.00	2.51	5.28
11	100.00	2.11	5.38
12	110.00	2.12	5.63



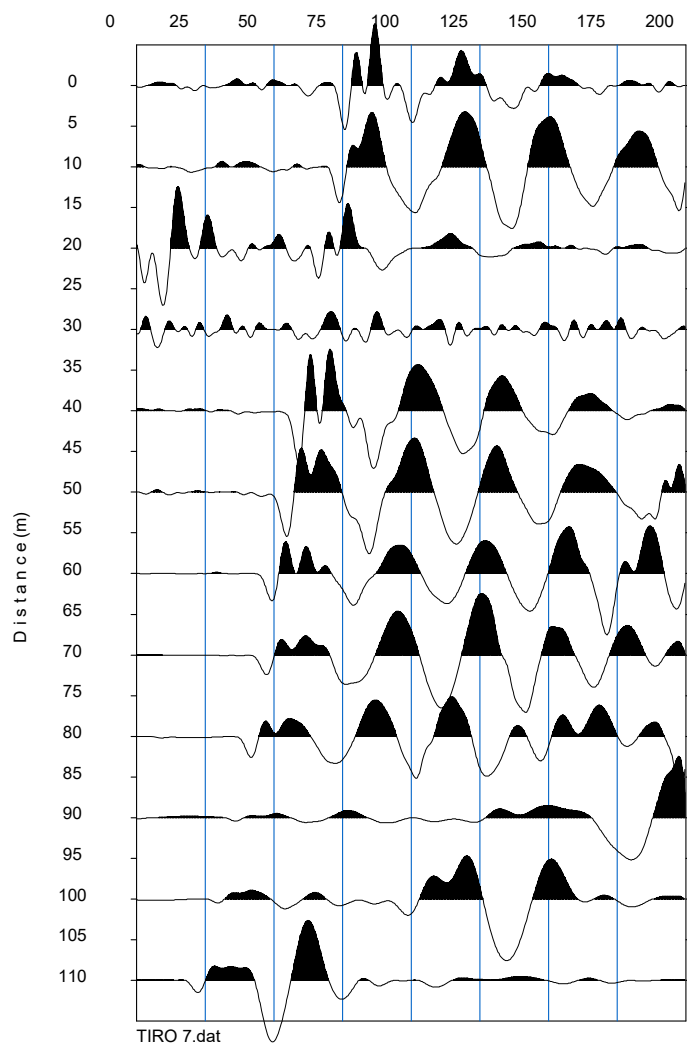


BS 2115.vs

Scale = 1 / 500

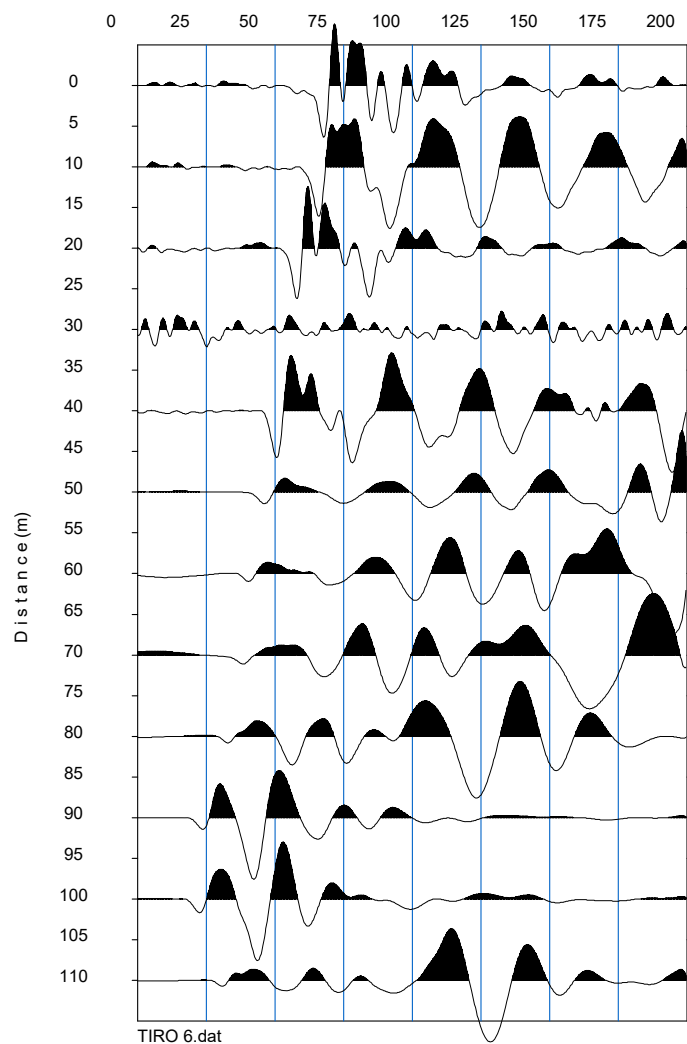
Source=115.0m

Time (msec)



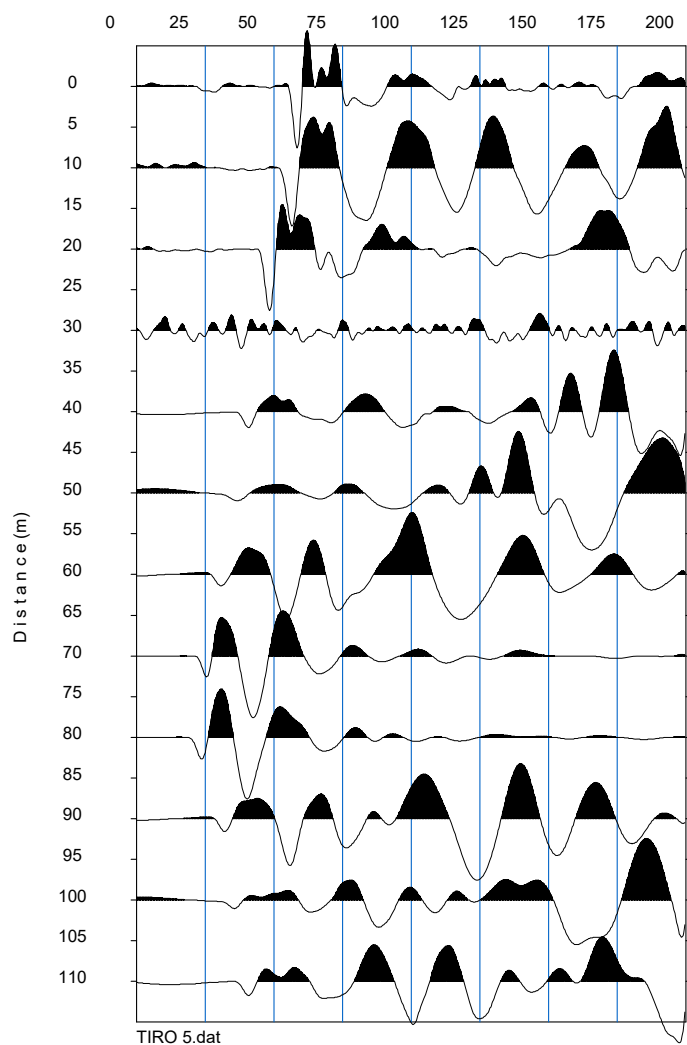
Source= 95.0m

Time (msec)



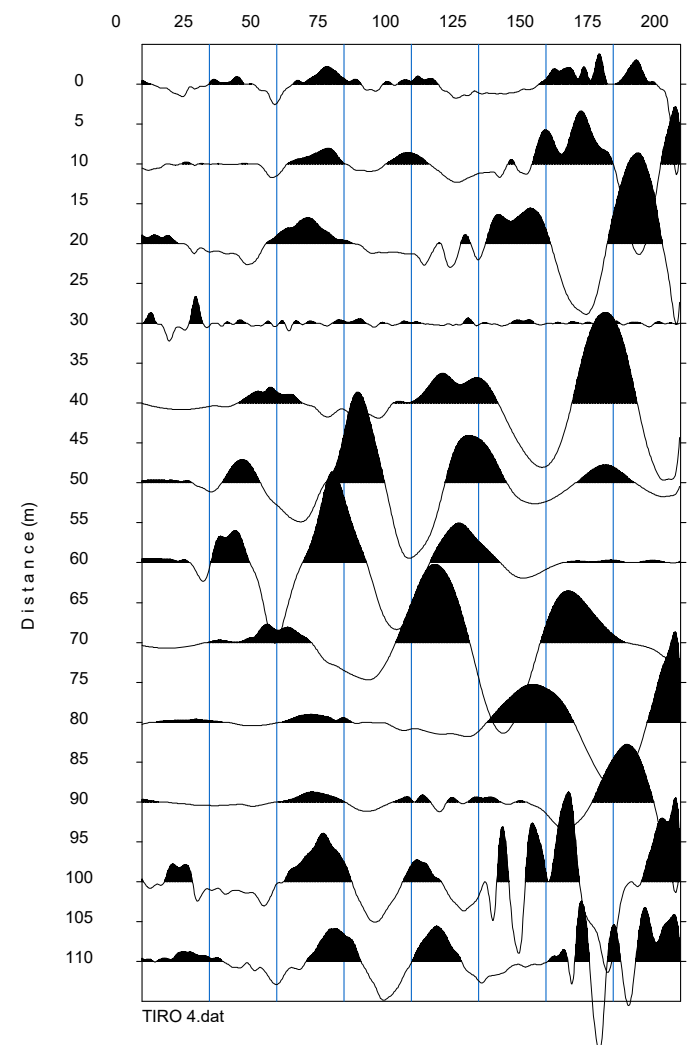
Source= 75.0m

Time (msec)



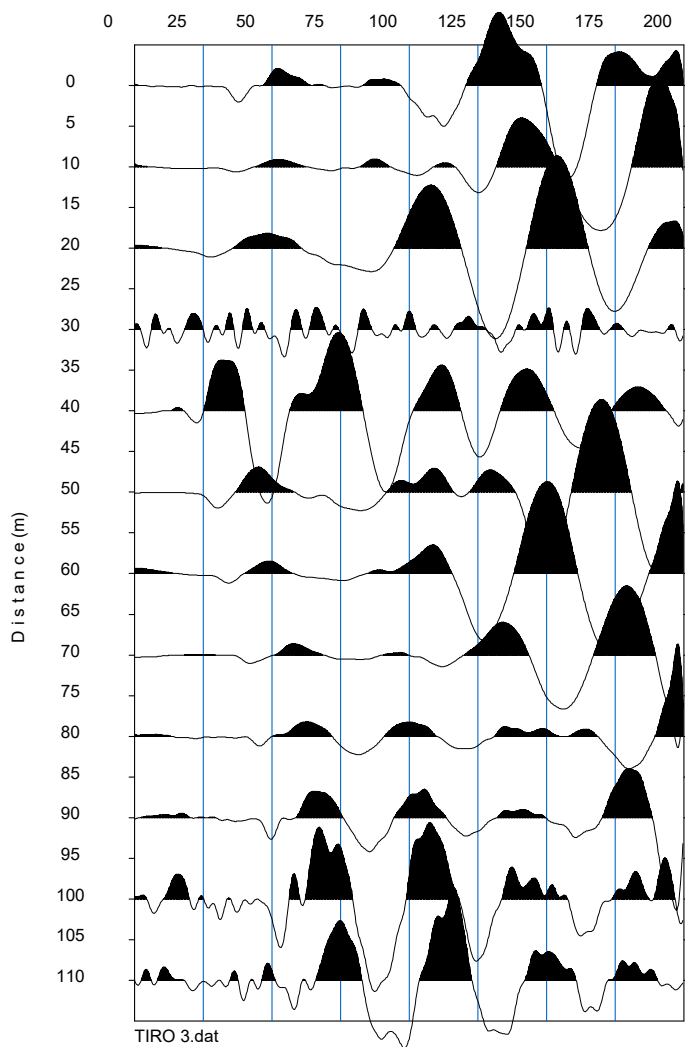
Source= 55.0m

Time (msec)



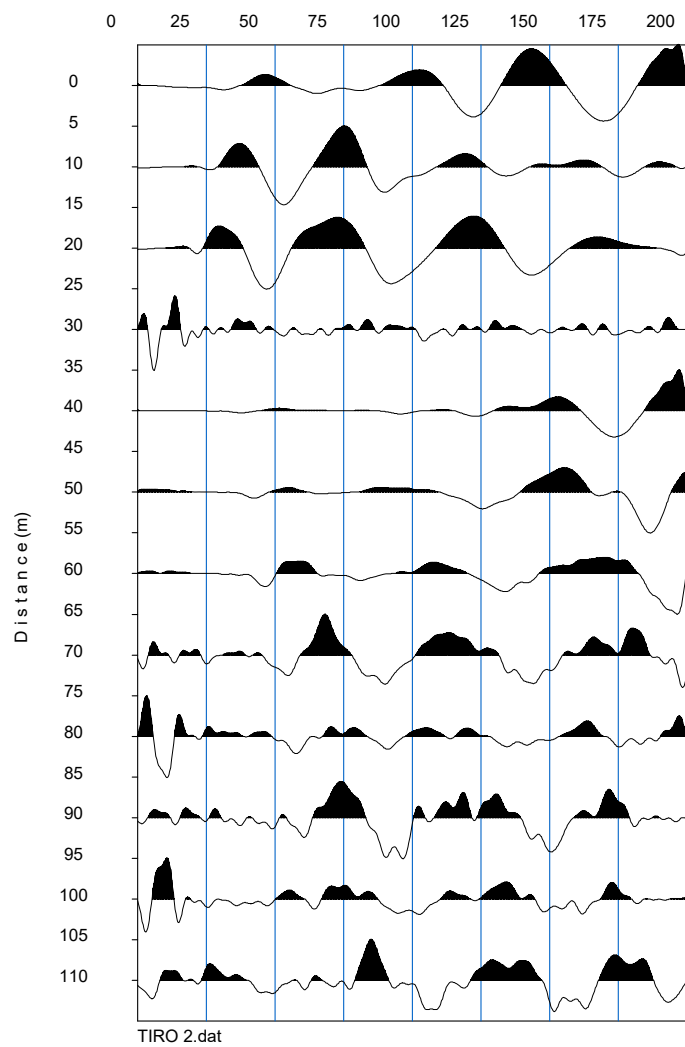
Source= 35.0m

Time (msec)



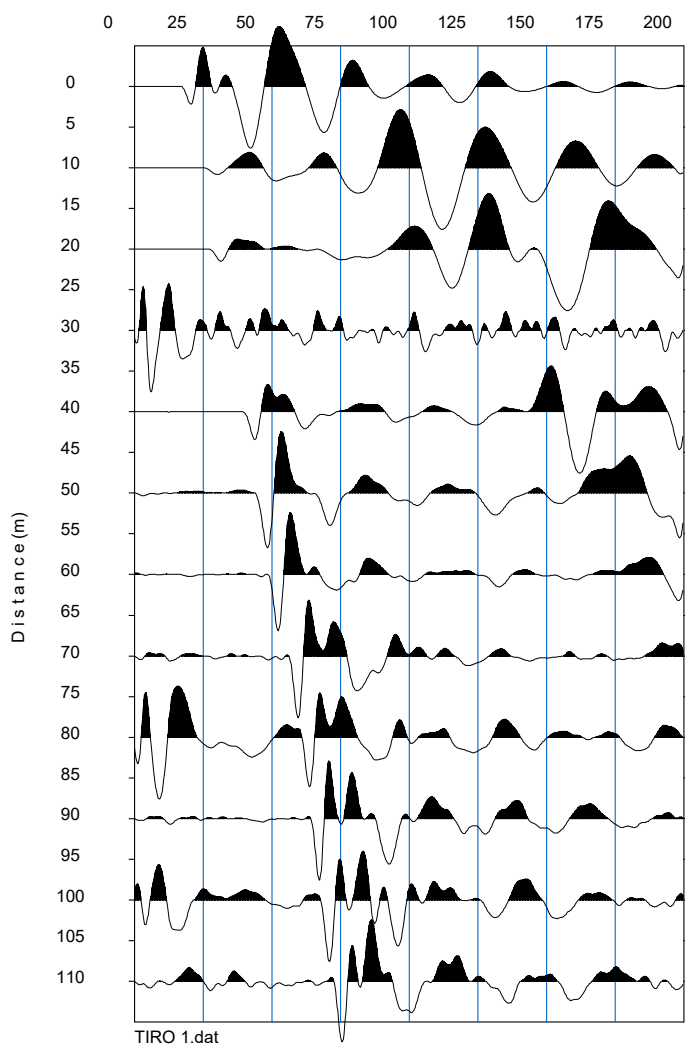
Source= 15.0m

Time (msec)



Source= -5.0m

Time (msec)



BASE SISMICA 2116



INPUT DATA BS 2116

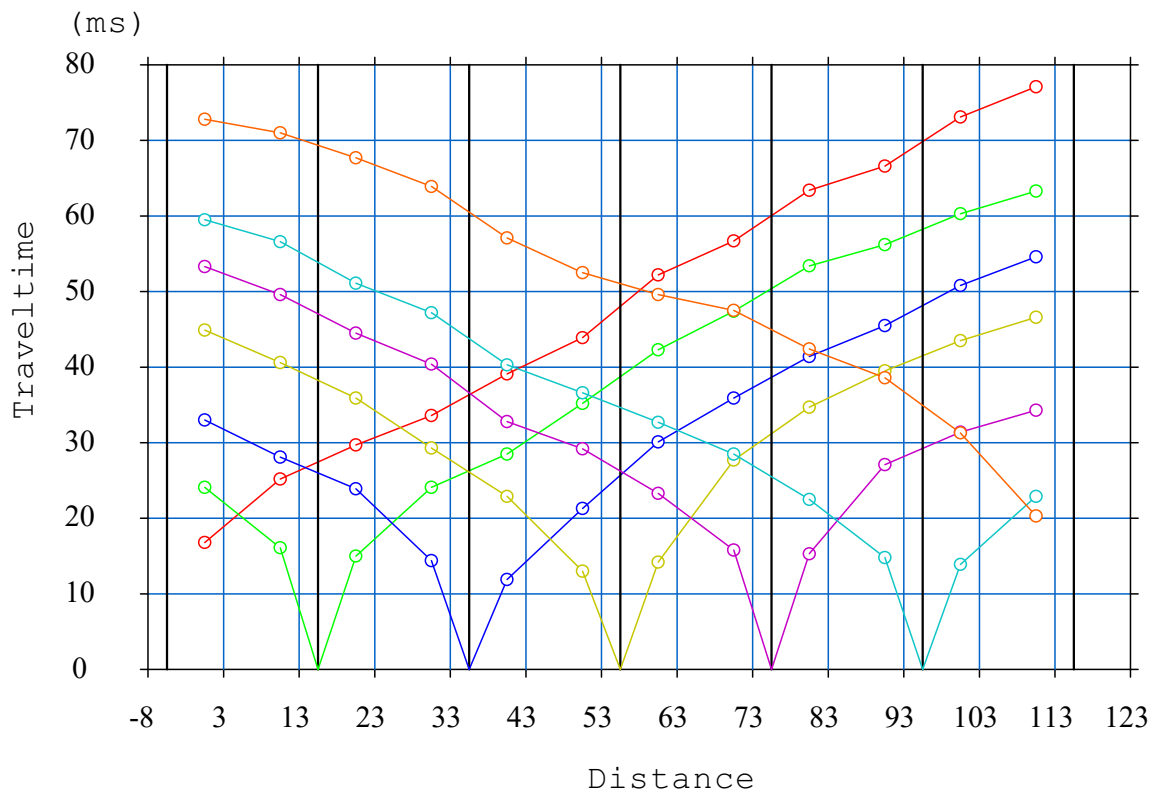
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.79	-5.00	0	0
2	1.67	15.00	0	0
3	3.43	35.00	0	0
4	4.73	55.00	0	0
5	6.21	75.00	0	0
6	7.29	95.00	0	0
7	8.48	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.67	0.00	0	16.85 1	24.18 1	33.03 1	44.92 1	53.34 1	59.57 1	72.81 1
2	1.34	10.00	0	25.25 1	16.10 1	28.14 1	40.66 1	49.63 1	56.68 1	71.00 1
3	2.07	20.00	0	29.80 1	15.07 1	23.98 1	36.00 1	44.58 1	51.16 1	67.78 1
4	3.02	30.00	0	33.69 1	24.18 1	14.43 1	29.33 1	40.41 1	47.23 1	63.96 1
5	3.82	40.00	0	39.18 1	28.52 1	11.91 1	22.93 1	32.85 1	40.31 1	57.15 1
6	4.26	50.00	0	43.92 1	35.28 1	21.38 1	13.07 1	29.30 1	36.60 1	52.53 1
7	5.16	60.00	0	52.21 1	42.40 1	30.16 1	14.27 1	23.36 1	32.80 1	49.62 1
8	5.85	70.00	0	56.70 1	47.47 1	35.96 1	27.73 1	15.87 1	28.53 1	47.60 1
9	6.43	80.00	0	63.49 1	53.47 1	41.48 1	34.80 1	15.38 1	22.53 1	42.48 1
10	7.03	90.00	0	66.67 1	56.30 1	45.53 1	39.57 1	27.18 1	14.86 1	38.69 1
11	7.51	100.00	0	73.17 1	60.40 1	50.88 1	43.56 1	31.49 1	13.90 1	31.30 1
12	8.14	110.00	0	77.14 1	63.33 1	54.63 1	46.61 1	34.40 1	22.93 1	20.34 1

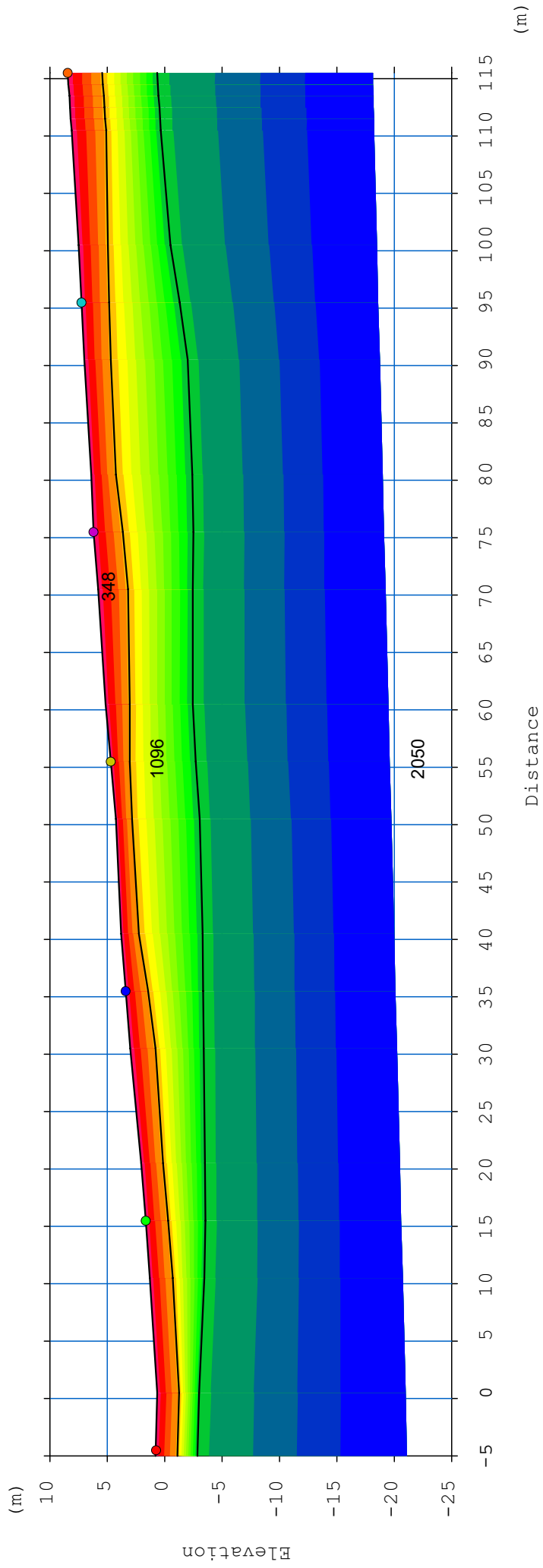
OUTPUT DATA BS 2116

SP	X-loc	Layer 2	Layer 3
1	-5	1.95	3.69
2	15	2.01	5.27
3	35	1.94	6.82
4	55	1.66	7.47
5	75	2.55	8.75
6	95	2.43	8.61
7	115	3.00	7.79
Geo			
1	0	1.95	3.69
2	10	2.05	4.79
3	20	1.91	5.62
4	30	2.21	6.47
5	40	1.54	7.12
6	50	1.4	7.34
7	60	2.08	7.65
8	70	2.64	8.32
9	80	2.15	8.86
10	90	2.32	9.03
11	100	2.54	8.02
12	110	3.00	7.79



BS 2116.vs

Scale = 1 / 1000



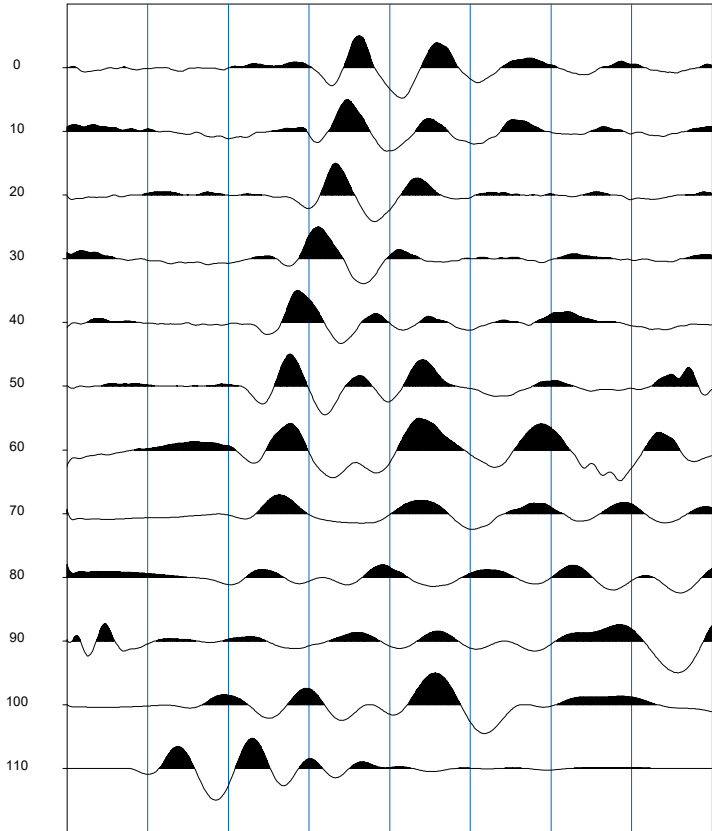
BS 2116.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

0 25 50 75 100 125 150 175 200

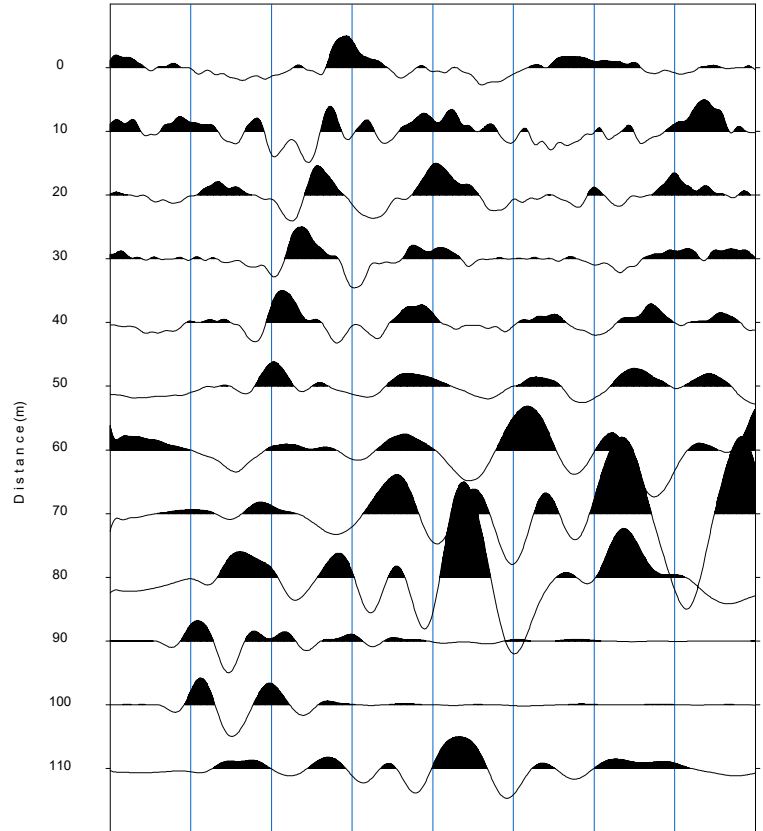


TIRO 7.dat

Source=95.0m

Time (msec)

0 25 50 75 100 125 150 175 200

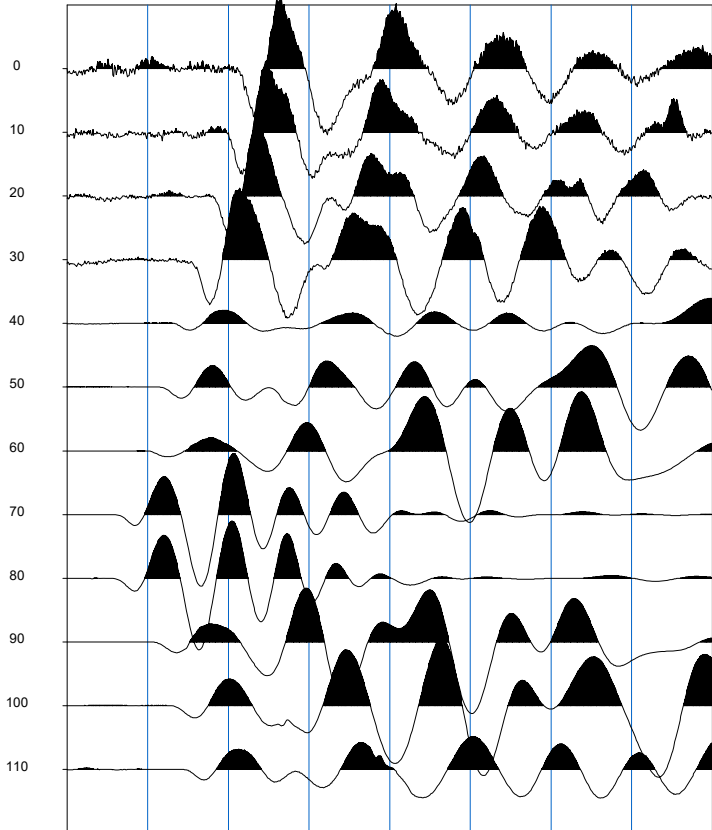


TIRO 6.dat

Source=75.0m

Time (msec)

0 25 50 75 100 125 150 175 200

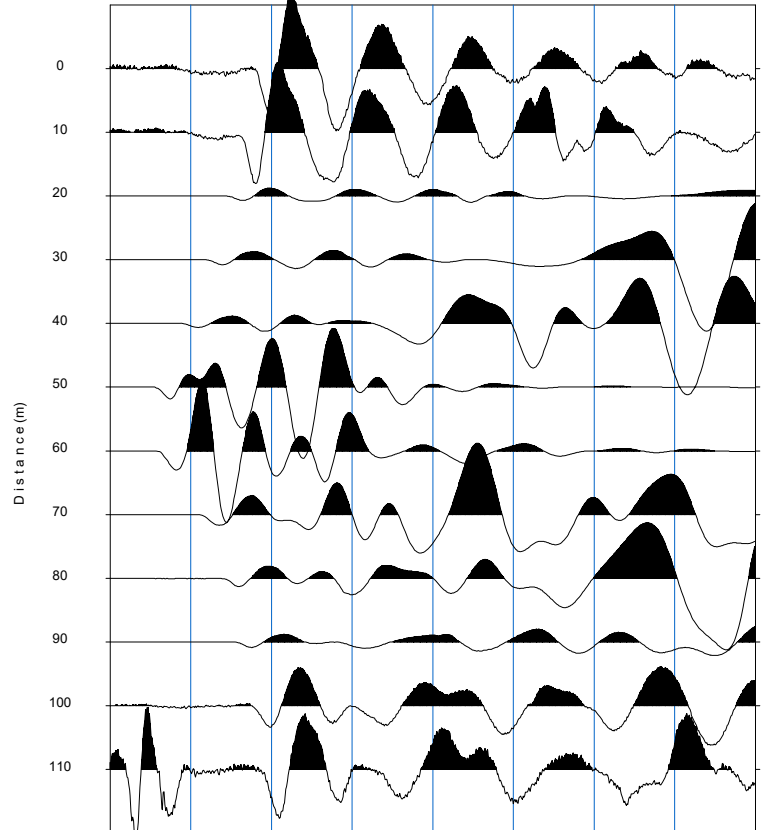


TIRO 5.dat

Source=55.0m

Time (msec)

0 25 50 75 100 125 150 175 200

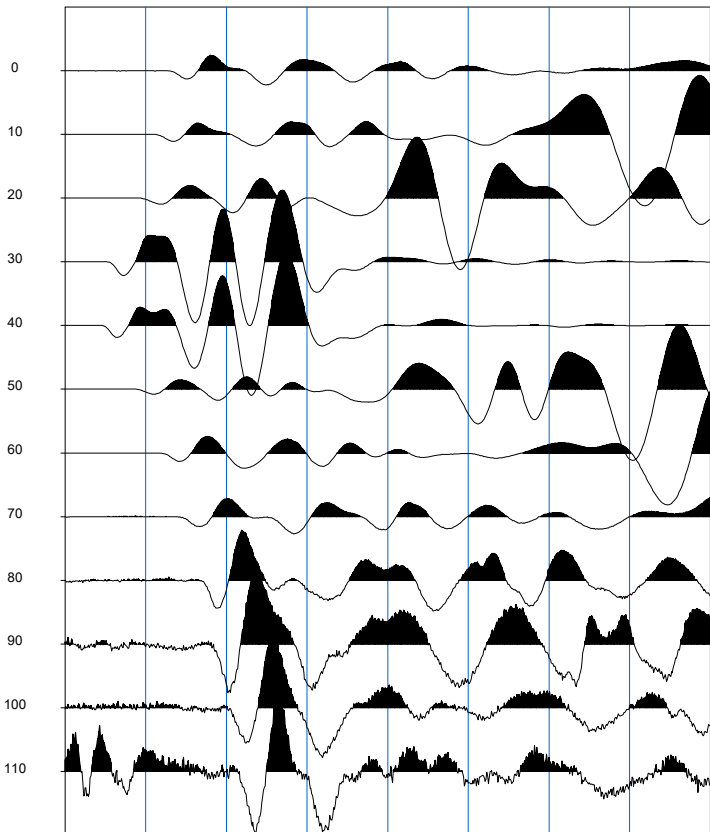


TIRO 4.dat

Source= 35.0m

Time (msec)

0 25 50 75 100 125 150 175 200

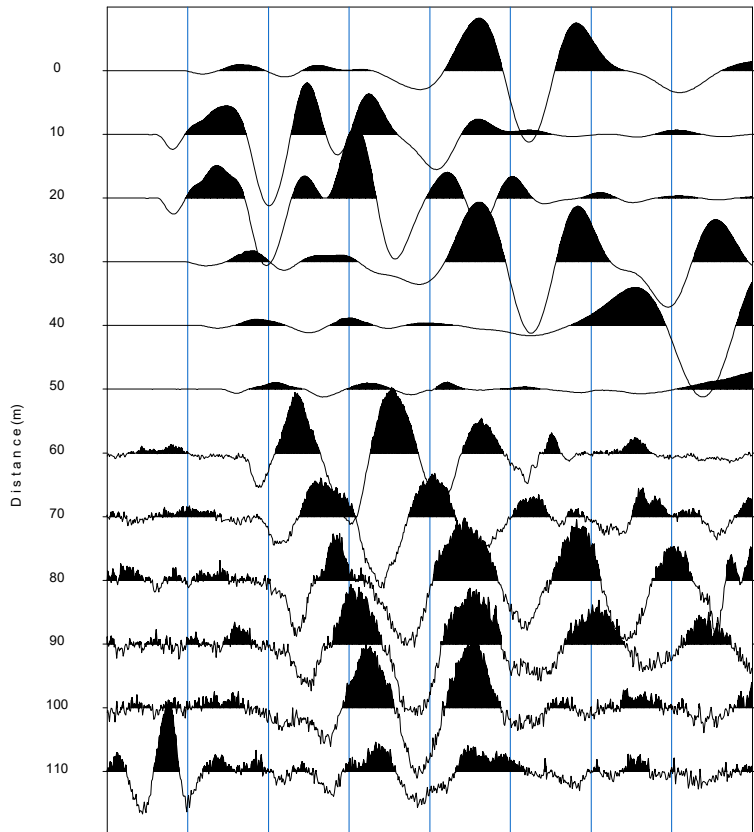


TIRO 3.dat

Source= 15.0m

Time (msec)

0 25 50 75 100 125 150 175 200

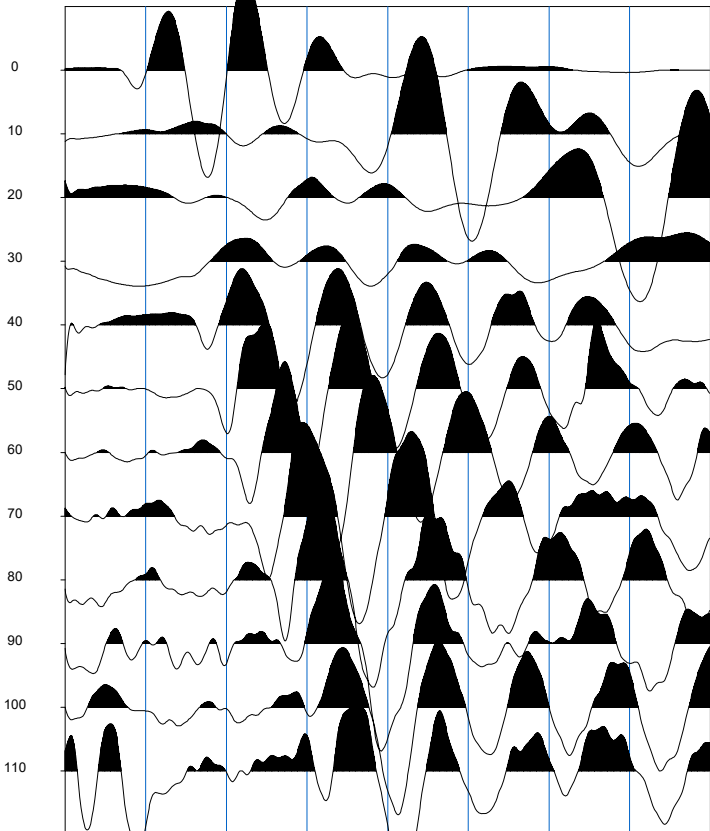


TIRO 2.dat

Source= -5.0m

Time (msec)

0 25 50 75 100 125 150 175 200



TIRO 1.dat

BASE SISMICA 2117



INPUT DATA BS 2117

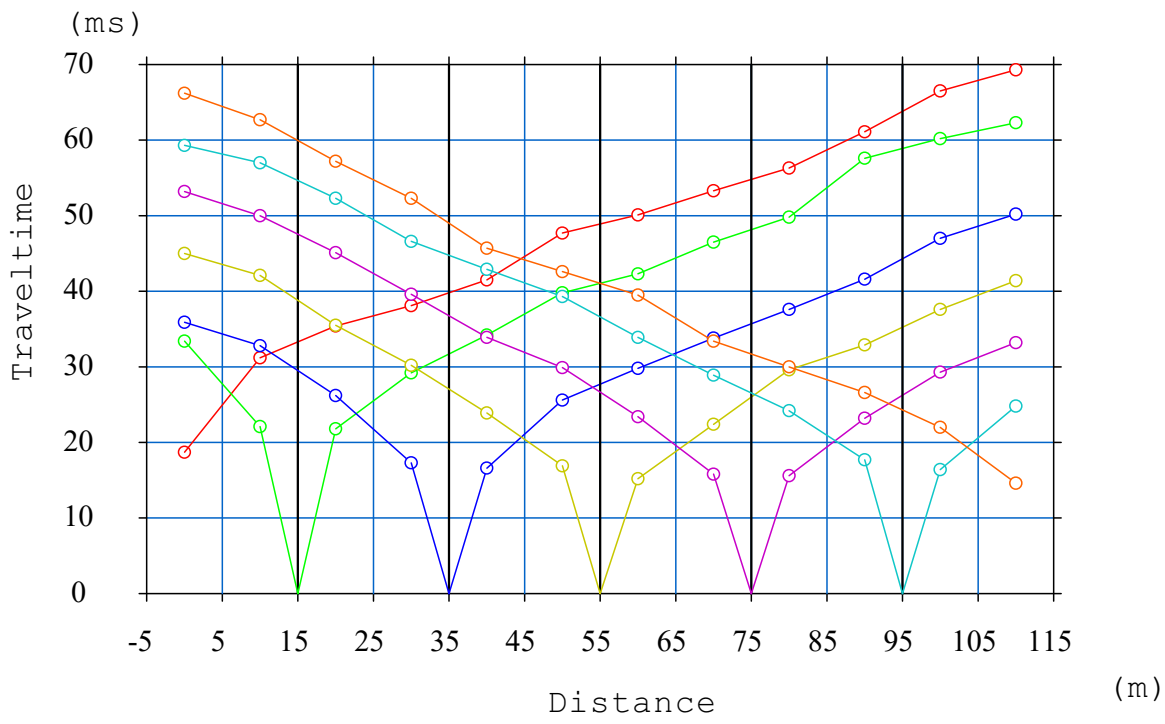
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	23.54	-5.00	0	0
2	18.00	15.00	0	0
3	13.31	35.00	0	0
4	9.94	55.00	0	0
5	7.60	75.00	0	0
6	4.61	95.00	0	0
7	0.00	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	21.65	0.00	0	18.72 1	33.42 1	35.95 1	45.05 1	53.21 1	59.39 1	66.24 1
2	19.16	10.00	0	31.27 1	22.13 1	32.89 1	42.14 1	50.08 1	57.09 1	62.75 1
3	16.93	20.00	0	35.40 1	21.83 1	26.29 1	35.58 1	45.16 1	52.35 1	57.28 1
4	14.44	30.00	0	38.13 1	29.27 1	17.36 1	30.23 1	39.61 1	46.68 1	52.31 1
5	12.22	40.00	0	41.59 1	34.20 1	16.66 1	23.93 1	33.92 1	43.00 1	45.76 1
6	10.84	50.00	0	47.77 1	39.85 1	25.67 1	16.91 1	29.97 1	39.31 1	42.60 1
7	9.13	60.00	0	50.13 1	42.38 1	29.84 1	15.25 1	23.47 1	33.95 1	39.51 1
8	8.11	70.00	0	53.38 1	46.58 1	33.86 1	22.46 1	15.84 1	28.90 1	33.45 1
9	7.18	80.00	0	56.31 1	49.84 1	37.62 1	29.66 1	15.63 1	24.30 1	30.09 1
10	5.79	90.00	0	61.18 1	57.68 1	41.68 1	32.98 1	23.22 1	17.70 1	26.60 1
11	3.54	100.00	0	66.50 1	60.26 1	47.03 1	37.61 1	29.31 1	16.42 1	22.06 1
12	1.41	110.00	0	69.36 1	62.35 1	50.24 1	41.45 1	33.28 1	24.82 1	14.67 1

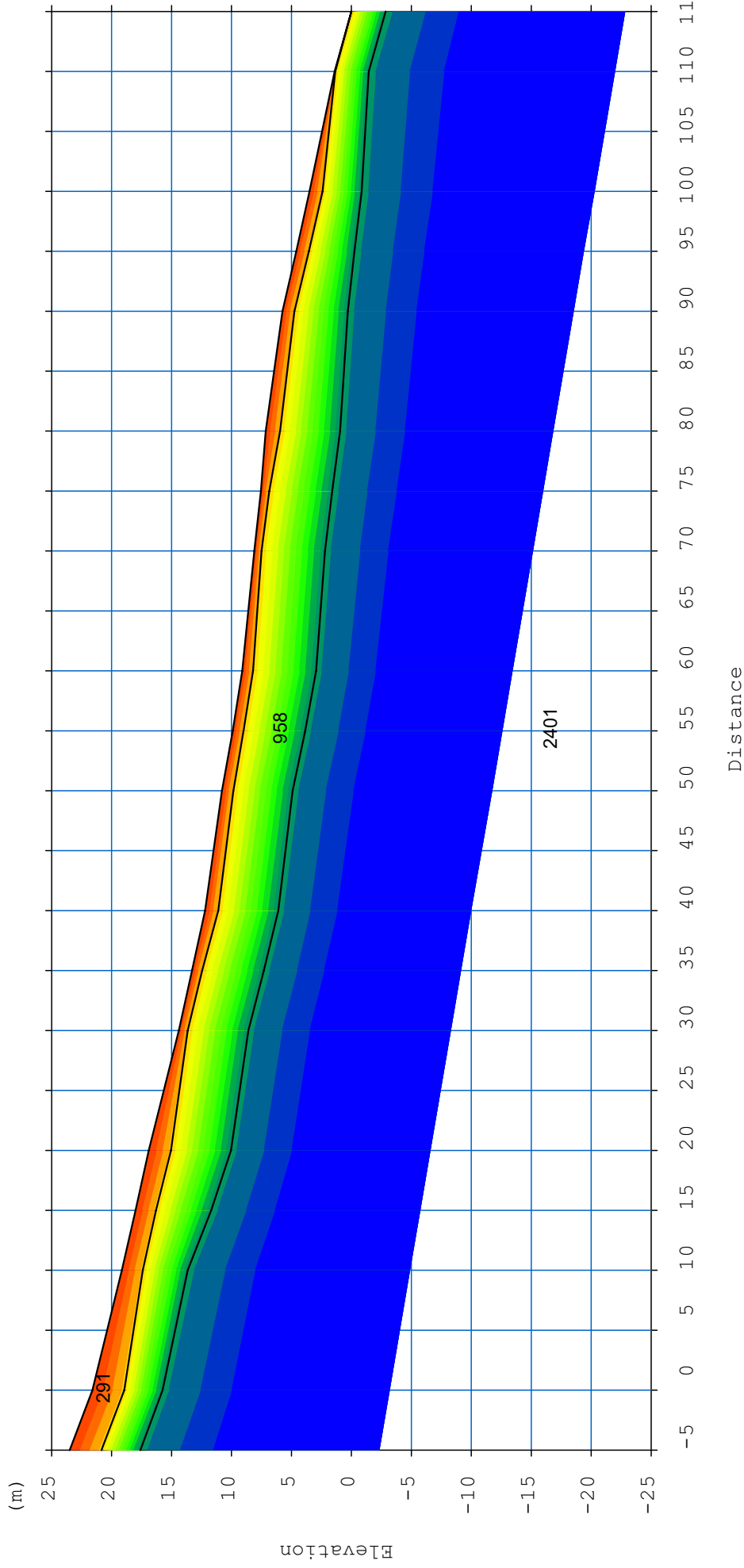
OUTPUT DATA BS 2117

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.66	5.89
2	15.00	1.67	6.27
3	35.00	0.82	5.98
4	55.00	0.91	6.08
5	75.00	0.72	6.00
6	95.00	1.01	4.91
7	115.00	0.02	2.87
Geo			
1	0.00	2.66	5.89
2	10.00	1.71	5.51
3	20.00	1.84	6.86
4	30.00	0.76	5.81
5	40.00	1.07	6.11
6	50.00	0.95	5.91
7	60.00	0.89	6.17
8	70.00	0.61	5.87
9	80.00	1.21	6.21
10	90.00	0.99	5.46
11	100.00	1.09	4.43
12	110.00	0.02	2.87



BS2117.vs

Scale = 1 / 1000



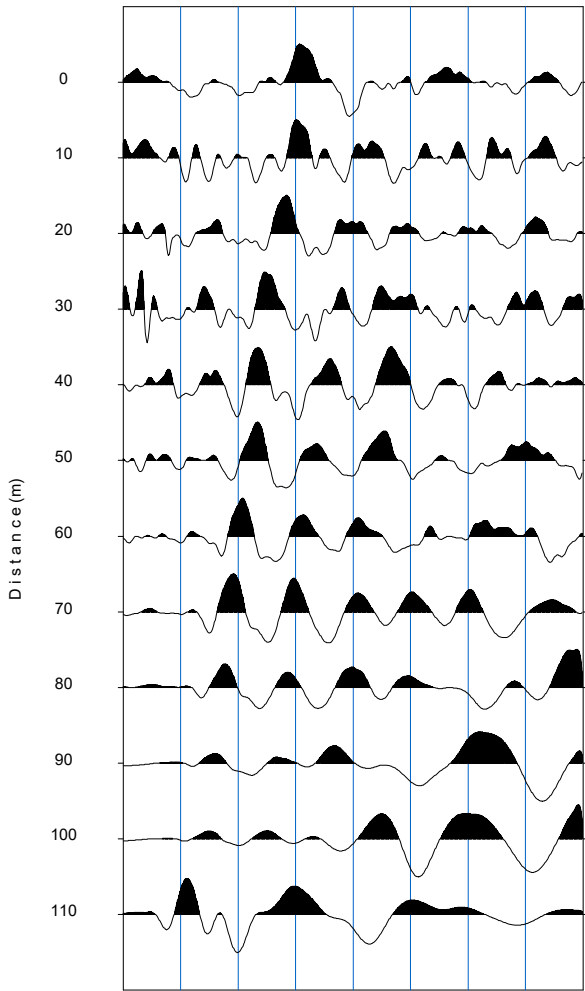
BS2117.vs

Scale = 1 / 500

Source=115.0m

Time (msec)

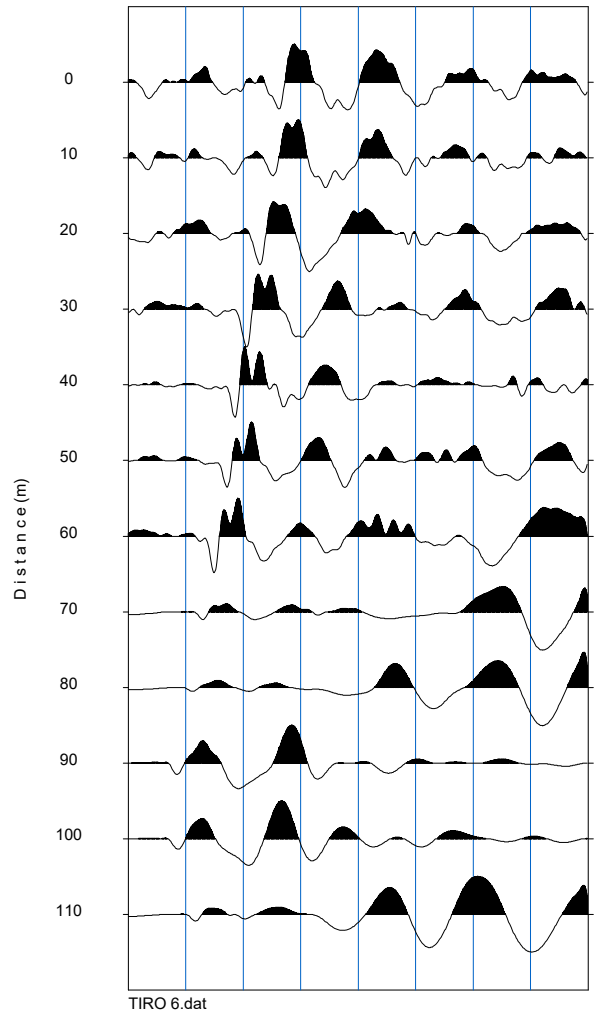
0 25 50 75 100 125 150 175 200



Source= 95.0m

Time (msec)

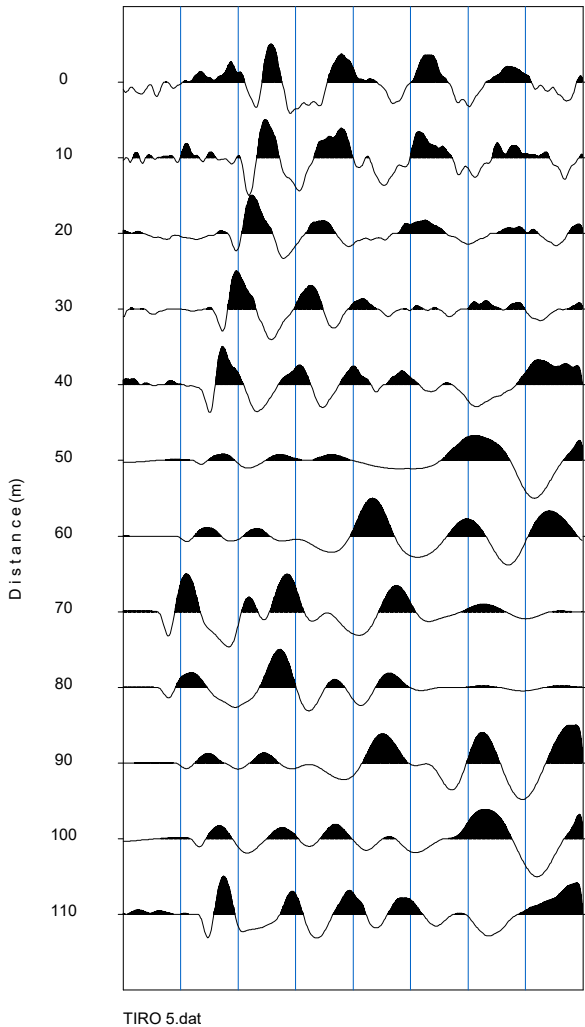
0 25 50 75 100 125 150 175 200



Source= 75.0m

Time (msec)

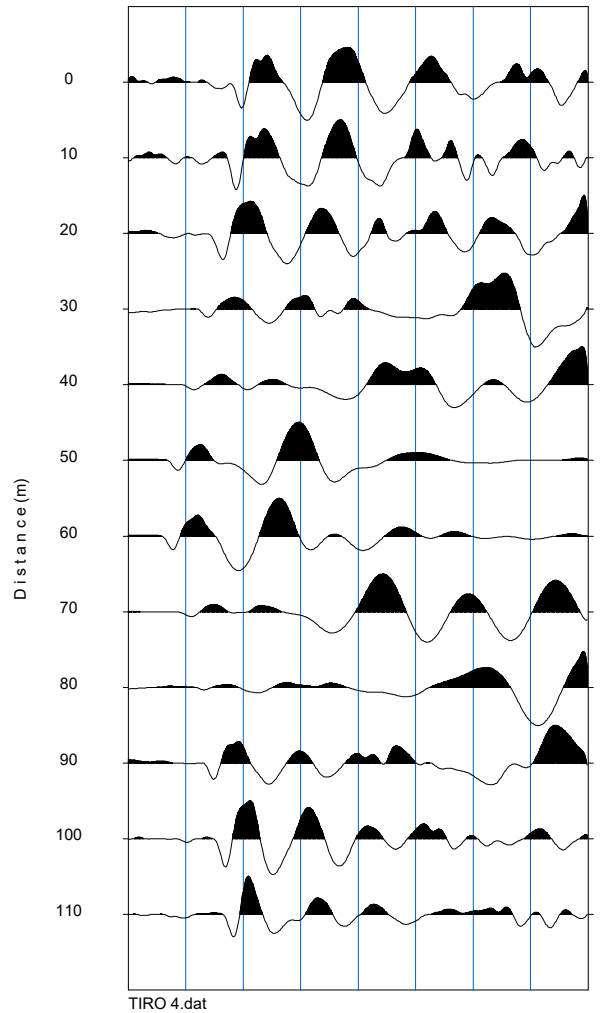
0 25 50 75 100 125 150 175 200



Source= 55.0m

Time (msec)

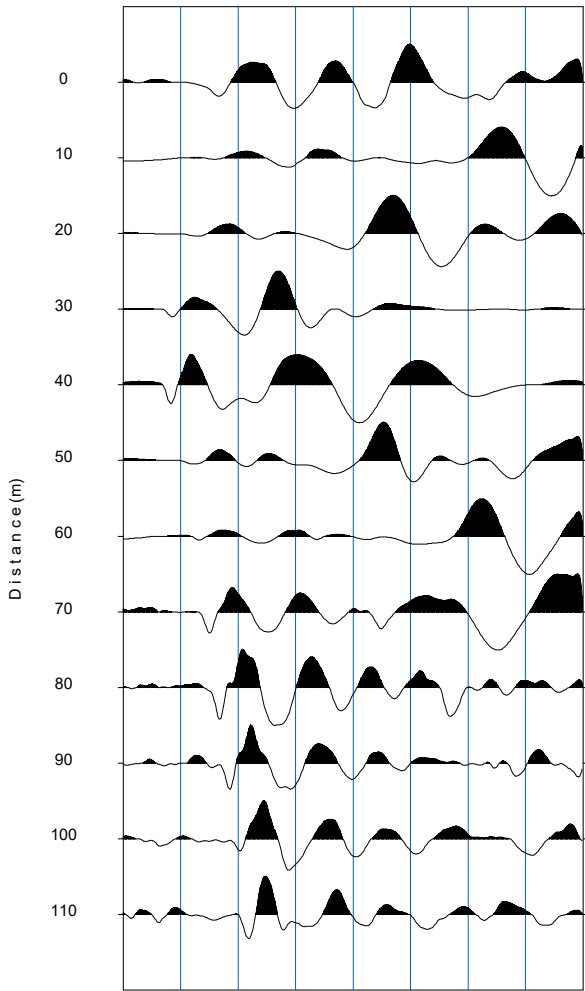
0 25 50 75 100 125 150 175 200



Source= 35.0m

Time (msec)

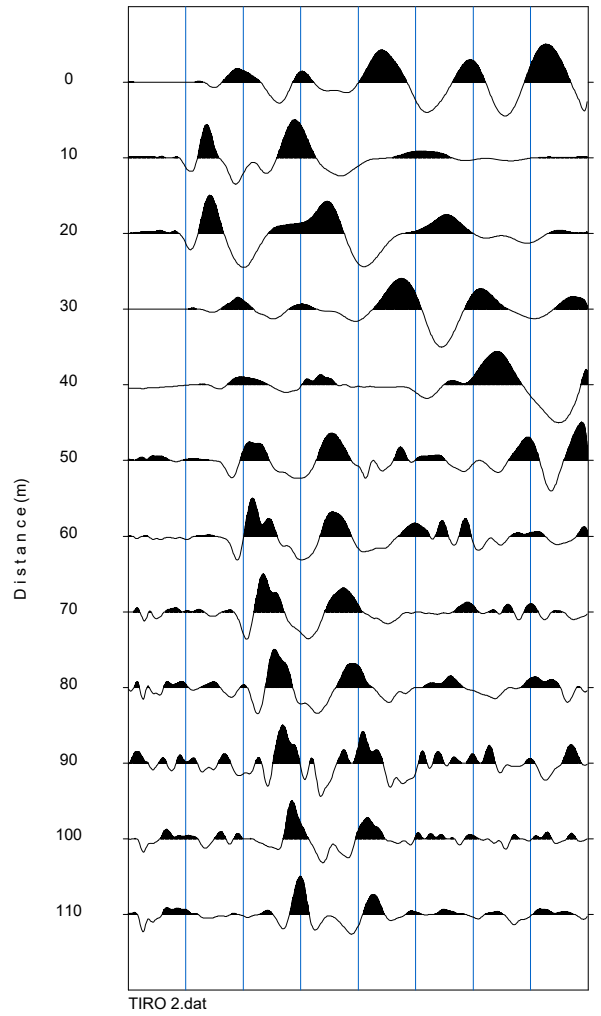
0 25 50 75 100 125 150 175 200



Source= 15.0m

Time (msec)

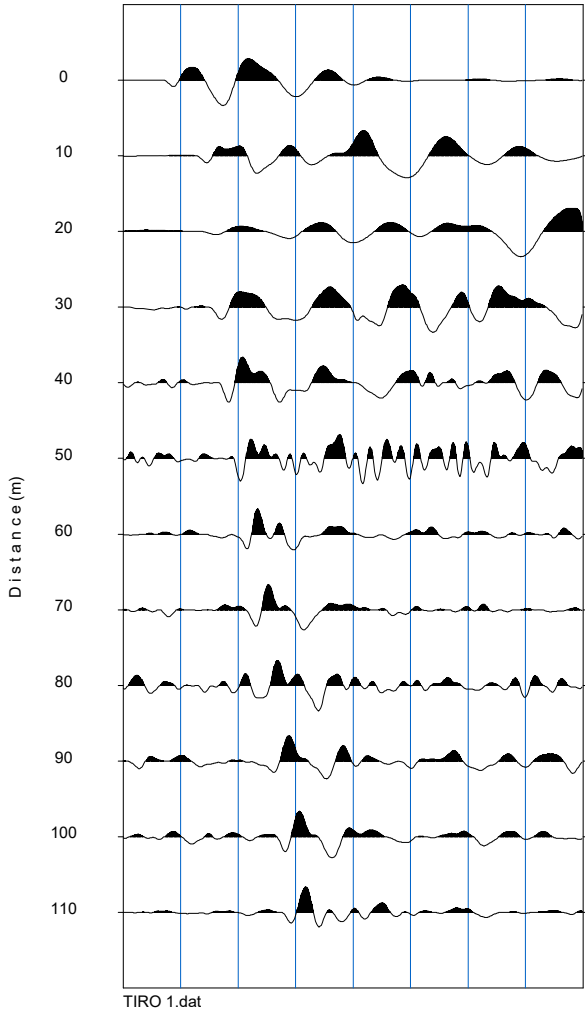
0 25 50 75 100 125 150 175 200



Source= -5.0m

Time (msec)

0 25 50 75 100 125 150 175 200



BASE SISMICA 2118



INPUT DATA BS 2118 onda P

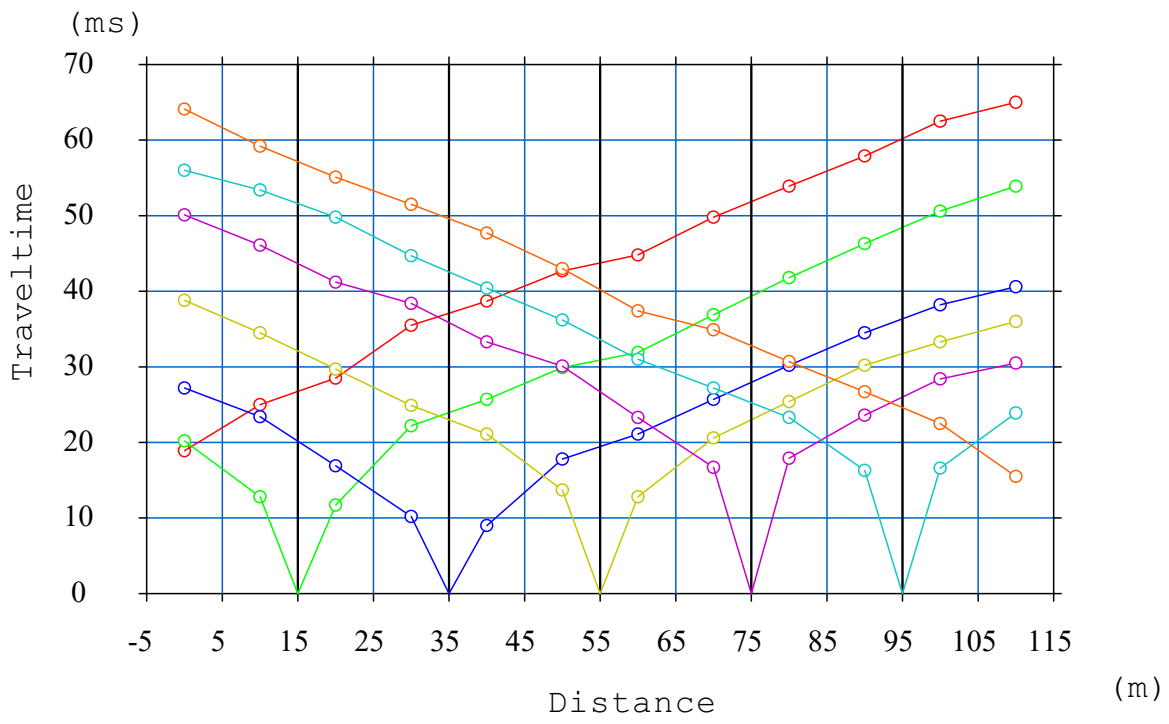
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	16.80	-5.00	0.00	0.00
2	14.30	15.00	0.00	0.00
3	11.46	35.00	0.00	0.00
4	8.95	55.00	0.00	0.00
5	7.14	75.00	0.00	0.00
6	4.03	95.00	0.00	0.00
7	0.00	115.00	0.00	0.00

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	16.34	0.00	0.00	18.96 1	20.25 1	27.26 1	38.87 1	50.15 1	56.10 1	64.20 1
2	15.15	10.00	0.00	25.04 1	12.84 1	23.41 1	34.53 1	46.20 1	53.44 1	59.26 1
3	13.34	20.00	0.00	28.59 1	11.75 1	16.99 1	29.71 1	41.30 1	49.88 1	55.11 1
4	12.20	30.00	0.00	35.56 1	22.22 1	10.27 1	24.92 1	38.41 1	44.80 1	51.54 1
5	11.05	40.00	0.00	38.72 1	25.78 1	9.09 1	21.14 1	33.30 1	40.46 1	47.73 1
6	9.64	50.00	0.00	42.77 1	29.93 1	17.88 1	13.74 1	30.11 1	36.23 1	43.03 1
7	8.35	60.00	0.00	44.84 1	31.90 1	21.14 1	12.82 1	23.39 1	31.01 1	37.44 1
8	7.56	70.00	0.00	49.85 1	36.94 1	25.78 1	20.62 1	16.71 1	27.20 1	34.94 1
9	6.62	80.00	0.00	53.96 1	41.88 1	30.22 1	25.47 1	17.97 1	23.36 1	30.71 1
10	5.10	90.00	0.00	57.95 1	46.32 1	34.57 1	30.27 1	23.62 1	16.32 1	26.75 1
11	2.93	100.00	0.00	62.55 1	50.67 1	38.25 1	33.34 1	28.42 1	16.69 1	22.51 1
12	0.67	110.00	0.00	65.09 1	53.93 1	40.62 1	36.05 1	30.57 1	24.00 1	15.51 1

OUTPUT DATA BS 2118 onda P

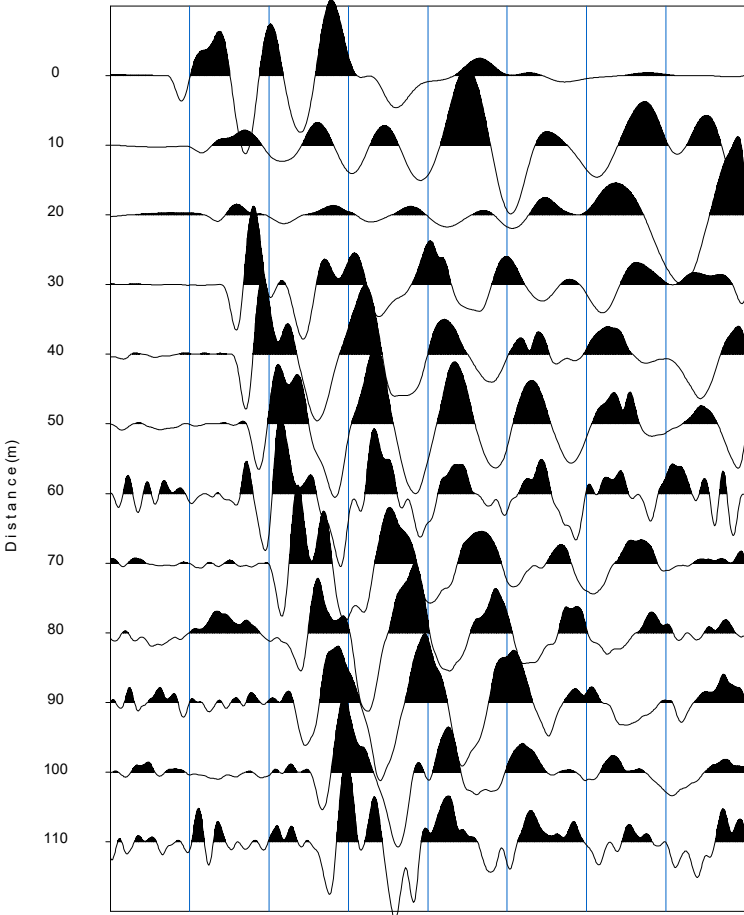
SP	X-loc	Layer 2	Layer 3
1	-5.00	2.25	5.50
2	15.00	1.90	6.31
3	35.00	1.64	6.39
4	55.00	1.87	5.41
5	75.00	1.77	6.00
6	95.00	1.67	5.93
7	115.00	0.00	4.12
Geo			
1	0.00	2.25	5.50
2	10.00	2.13	5.74
3	20.00	1.72	6.56
4	30.00	1.57	6.37
5	40.00	2.17	6.56
6	50.00	1.81	5.62
7	60.00	1.88	5.44
8	70.00	1.66	5.46
9	80.00	2.12	6.53
10	90.00	1.69	6.06
11	100.00	1.46	5.63
12	110.00	0.00	4.12



Source= -5.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

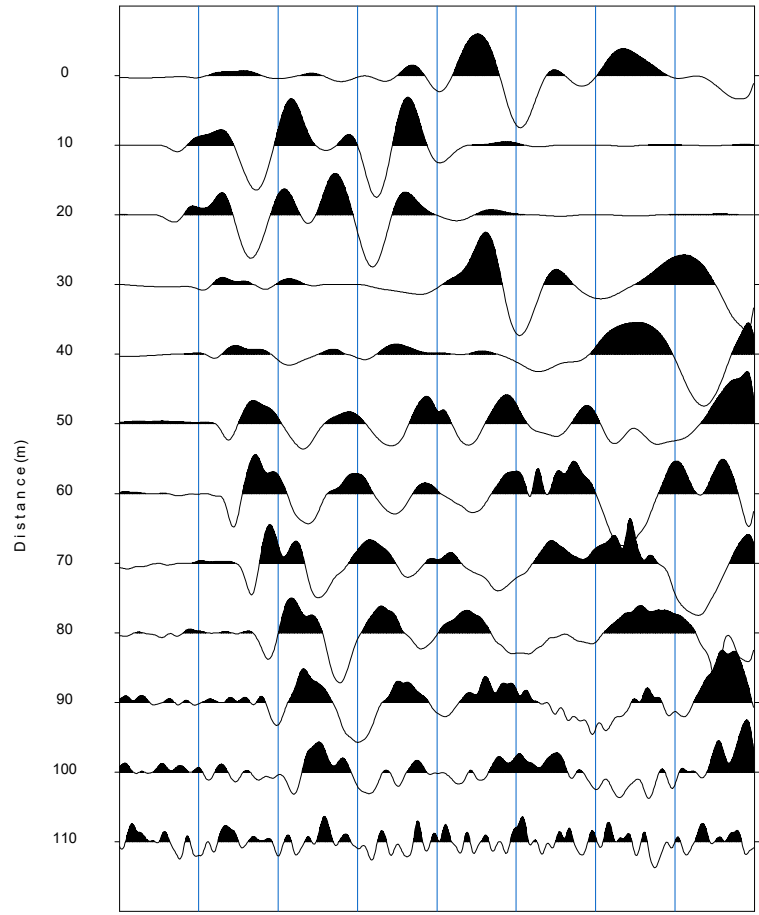


TIRO 1.dat

Source= 15.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

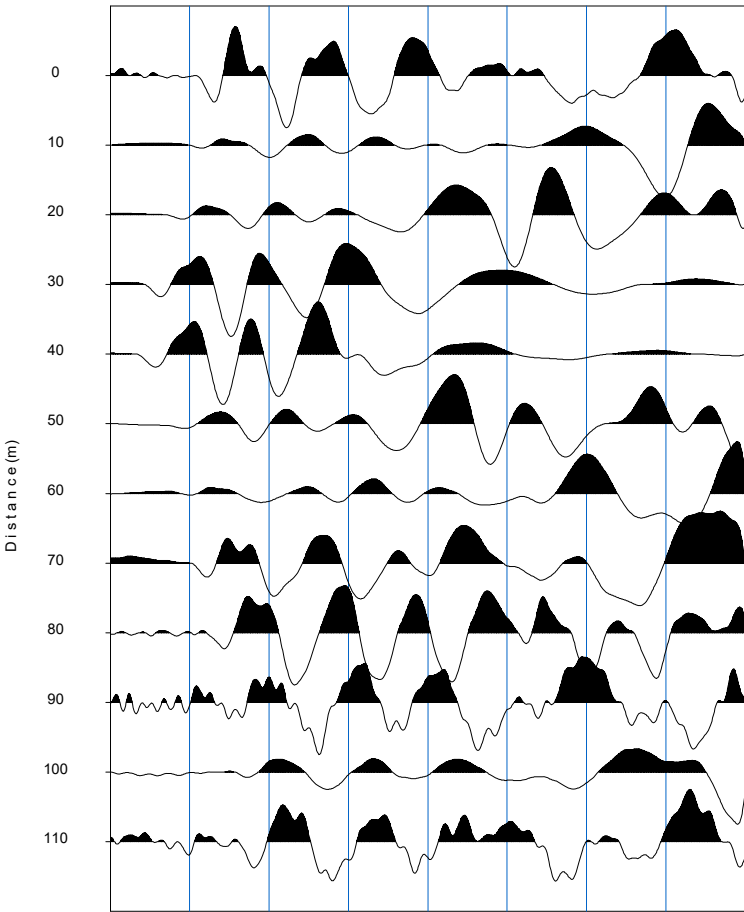


TIRO 2.dat

Source= 35.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

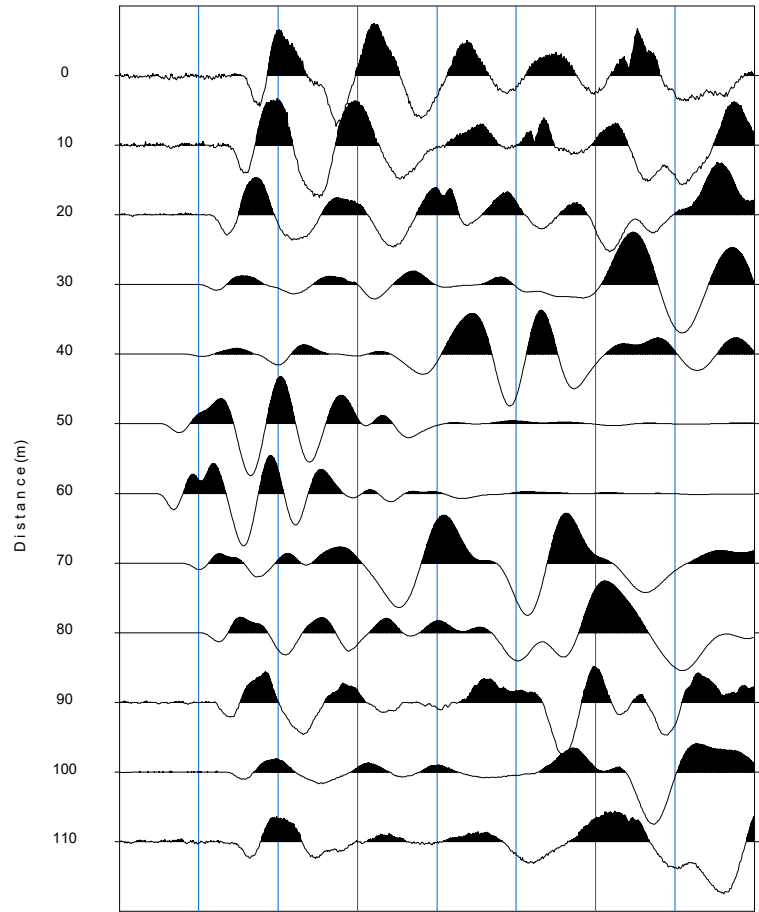


TIRO 3.dat

Source= 55.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

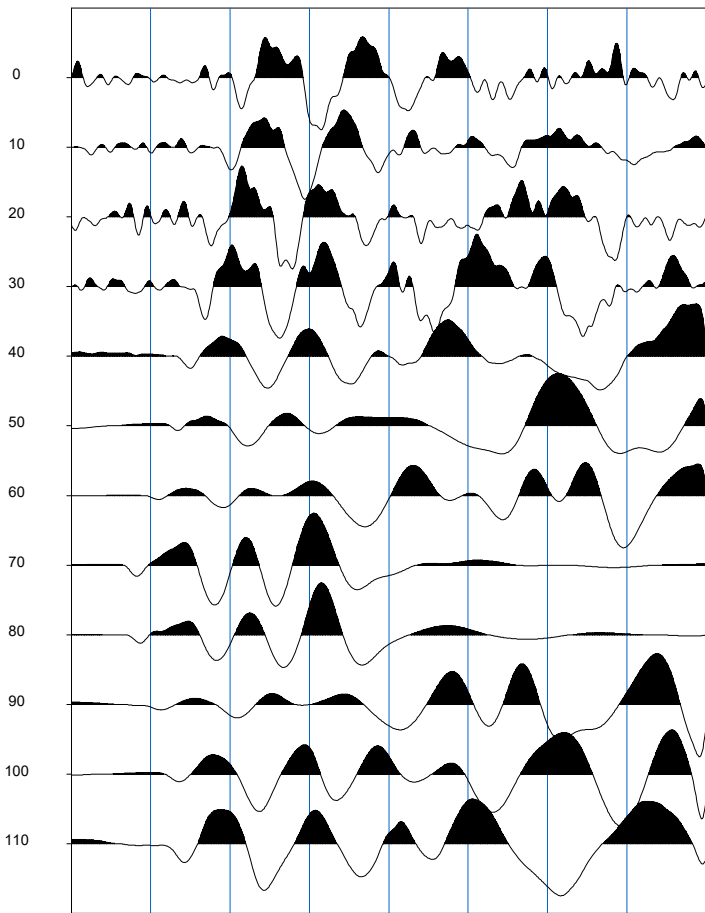


TIRO 4.dat

Source= 75.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

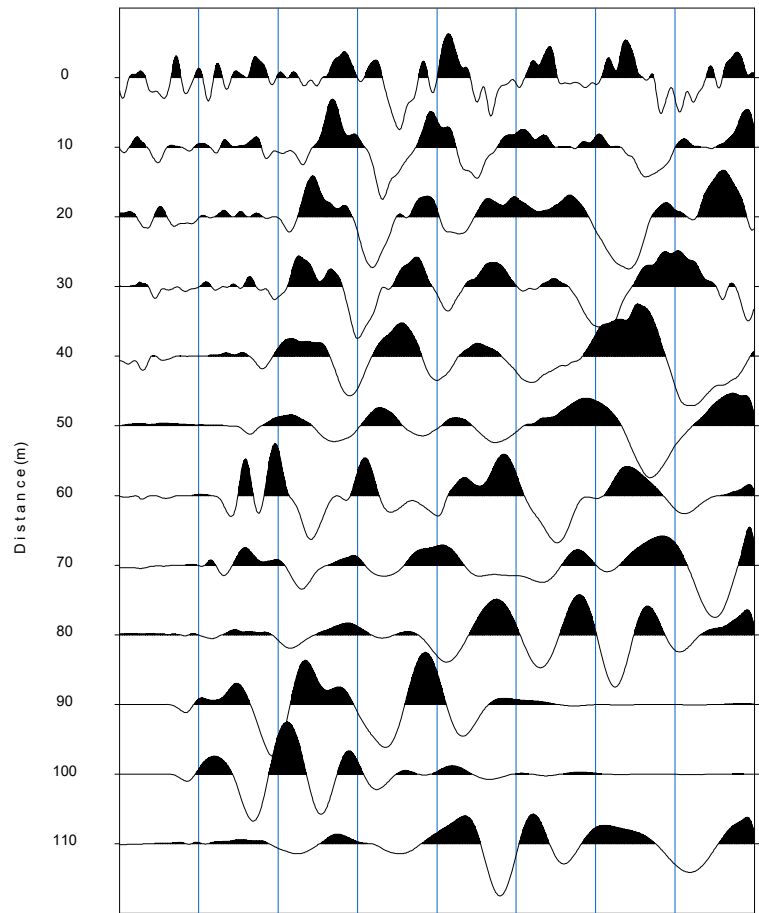


TIRO 5.dat

Source= 95.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

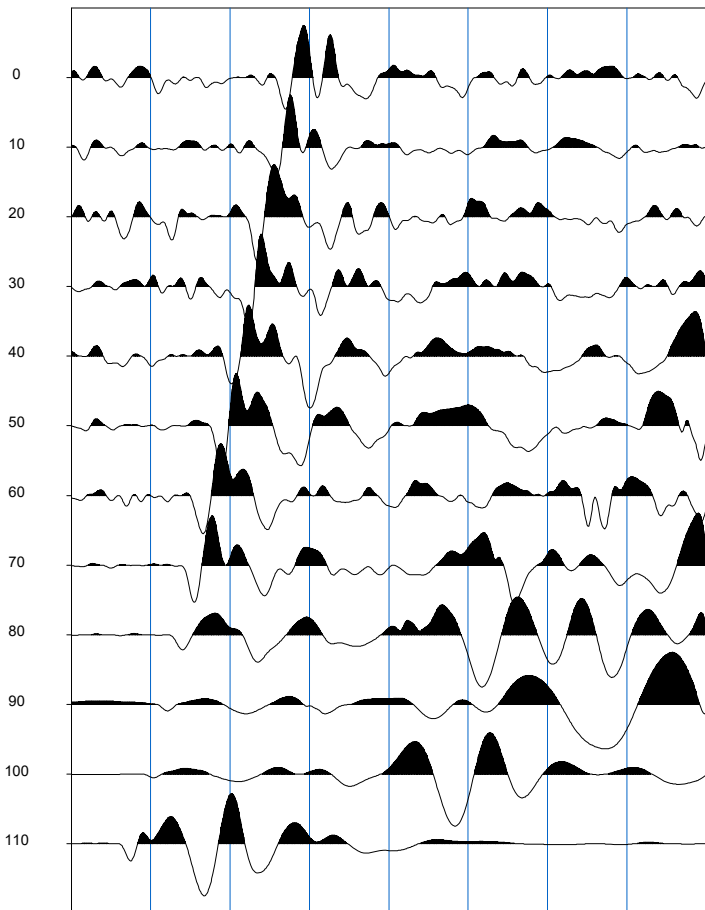


TIRO 6.dat

Source=115.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200



TIRO 7.dat

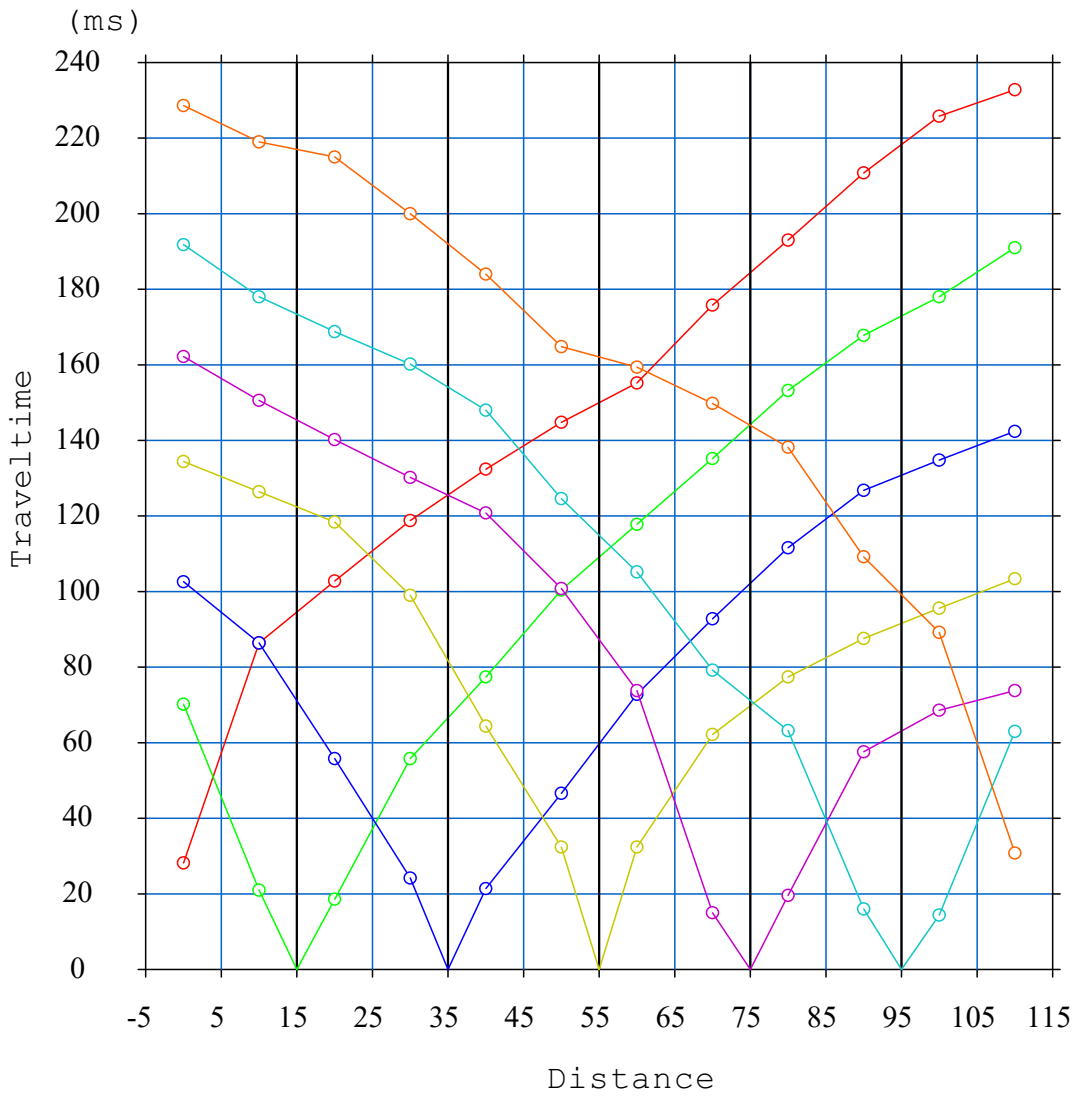
INPUT DATA BS 2118 onda SH

The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth							
1	16.80	-5.00	0.00	0							
2	14.30	15.00	0.00	0							
3	11.46	35.00	0.00	0							
4	8.95	55.00	0.00	0							
5	7.14	75.00	0.00	0							
6	4.03	95.00	0.00	0							
7	0.00	115.00	0.00	0							
Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7	
1	16.34	0.00	0.00	28.25 1	70.27 1	102.67 1	134.43 1	162.20 1	191.97 1	228.72 1	
2	15.15	10.00	0.00	86.57 1	21.06 1	86.57 1	126.55 1	150.66 1	178.00 1	219.16 1	
3	13.34	20.00	0.00	102.97 1	18.63 1	55.89 1	118.60 1	140.38 1	168.98 1	215.05 1	
4	12.20	30.00	0.00	118.92 1	55.89 1	24.30 1	99.02 1	130.21 1	160.35 1	200.02 1	
5	11.05	40.00	0.00	132.59 1	77.56 1	21.57 1	64.47 1	120.89 1	148.15 1	184.07 1	
6	9.64	50.00	0.00	144.89 1	100.44 1	46.78 1	32.50 1	100.84 1	124.67 1	164.94 1	
7	8.35	60.00	0.00	155.37 1	117.85 1	72.90 1	32.50 1	73.81 1	105.30 1	159.47 1	
8	7.56	70.00	0.00	175.87 1	135.27 1	92.95 1	62.27 1	15.11 1	79.28 1	149.90 1	
9	6.62	80.00	0.00	193.18 1	153.29 1	111.78 1	77.46 1	19.68 1	63.31 1	138.36 1	
10	5.10	90.00	0.00	210.95 1	168.00 1	126.97 1	87.72 1	57.61 1	16.08 1	109.35 1	
11	2.93	100.00	0.00	225.99 1	178.18 1	134.99 1	95.68 1	68.65 1	14.42 1	89.30 1	
12	0.67	110.00	0.00	232.82 1	191.16 1	142.53 1	103.58 1	73.81 1	63.18 1	30.98 1	

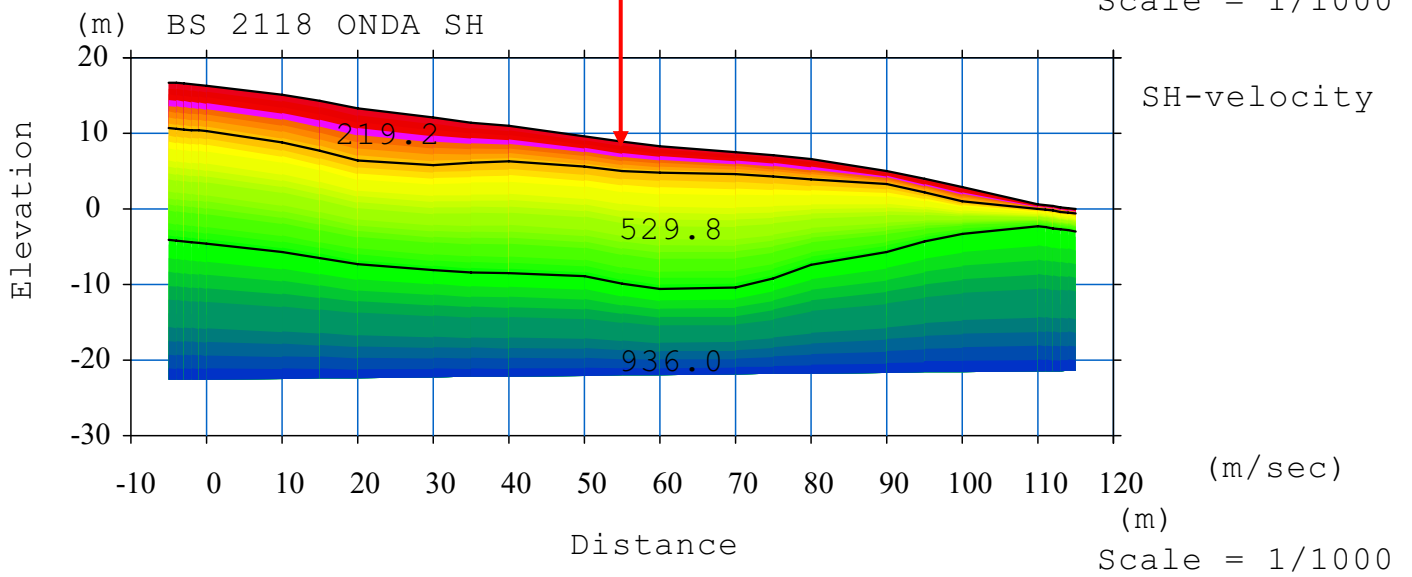
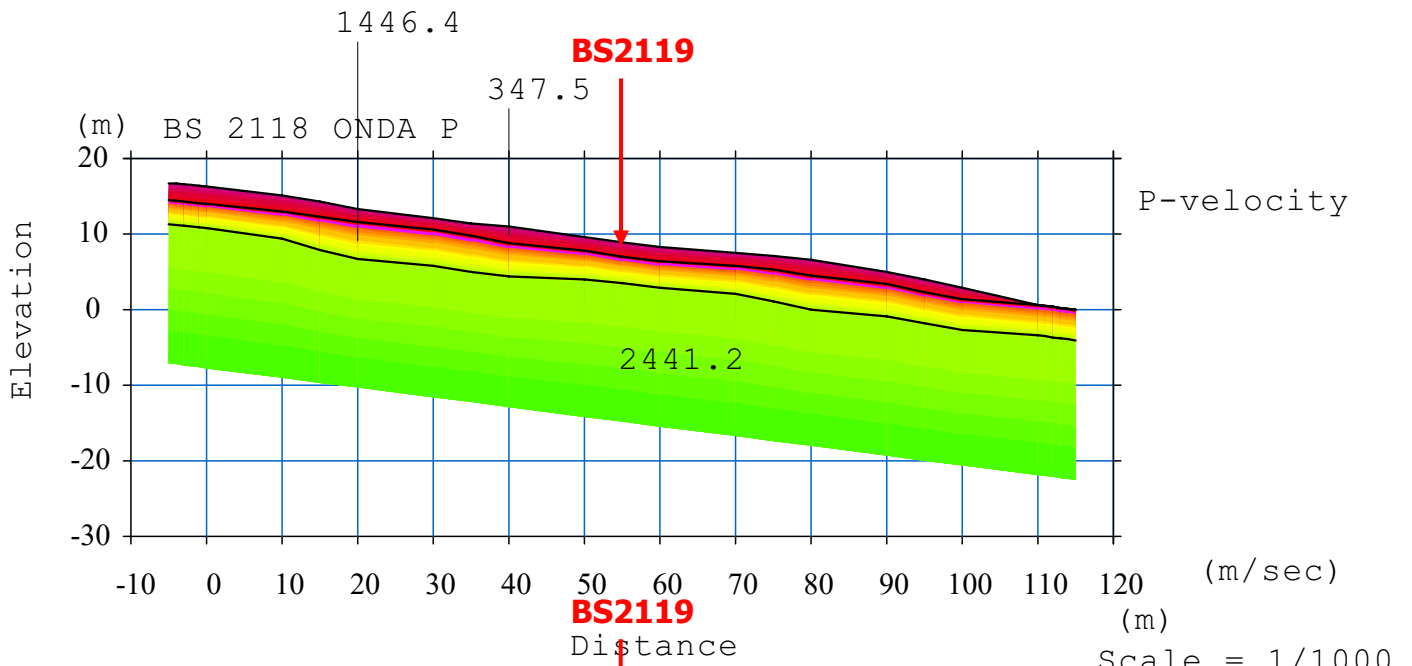
OUTPUT DATA BS 2118 onda SH

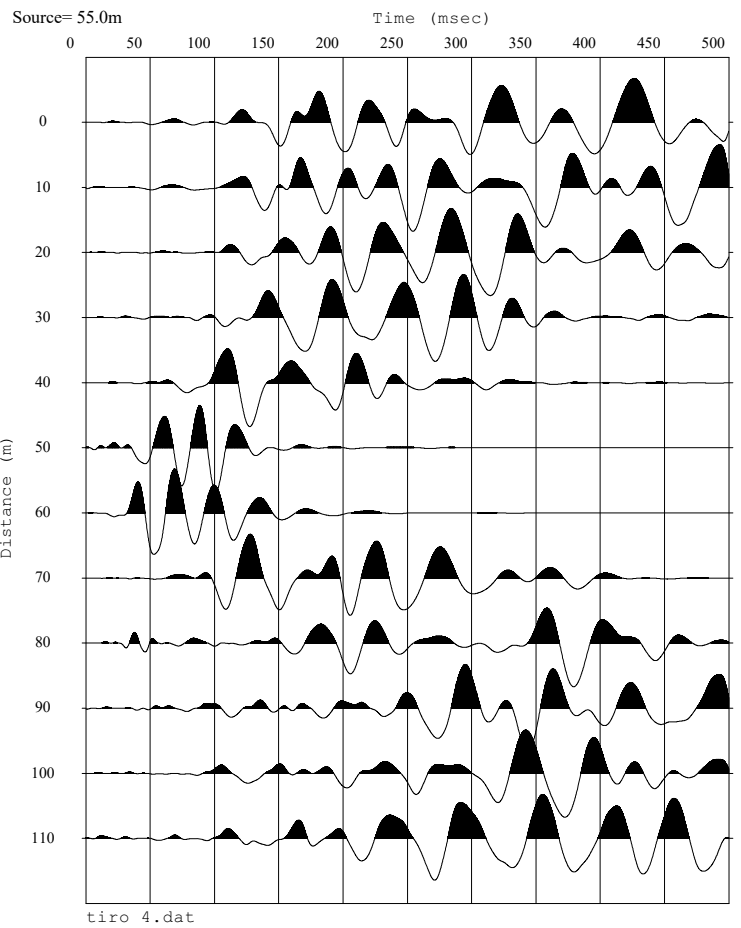
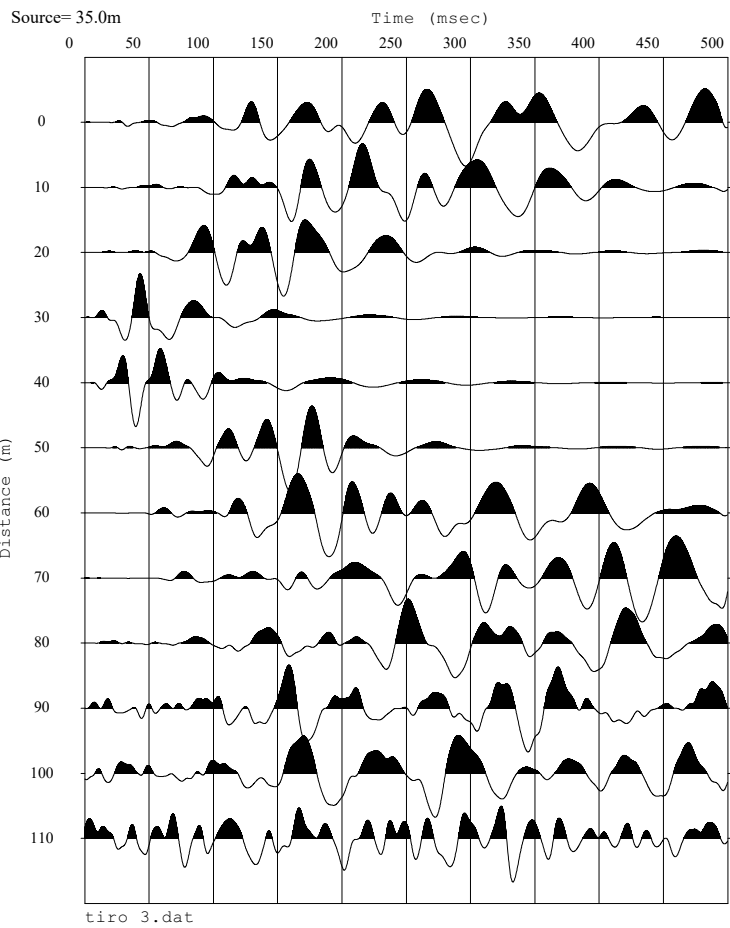
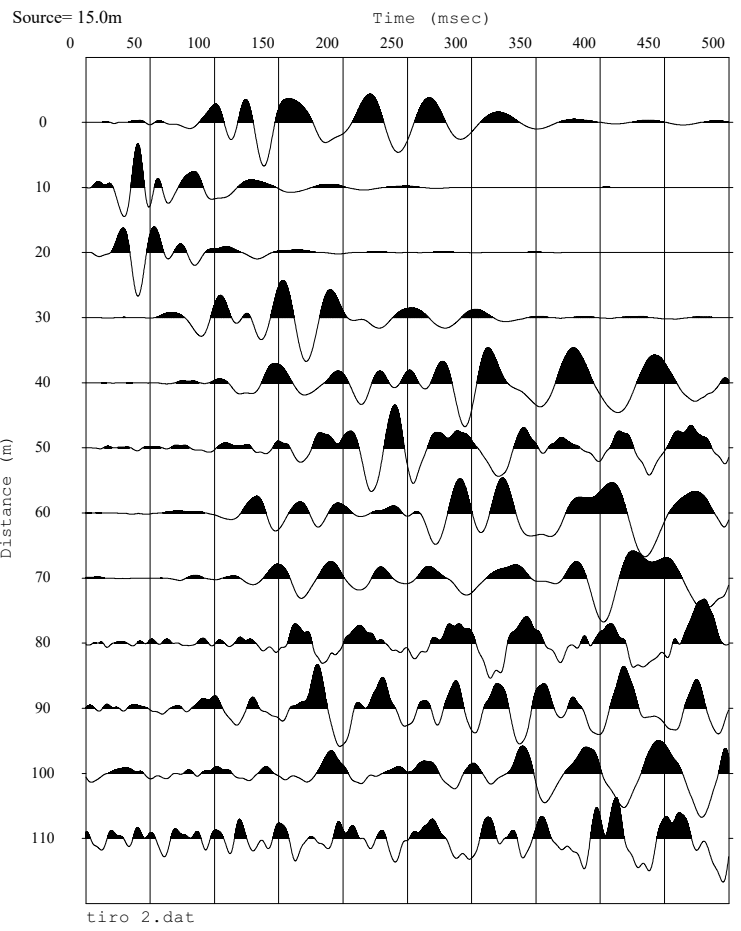
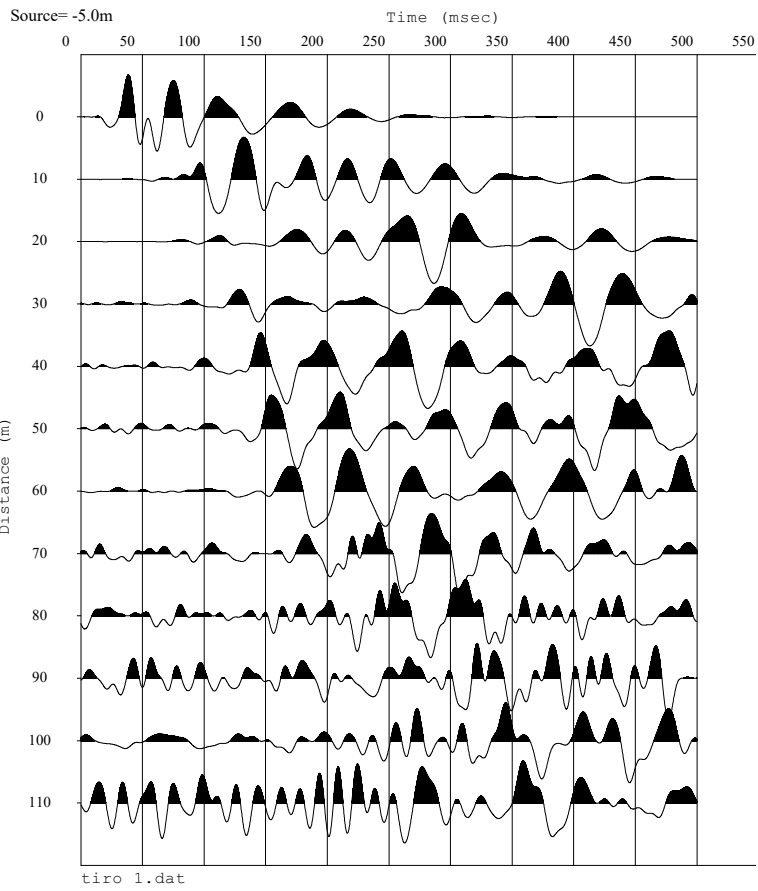
SP	X-loc	Layer 2	Layer 3
1	-5.00	6.03	21.00
2	15.00	6.57	20.90
3	35.00	5.32	19.93
4	55.00	3.93	18.86
5	75.00	2.81	16.38
6	95.00	1.75	8.41
7	115.00	0.70	3.02
Geo	X-loc	Layer 2	Layer 3
1	0.00	6.03	21.00
2	10.00	6.32	20.90
3	20.00	6.88	20.72
4	30.00	6.34	20.32
5	40.00	4.69	19.60
6	50.00	3.94	18.63
7	60.00	3.47	18.98
8	70.00	2.89	18.01
9	80.00	2.66	14.11
10	90.00	1.72	10.86
11	100.00	1.87	6.24
12	110.00	0.70	3.02



bs 2118 onda s.vs

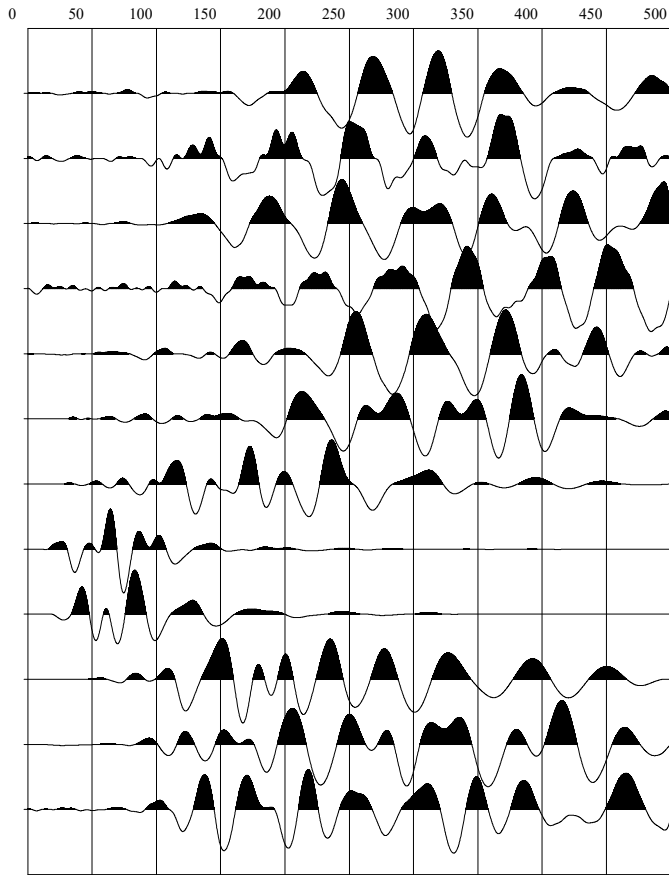
Scale = 1 / 1000





Source=75.0m

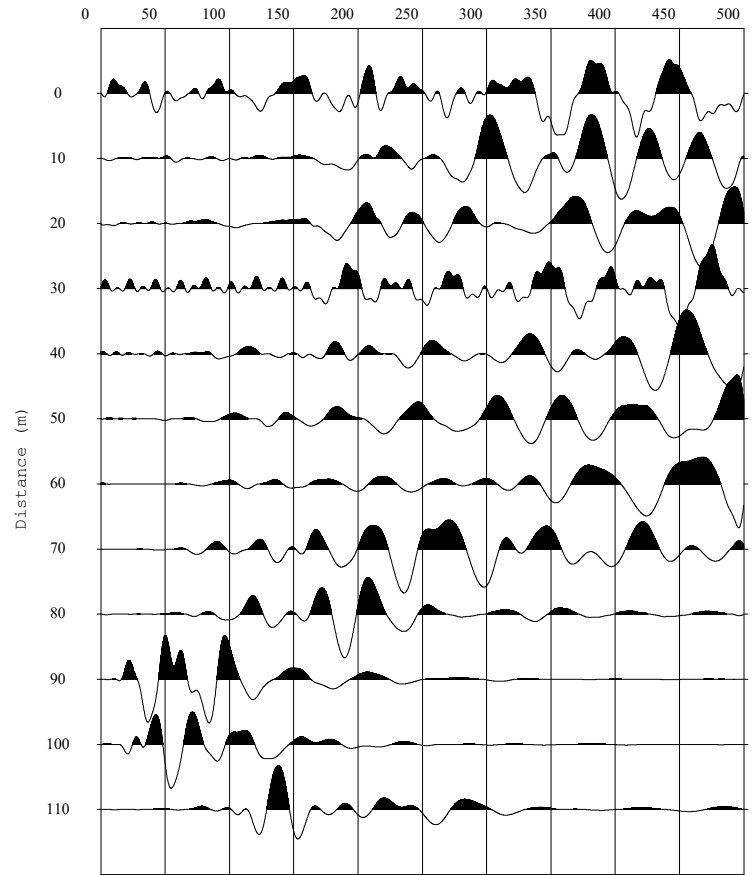
Time (msec)



tiro 5.dat

Source=95.0m

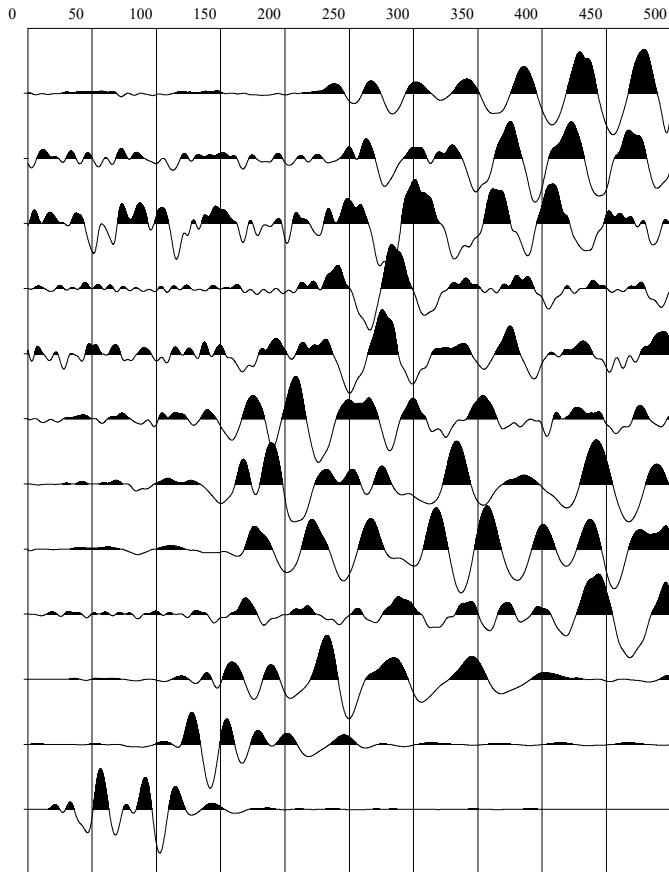
Time (msec)



tiro 6.dat

Source=115.0m

Time (msec)



tiro 7.dat

BASE SISMICA 2119



INPUT DATA BS 2119

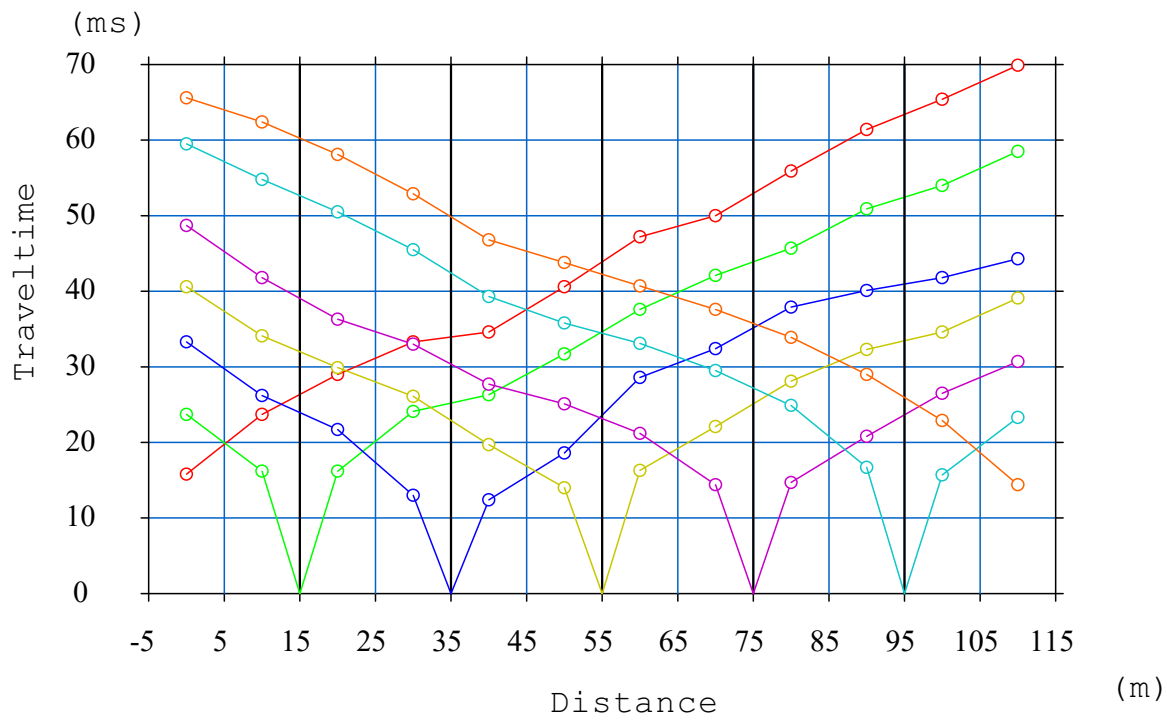
The spread contains 7 shotpoints and 12 geophones

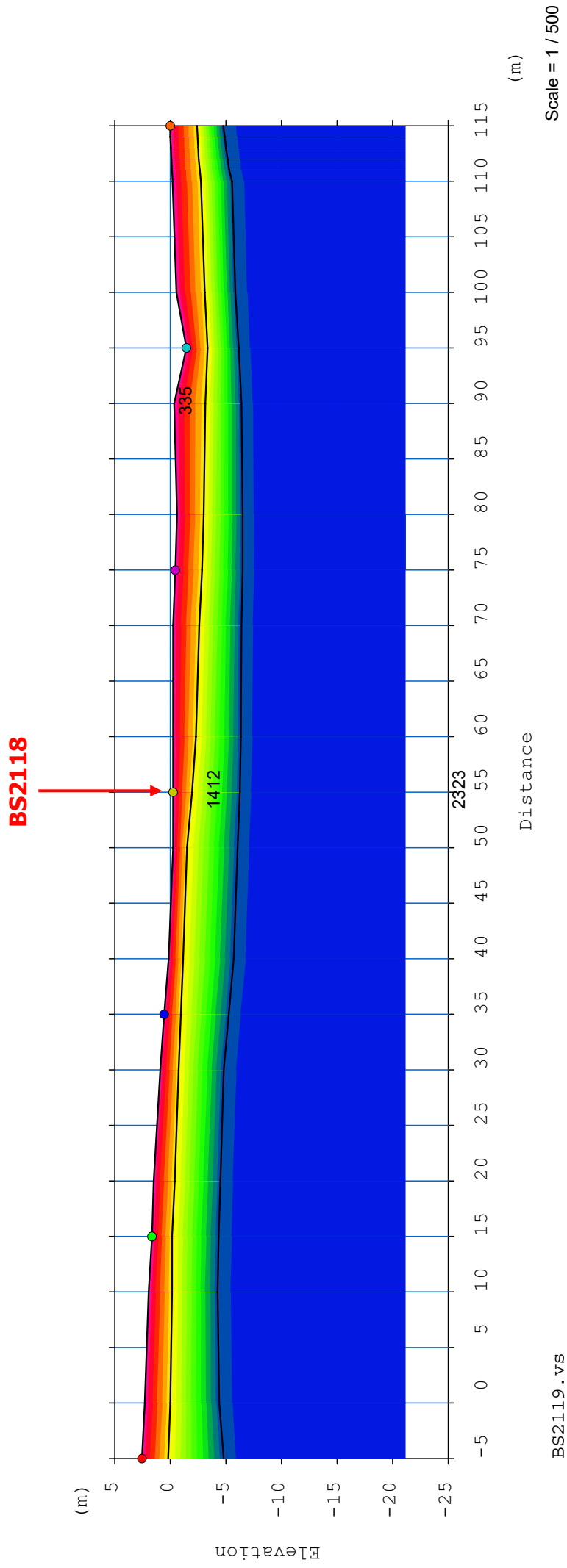
SP	Elev	X-loc	Y-Loc	Depth
1	2.57	-5.00	0	0
2	1.69	15.00	0	0
3	0.58	35.00	0	0
4	-0.25	55.00	0	0
5	-0.49	75.00	0	0
6	-1.49	95.00	0	0
7	0.00	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	2.34	0.00	0	15.85 1	23.70 1	33.31 1	40.66 1	48.78 1	59.59 1	65.68 1
2	1.97	10.00	0	23.70 1	16.30 1	26.28 1	34.17 1	41.85 1	54.86 1	62.45 1
3	1.50	20.00	0	29.04 1	16.30 1	21.78 1	29.99 1	36.32 1	50.54 1	58.17 1
4	0.92	30.00	0	33.33 1	24.15 1	13.00 1	26.14 1	33.06 1	45.57 1	53.00 1
5	0.18	40.00	0	34.67 1	26.37 1	12.45 1	19.70 1	27.74 1	39.30 1	46.87 1
6	-0.25	50.00	0	40.62 1	31.70 1	18.69 1	14.10 1	25.16 1	35.88 1	43.84 1
7	-0.25	60.00	0	47.23 1	37.63 1	28.62 1	16.34 1	21.29 1	33.16 1	40.74 1
8	-0.25	70.00	0	50.07 1	42.11 1	32.48 1	22.14 1	14.43 1	29.55 1	37.62 1
9	-0.64	80.00	0	55.97 1	45.78 1	37.93 1	28.10 1	14.77 1	24.96 1	33.93 1
10	-0.39	90.00	0	61.42 1	50.96 1	40.12 1	32.32 1	20.87 1	16.77 1	29.03 1
11	-0.58	100.00	0	65.46 1	54.07 1	41.81 1	34.67 1	26.50 1	15.78 1	22.99 1
12	-0.23	110.00	0	69.93 1	58.52 1	44.34 1	39.11 1	30.76 1	23.38 1	14.43 1

INPUT DATA BS 2119

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.37	7.37
2	15.00	1.87	6.06
3	35.00	1.55	5.84
4	55.00	1.72	6.01
5	75.00	2.39	6.02
6	95.00	1.89	4.67
7	115.00	2.41	4.8
Geo			
1	0.00	2.38	6.75
2	10.00	2.15	6.26
3	20.00	1.91	6.04
4	30.00	1.70	5.74
5	40.00	1.35	5.92
6	50.00	1.29	5.83
7	60.00	2.09	6.1
8	70.00	2.36	6.19
9	80.00	2.38	5.88
10	90.00	2.81	6.01
11	100.00	2.55	5.28
12	110.00	2.56	5.34



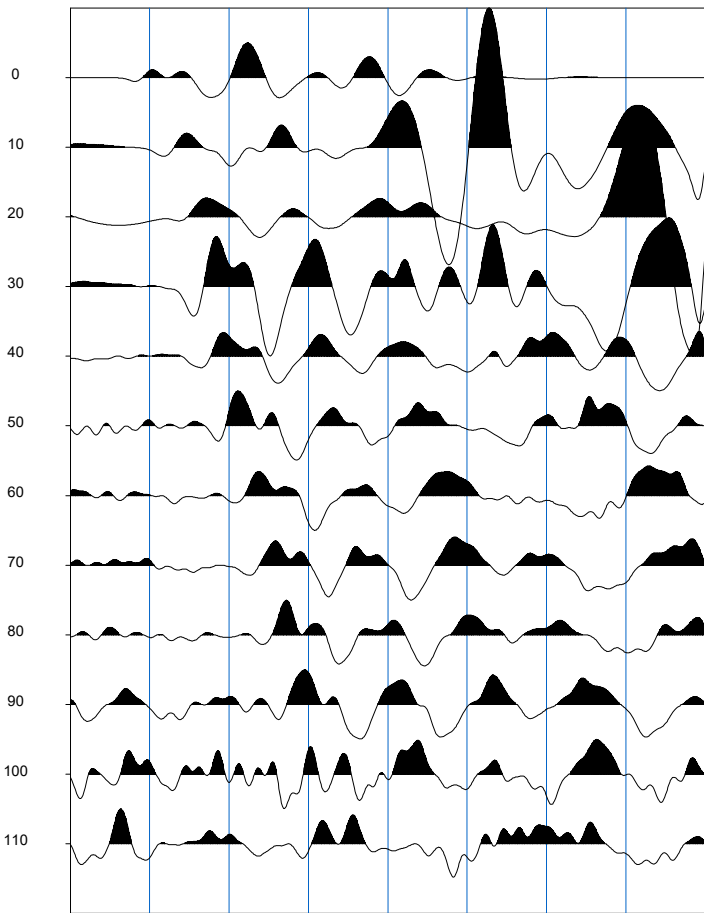


BS2119.VS

Source= -5.0m

Time (msec)

0 25 50 75 100 125 150 175 200

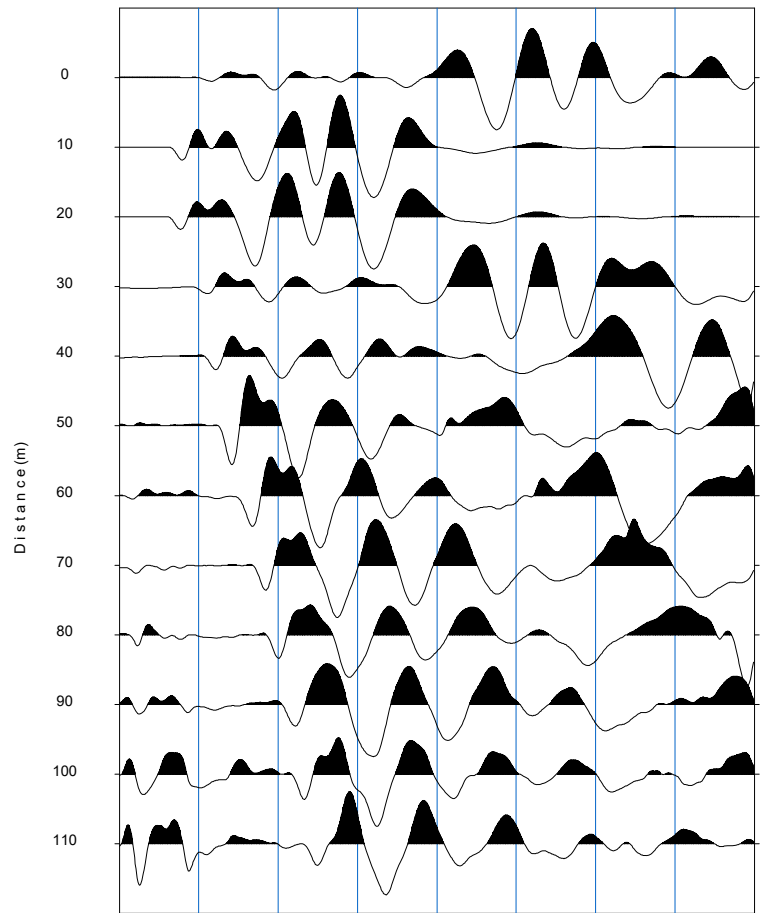


TIRO 1.dat

Source= 15.0m

Time (msec)

0 25 50 75 100 125 150 175 200

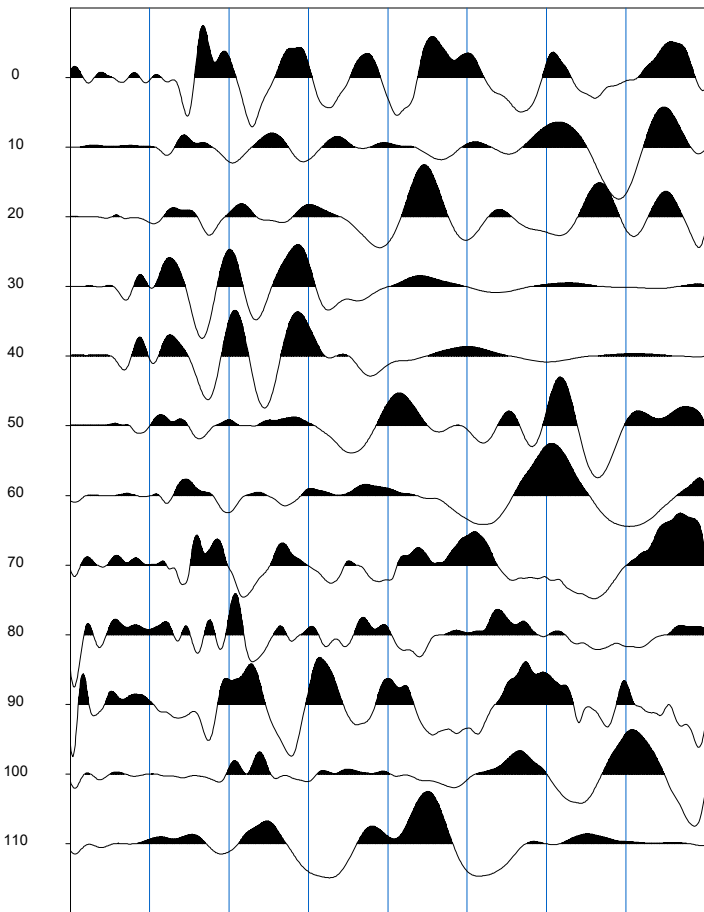


TIRO 2.dat

Source= 35.0m

Time (msec)

0 25 50 75 100 125 150 175 200

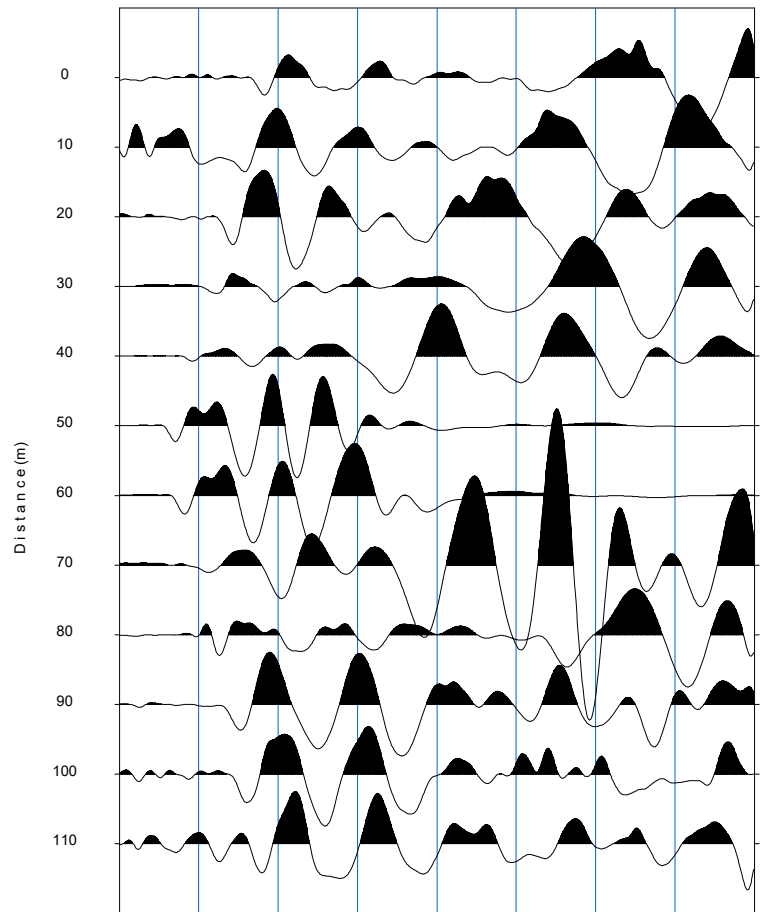


TIRO 3.dat

Source= 55.0m

Time (msec)

0 25 50 75 100 125 150 175 200

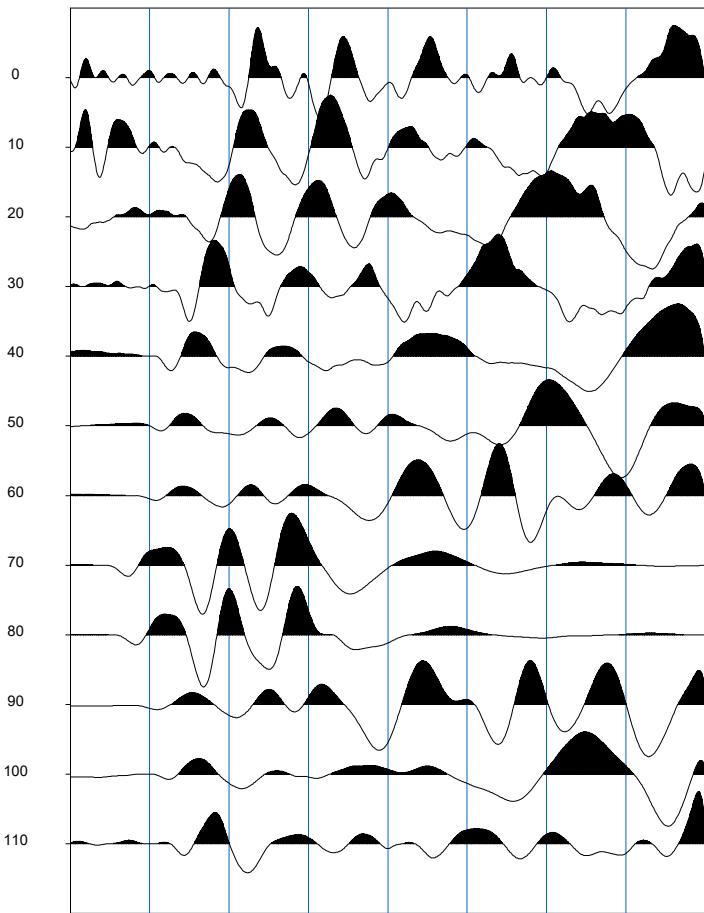


TIRO 4.dat

Source= 75.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

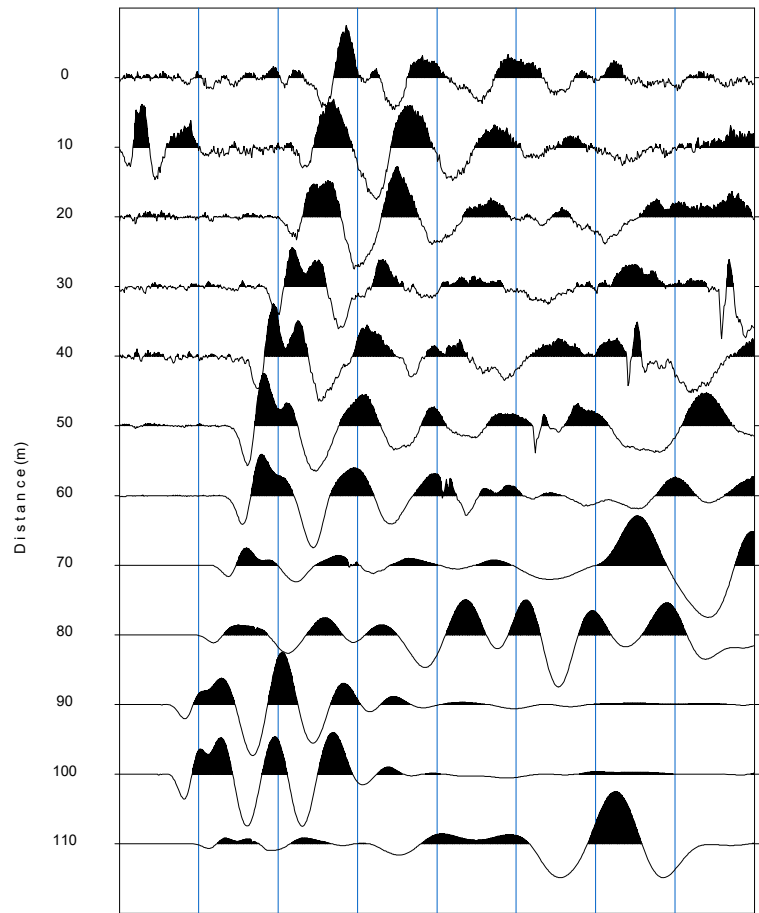


TIRO 5.dat

Source= 95.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200

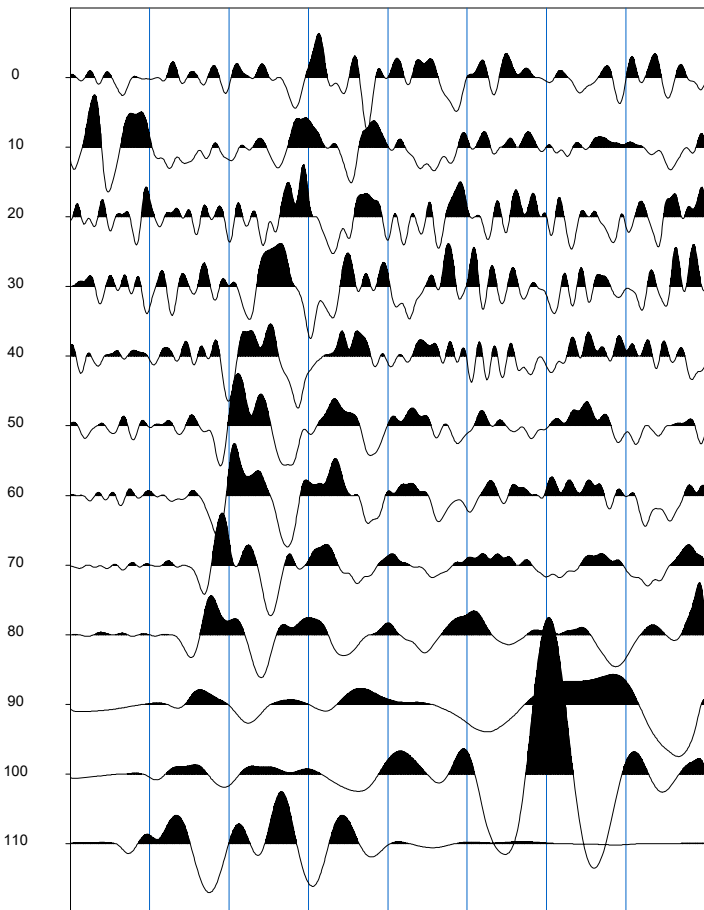


TIRO 6.dat

Source=115.0m

T i m e (msec)

0 25 50 75 100 125 150 175 200



TIRO 7.dat

BASE SISMICA 21 20-21



LINEA 2120



LINEA 2121

INPUT DATA BS 21 20-21

The spread contains 13 shotpoints and 24 geophones

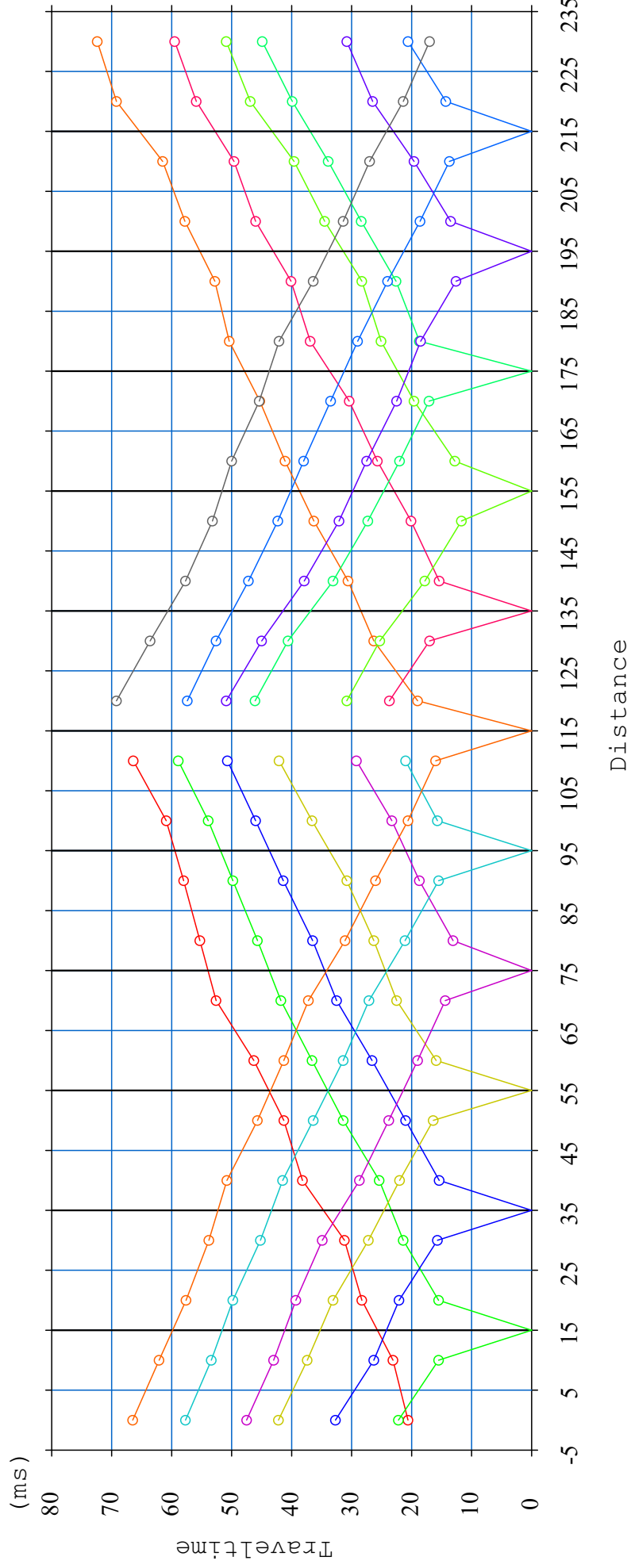
SP	Elev	X-loc	Y-Loc	Depth	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7	SP 8	SP 9	SP 10	SP 11	SP 12	SP 13
1	0.79	-5.00	0	0	20.67 1	22.22 1	32.78 1	42.23 1	47.50 1	57.77 1	66.57 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
2	2.40	15.00	0	0	23.11 1	15.51 1	26.34 1	37.41 1	43.04 1	53.41 1	62.19 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
3	4.77	35.00	0	0	28.36 1	15.51 1	22.14 1	33.18 1	39.32 1	49.88 1	57.68 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
4	7.79	55.00	0	0	31.27 1	21.43 1	15.71 1	27.20 1	34.93 1	45.29 1	53.86 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
5	10.35	75.00	0	0	38.21 1	25.48 1	15.48 1	22.04 1	28.72 1	41.55 1	50.84 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
6	11.84	95.00	0	0	41.36 1	31.41 1	21.04 1	16.49 1	23.86 1	36.48 1	45.73 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
7	14.57	115.00	0	0	46.32 1	36.64 1	26.60 1	15.91 1	19.05 1	31.48 1	41.35 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
8	16.59	135.00	0	0	52.61 1	41.88 1	32.57 1	22.56 1	14.41 1	27.17 1	37.28 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
9	18.39	155.00	0	0	55.33 1	45.73 1	36.58 1	26.31 1	13.14 1	21.14 1	31.10 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
10	22.11	175.00	0	0	58.07 1	49.88 1	41.45 1	30.82 1	18.77 1	15.51 1	26.09 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
11	23.66	195.00	0	0	60.99 1	53.93 1	46.06 1	36.64 1	23.31 1	15.79 1	20.63 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
12	25.52	215.00	0	0	66.41 1	58.96 1	50.71 1	42.17 1	29.26 1	21.07 1	16.00 1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1
13	27.58	235.00	0	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	19.06 1	23.70 1	30.81 1	46.18 1	50.96 1	57.48 1	69.20 1
14	16.12	130.00	0	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	26.37 1	17.01 1	25.39 1	40.63 1	45.07 1	52.68 1	63.68 1

15	17.08	140.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	30.63 1	15.46 1	17.89 1	33.13 1	37.94 1	47.22 1	57.72 1
16	17.95	150.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	36.39 1	20.14 1	11.75 1	27.37 1	32.16 1	42.34 1	53.23 1
17	19.01	160.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	41.18 1	25.74 1	12.84 1	22.07 1	27.56 1	38.04 1	50.03 1
18	21.96	170.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	45.32 1	30.47 1	19.65 1	17.17 1	22.57 1	33.54 1	45.47 1
19	22.45	180.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	50.44 1	36.90 1	25.19 1	18.78 1	18.57 1	29.05 1	42.16 1
20	23.29	190.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	52.81 1	40.20 1	28.38 1	22.65 1	12.64 1	24.08 1	36.43 1
21	23.97	200.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	57.90 1	46.01 1	34.51 1	28.44 1	13.54 1	18.70 1	31.41 1
22	25.14	210.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	61.57 1	49.65 1	39.65 1	33.91 1	19.63 1	13.73 1	27.05 1
23	26.26	220.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	69.20 1	55.99 1	46.91 1	39.93 1	26.52 1	14.36 1	21.40 1
24	27.16	230.00	0	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	0.00 -1	72.48 1	59.54 1	50.96 1	44.93 1	30.81 1	20.64 1	17.03 1

OUTPUT DATA BS 21 20-21

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.92	9.53
2	15.00	2.37	11.00
3	35.00	2.23	12.65
4	55.00	2.39	9.85
5	75.00	2.63	5.83
6	95.00	2.01	6.30
7	115.00	3.20	9.66
8	135.00	3.66	11.11
9	155.00	3.22	11.34
10	175.00	3.56	12.66
11	195.00	3.32	12.19
12	215.00	3.56	12.37
13	235.00	3.79	12.67
Geo			
1	0.00	2.22	9.26
2	10.00	2.52	10.42
3	20.00	2.05	11.63
4	30.00	2.61	12.98
5	40.00	2.24	12.37

6	50.00	2.33	11.53
7	60.00	2.21	7.84
8	70.00	2.81	6.96
9	80.00	2.20	5.30
10	90.00	2.18	5.77
11	100.00	1.82	7.05
12	110.00	2.34	8.43
13	120.00	3.59	10.32
14	130.00	3.91	11.02
15	140.00	3.28	11.13
16	150.00	3.36	11.49
17	160.00	2.66	11.22
18	170.00	4.17	13.33
19	180.00	3.27	12.26
20	190.00	3.41	12.44
21	200.00	3.06	11.91
22	210.00	3.60	12.52
23	220.00	3.72	12.65
24	230.00	4.07	13.19



bs21-2021 - ONDA P.vs

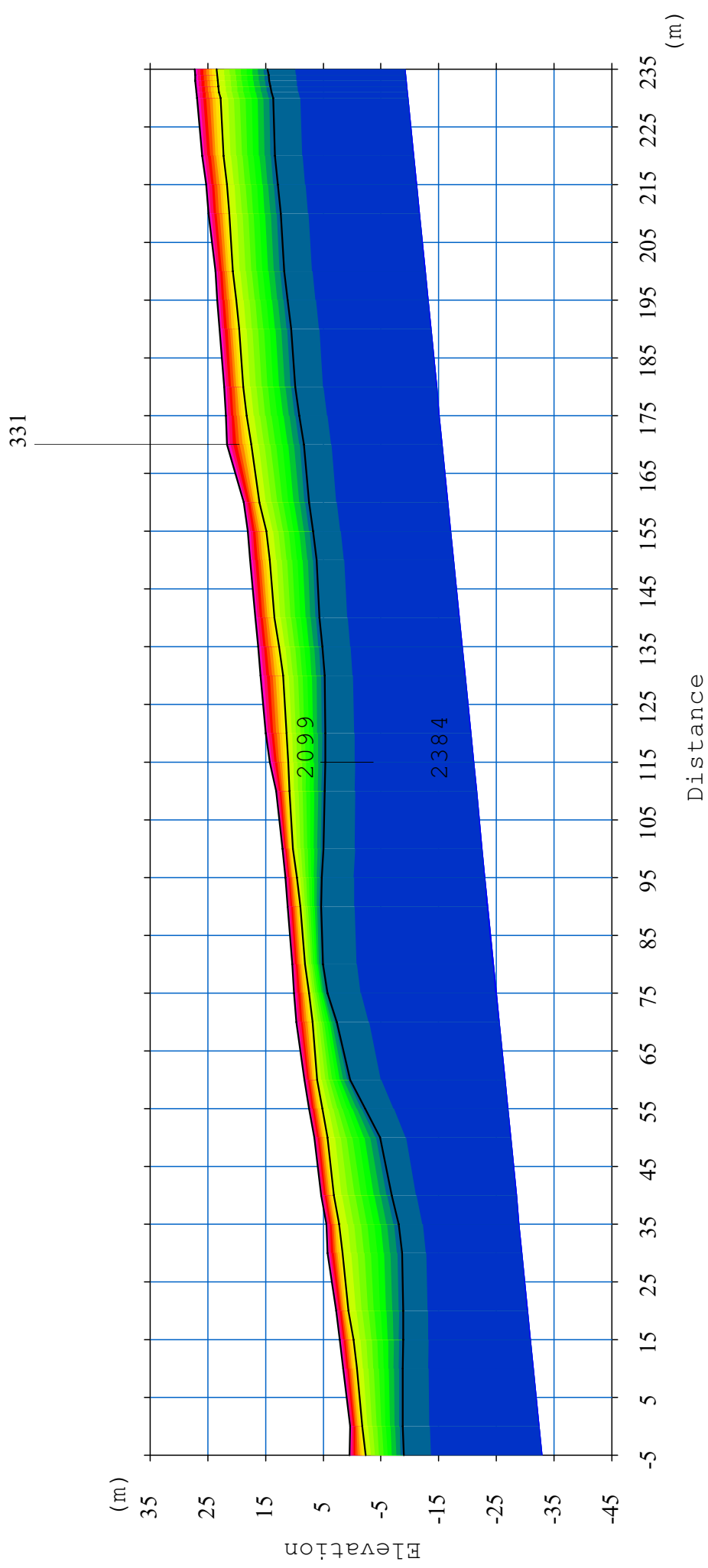
Scale = 1 / 1000

Distance

(m)

(ms)

Traveltime



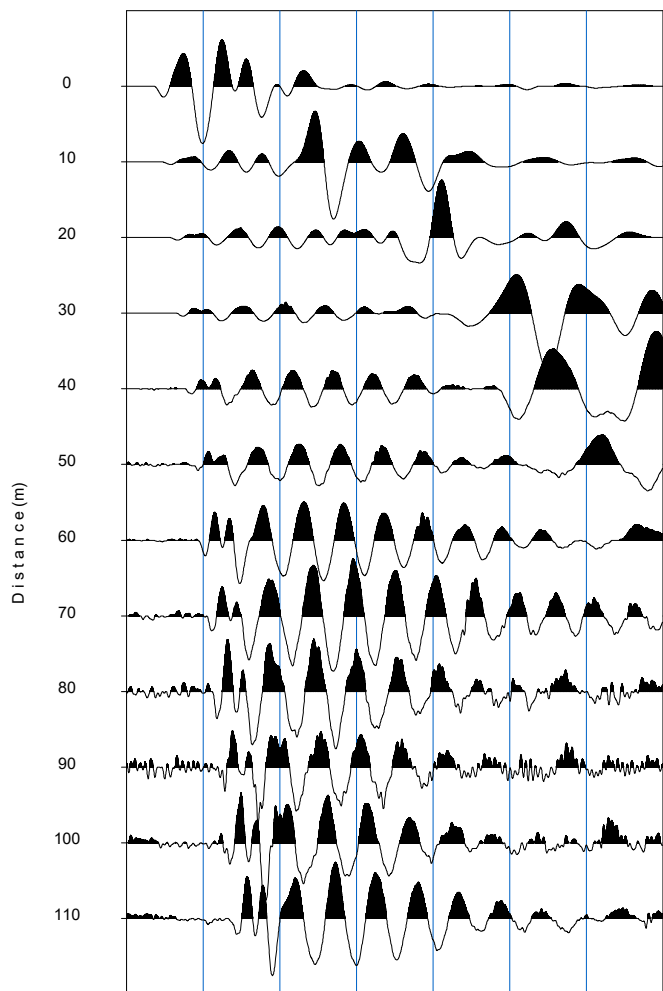
bs21-2021 - ONDA P.VS

Scale = 1 / 1000

Source= -5.0m

Time (msec)

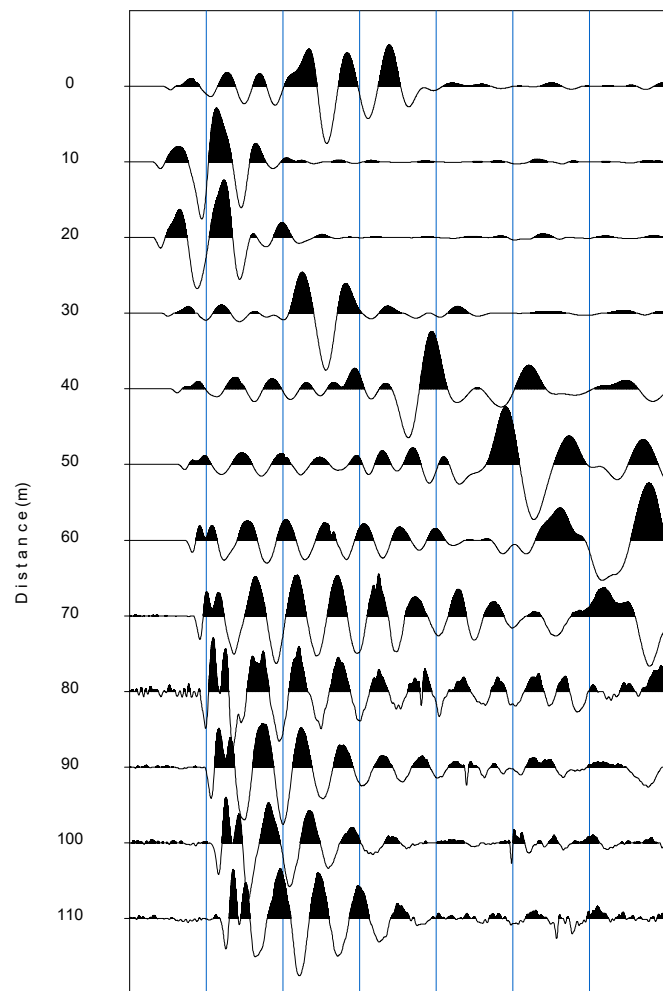
0 50 100 150 200 250 300 350



Source= 15.0m

Time (msec)

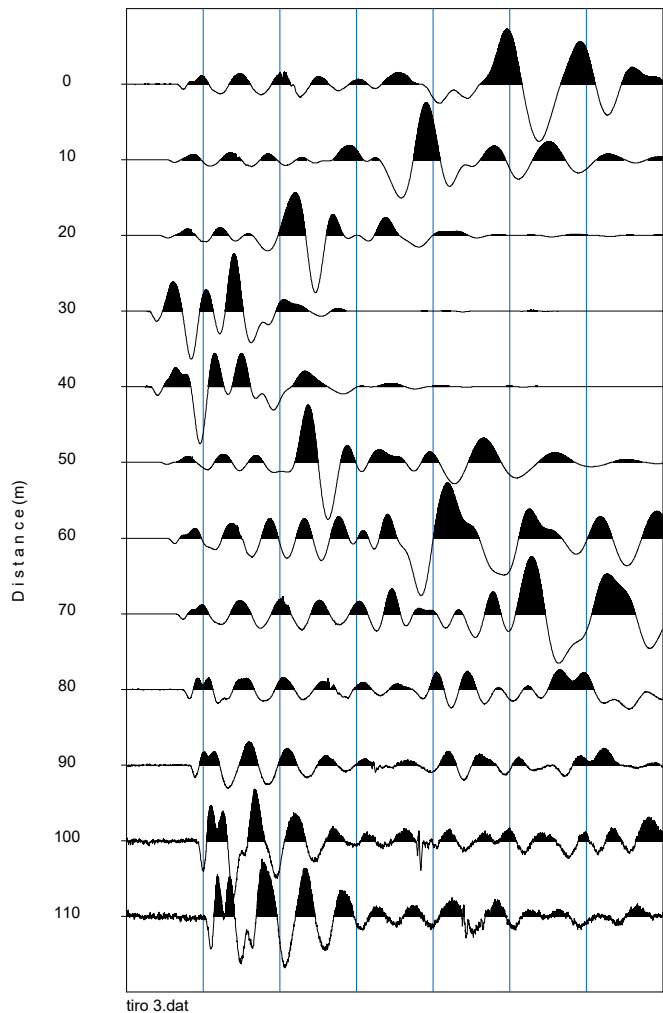
0 50 100 150 200 250 300 350



Source= 35.0m

Time (msec)

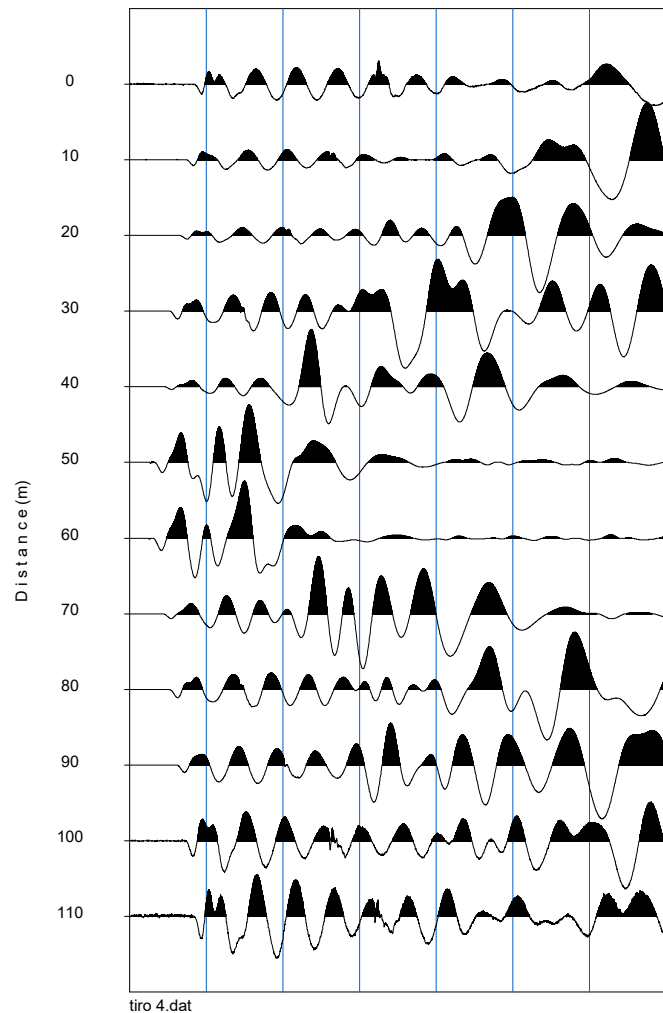
0 50 100 150 200 250 300 350



Source= 55.0m

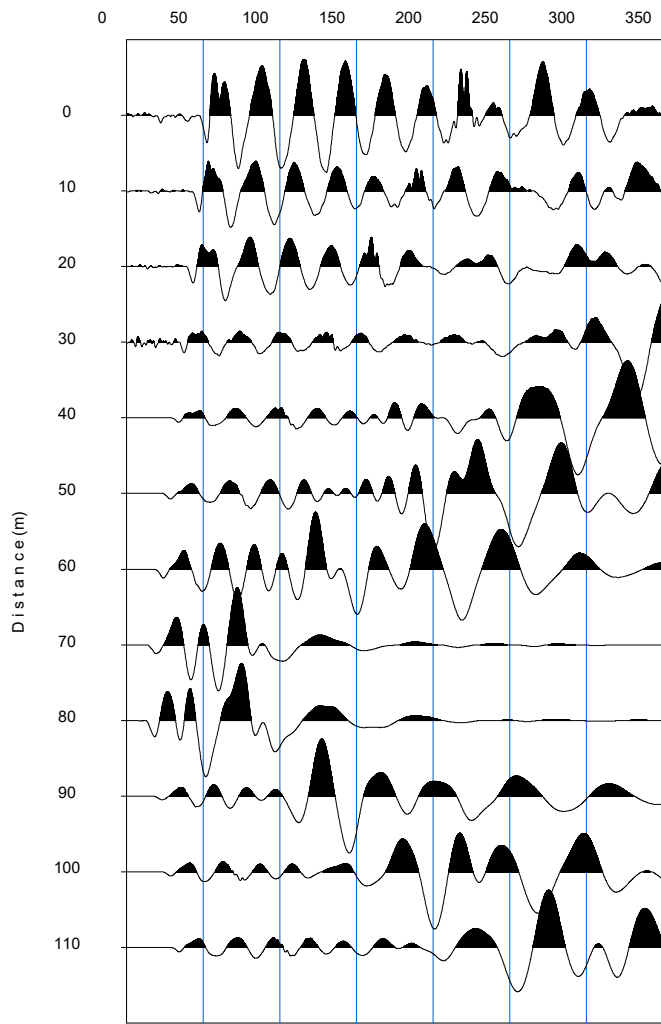
Time (msec)

0 50 100 150 200 250 300 350



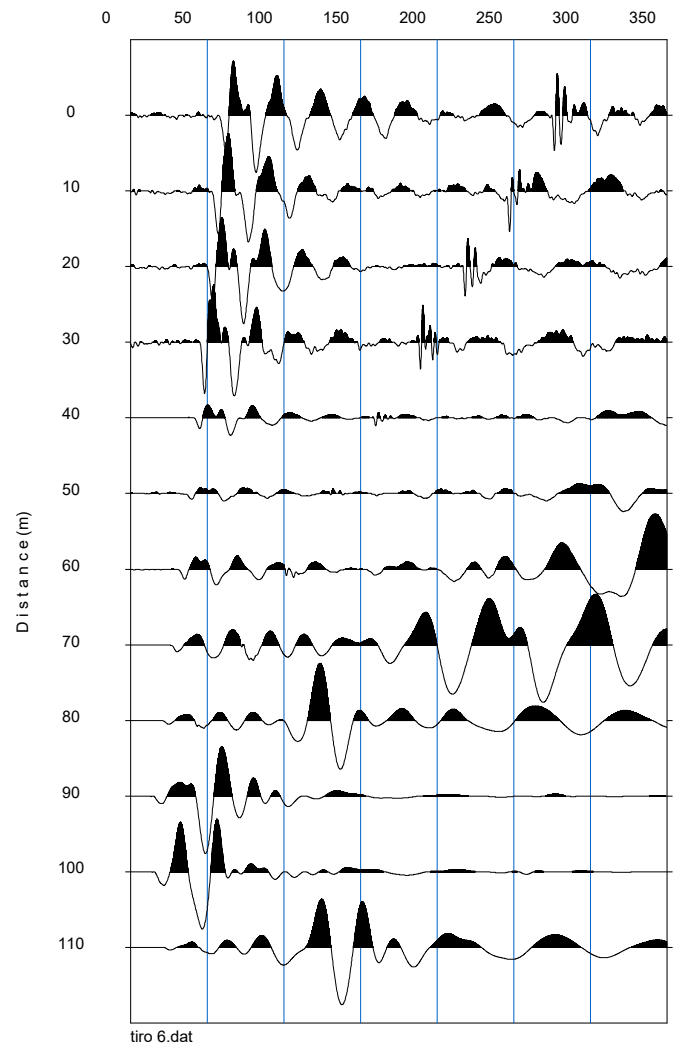
Source= 75.0m

Time (msec)



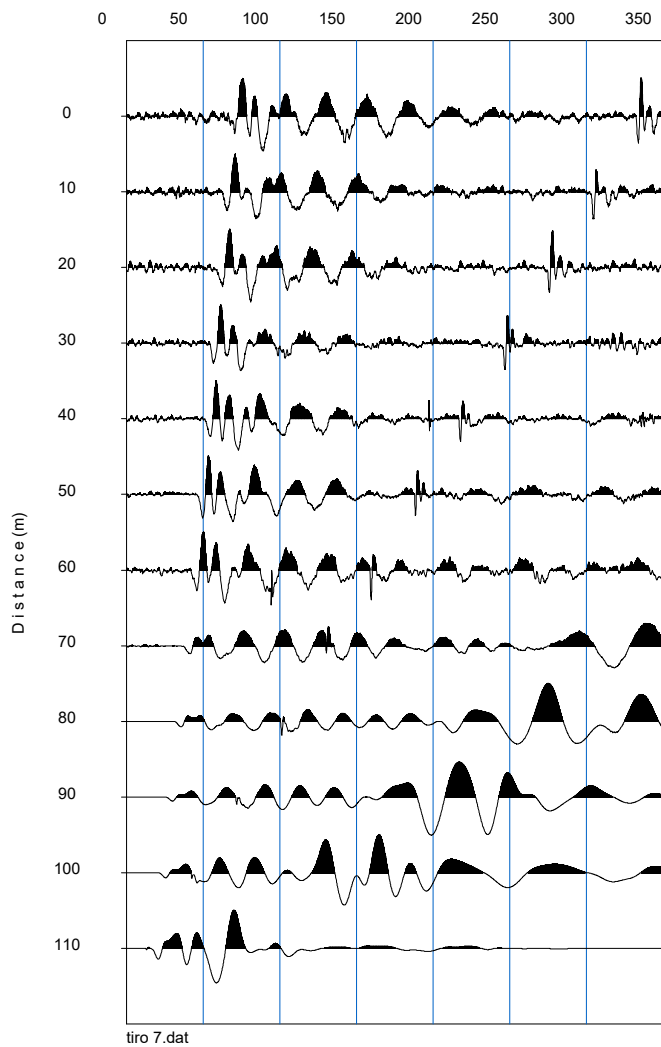
Source= 95.0m

Time (msec)



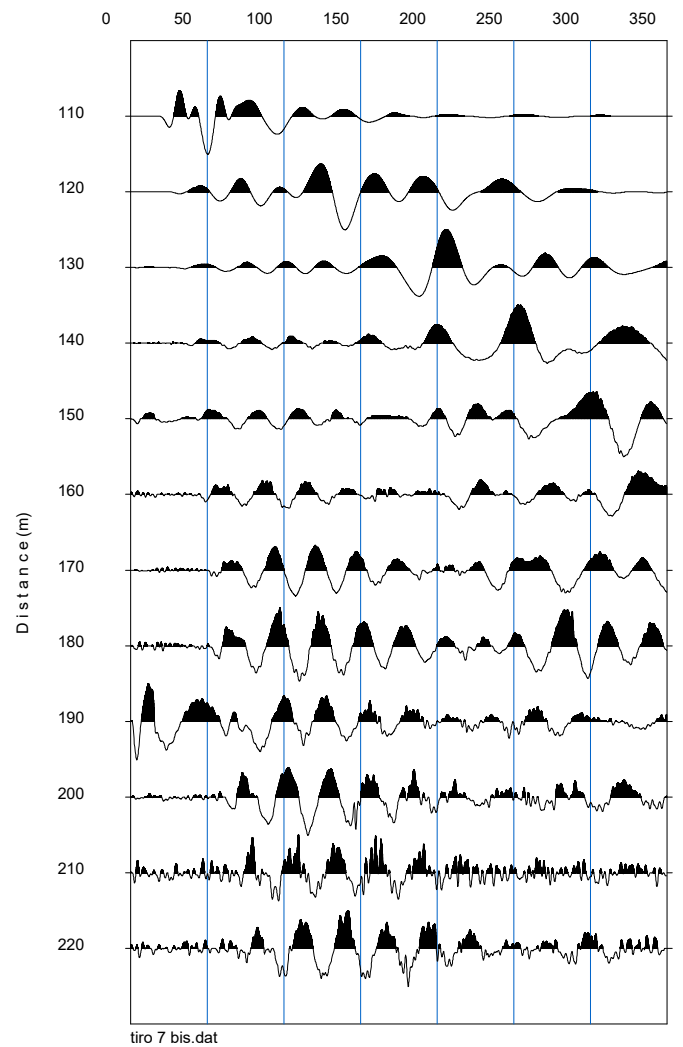
Source=115.0m

Time (msec)



Source=115.0m

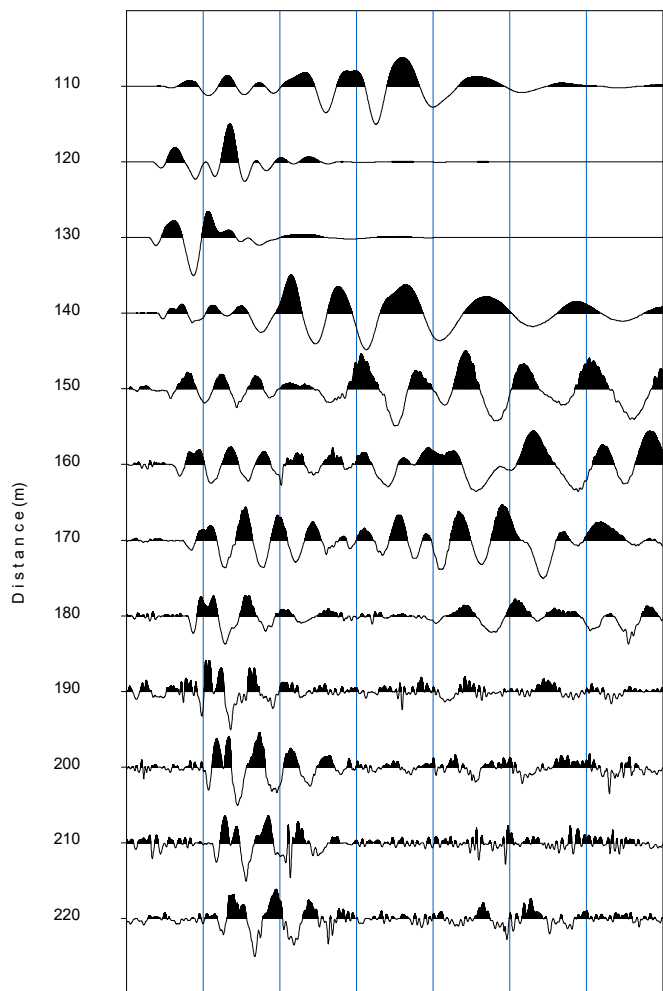
Time (msec)



Source=135.0m

Time (msec)

0 50 100 150 200 250 300 350

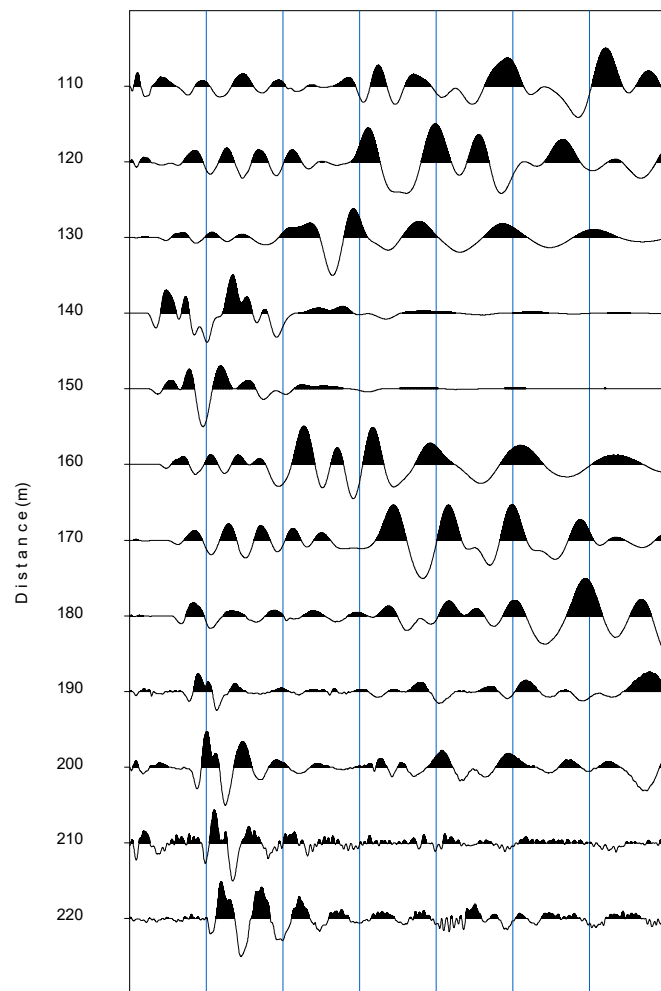


tiro 8.dat

Source=155.0m

Time (msec)

0 50 100 150 200 250 300 350

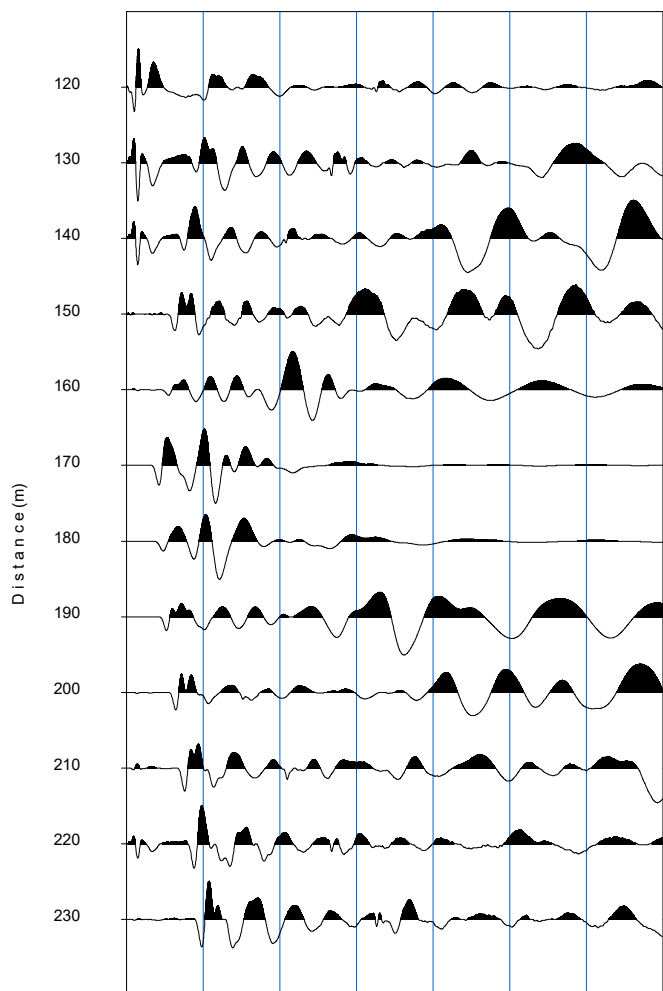


tiro 9.dat

Source=175.0m

Time (msec)

0 50 100 150 200 250 300 350

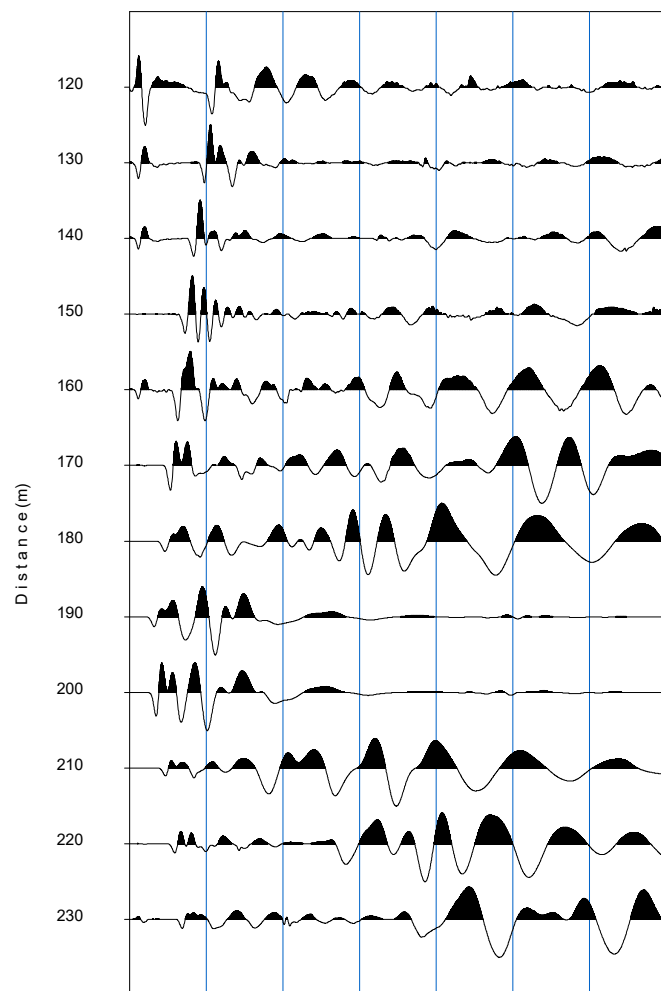


tiro 10.dat

Source=195.0m

Time (msec)

0 50 100 150 200 250 300 350

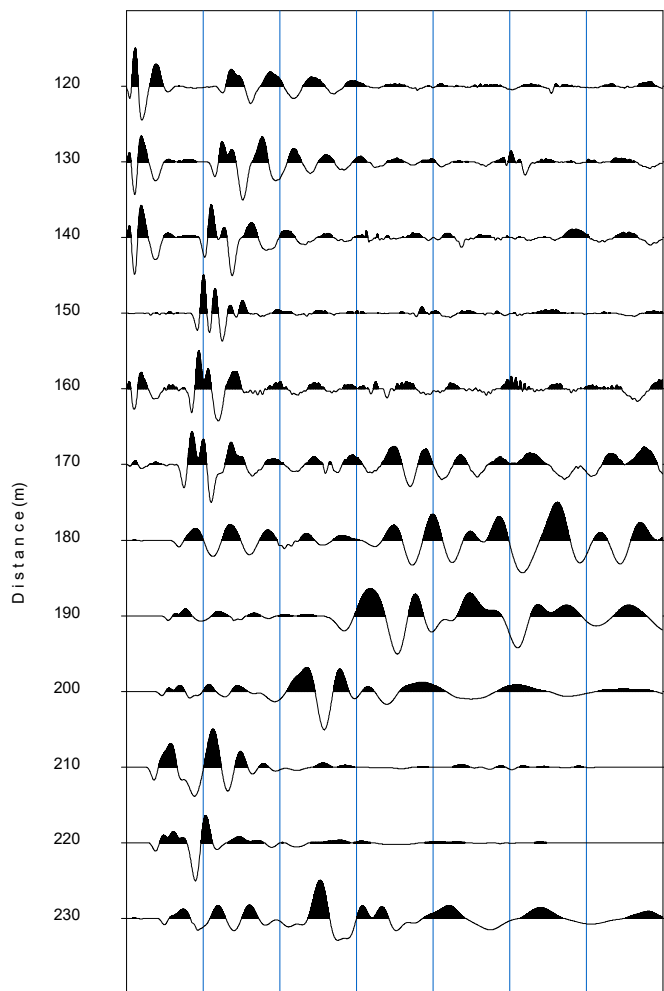


tiro 11.dat

Source=215.0m

Time (msec)

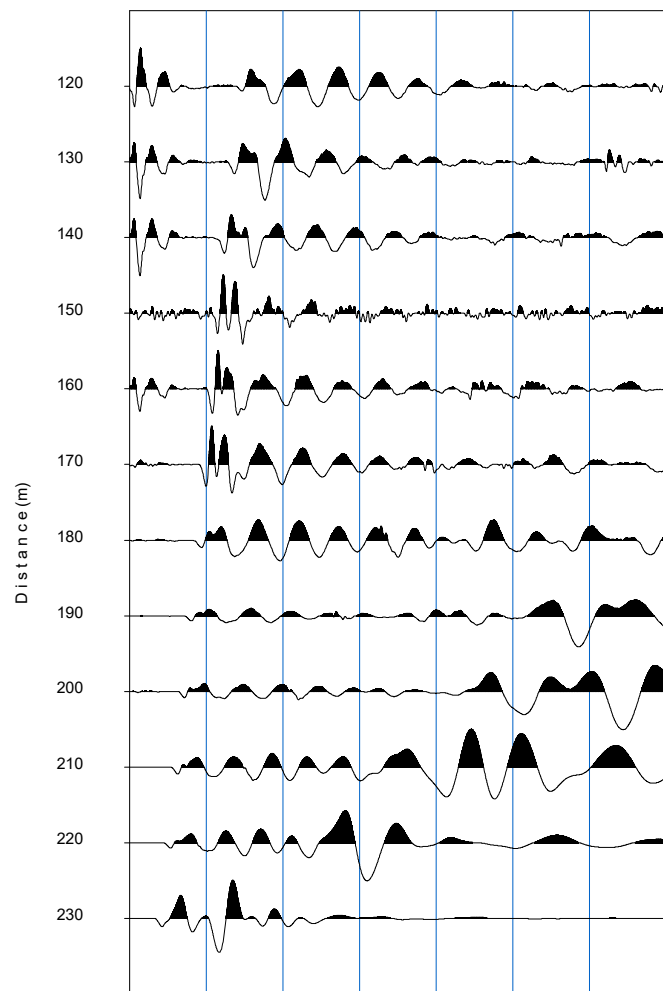
0 50 100 150 200 250 300 350



Source=235.0m

Time (msec)

0 50 100 150 200 250 300 350



BASE SISMICA 2122



INPUT DATA BS 2122

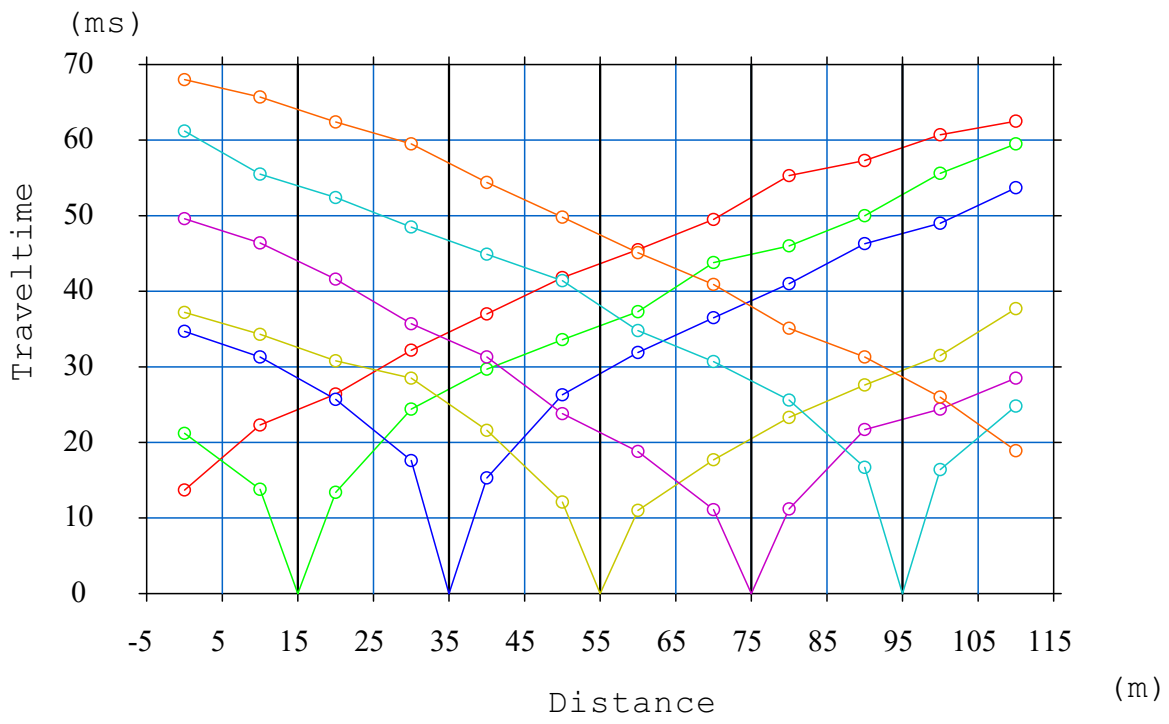
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.20	-5.00	0	0
2	0.25	15.00	0	0
3	0.80	35.00	0	0
4	1.88	55.00	0	0
5	2.93	75.00	0	0
6	3.50	95.00	0	0
7	5.00	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.10	0.00	0	13.73 1	21.26 1	34.70 1	37.29 1	49.60 1	61.30 1	68.05 1
2	0.20	10.00	0	22.35 1	13.87 1	31.32 1	34.35 1	46.48 1	55.57 1	65.73 1
3	0.30	20.00	0	26.42 1	13.50 1	25.71 1	30.82 1	41.61 1	52.42 1	62.42 1
4	0.50	30.00	0	32.21 1	24.43 1	17.64 1	28.55 1	35.73 1	48.57 1	59.56 1
5	1.21	40.00	0	37.01 1	29.72 1	15.36 1	21.66 1	31.39 1	44.93 1	54.45 1
6	1.73	50.00	0	41.88 1	33.67 1	26.31 1	12.17 1	23.87 1	41.43 1	49.88 1
7	2.15	60.00	0	45.51 1	37.31 1	31.95 1	11.05 1	18.87 1	34.81 1	45.14 1
8	2.93	70.00	0	49.56 1	43.81 1	36.58 1	17.73 1	11.13 1	30.77 1	40.99 1
9	2.93	80.00	0	55.33 1	46.09 1	41.02 1	23.30 1	11.28 1	25.61 1	35.16 1
10	3.25	90.00	0	57.33 1	50.04 1	46.34 1	27.65 1	21.78 1	16.79 1	31.37 1
11	3.81	100.00	0	60.73 1	55.69 1	49.05 1	31.53 1	24.46 1	16.45 1	26.03 1
12	4.76	110.00	0	62.51 1	59.55 1	53.71 1	37.75 1	28.51 1	24.85 1	18.99 1

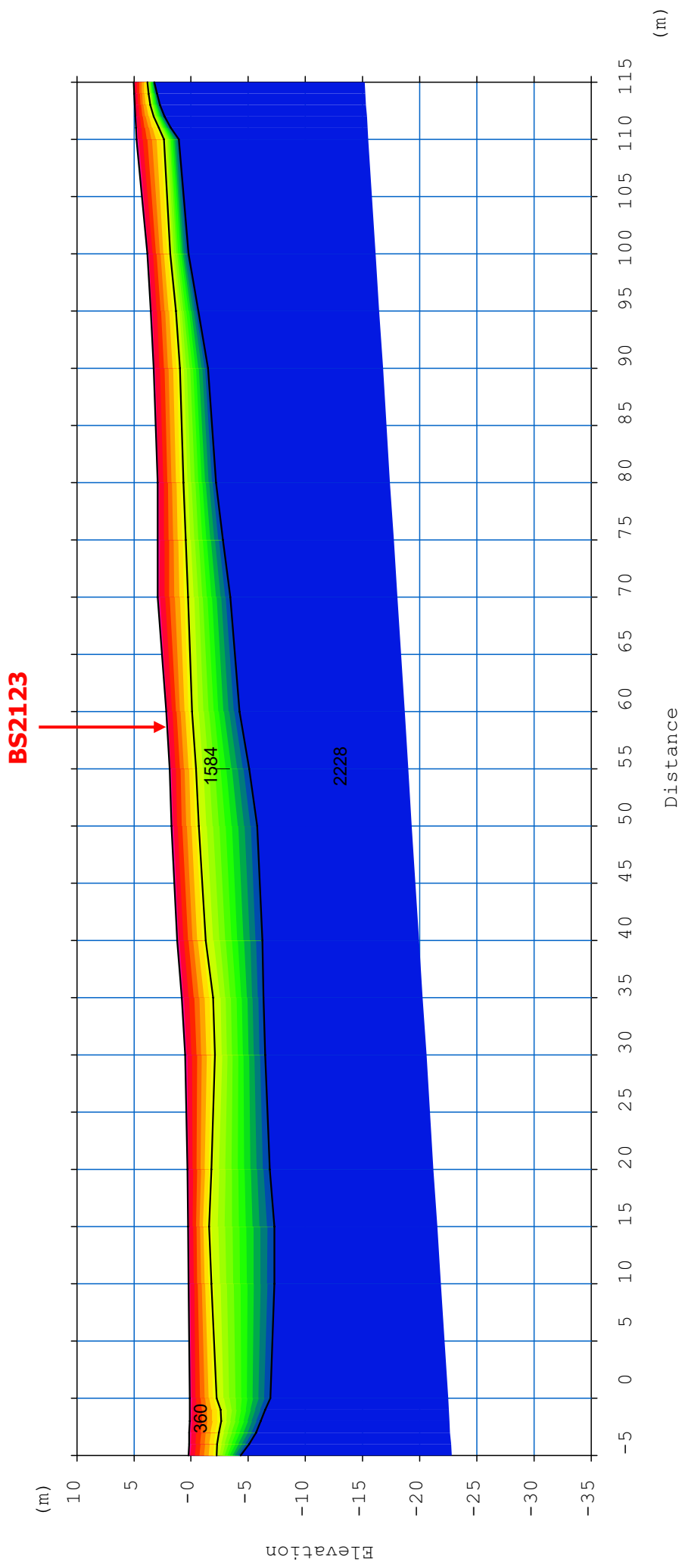
OUTPUT DATA BS 2122

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.48	4.56
2	15.00	1.86	7.55
3	35.00	2.75	7.19
4	55.00	2.34	6.98
5	75.00	2.45	5.75
6	95.00	2.16	4.17
7	115.00	1.19	1.76
Geo			
1	0.00	2.39	7.06
2	10.00	2.04	7.52
3	20.00	2.14	7.23
4	30.00	2.62	7.04
5	40.00	2.53	7.47
6	50.00	2.44	7.56
7	60.00	2.28	6.41
8	70.00	2.63	6.41
9	80.00	2.27	5.13
10	90.00	2.26	4.76
11	100.00	1.98	3.59
12	110.00	2.38	3.70



bs 2122.vs

Scale = 1 / 1000



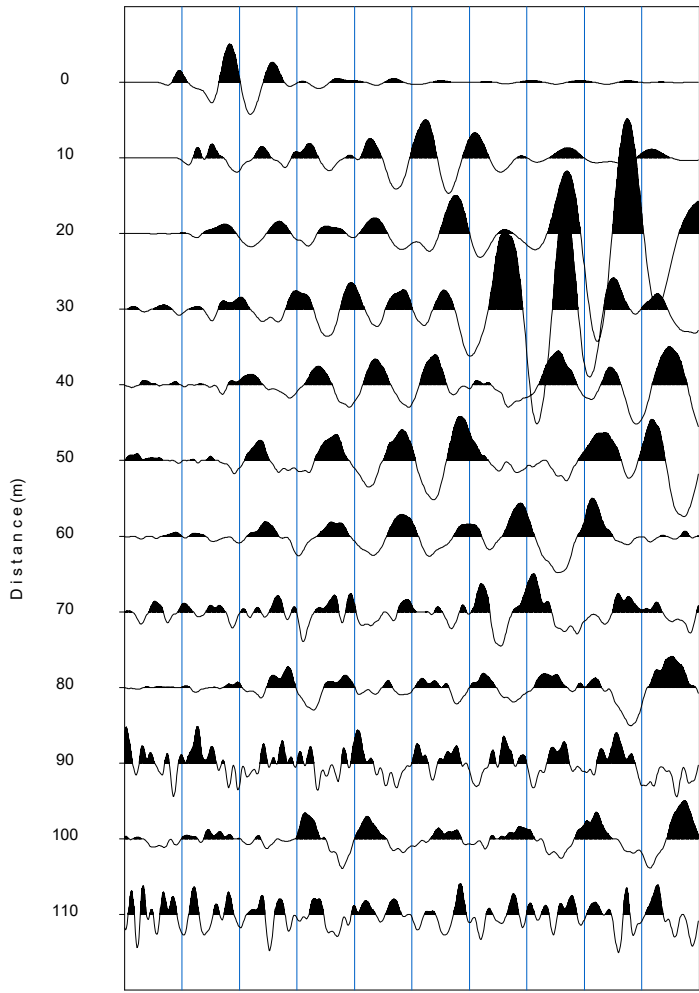
bs 2122.vs

Scale = 1 / 500

Source= -5.0m

Time (msec)

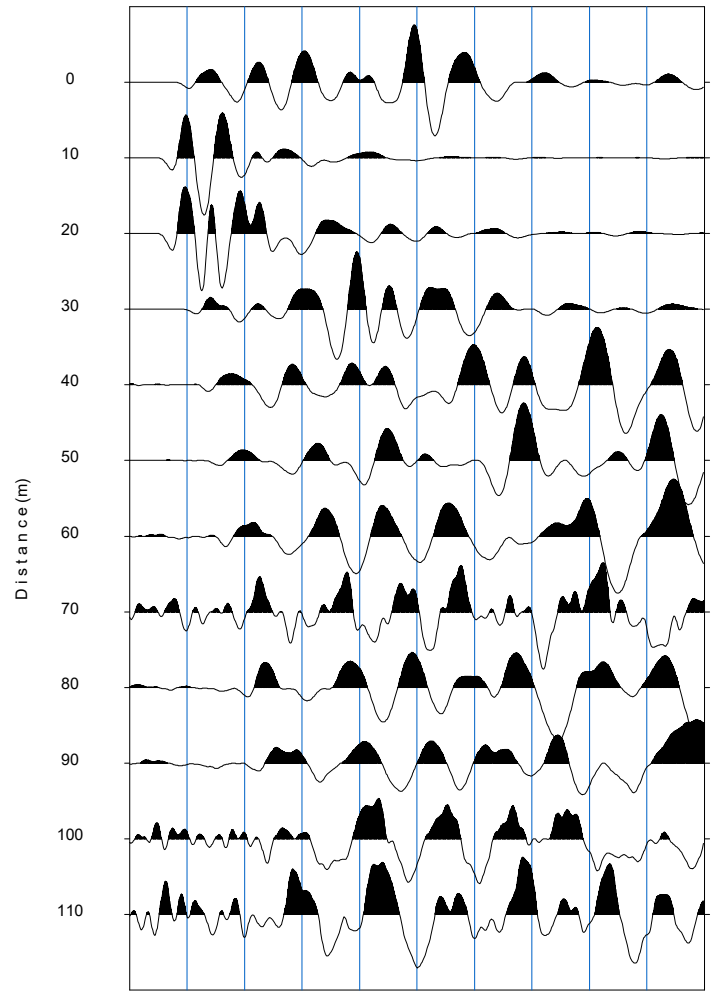
0 25 50 75 100 125 150 175 200 225 250



Source= 15.0m

Time (msec)

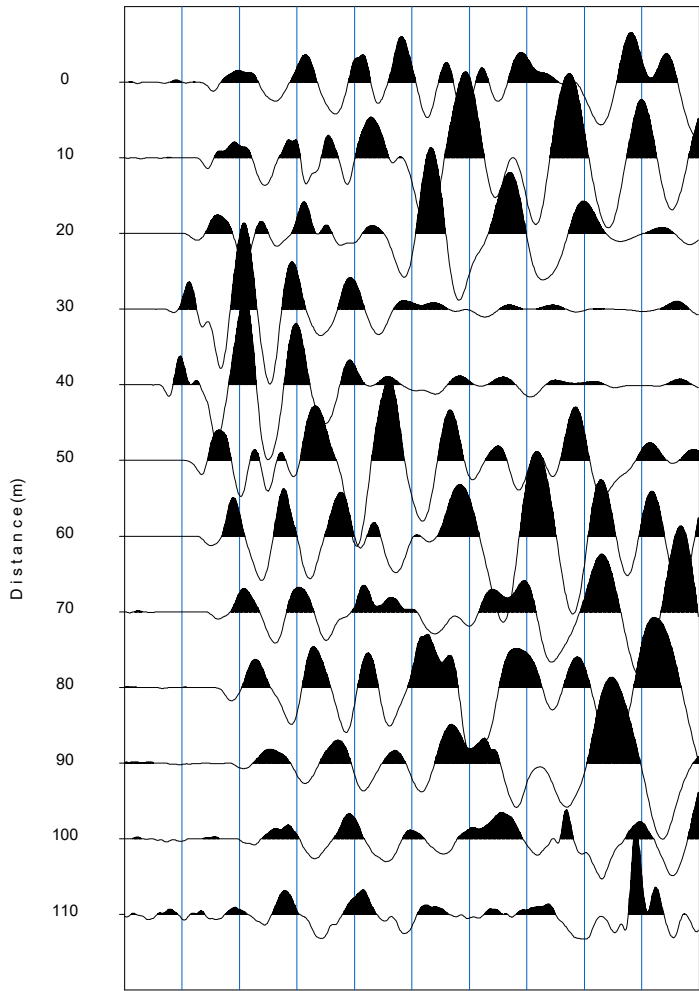
0 25 50 75 100 125 150 175 200 225 250



Source= 35.0m

Time (msec)

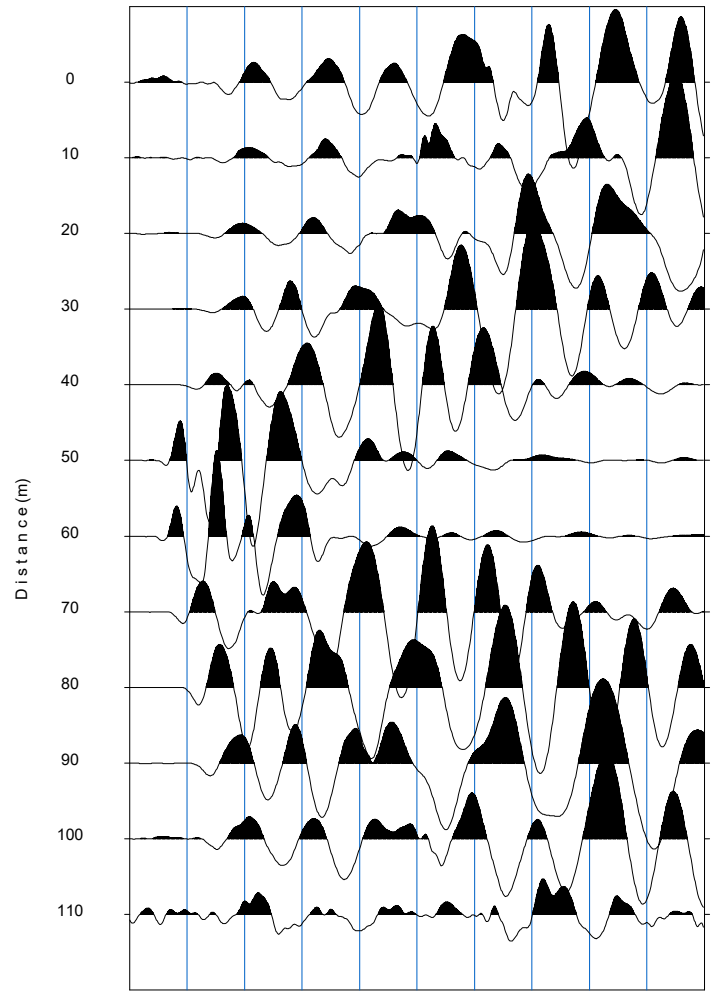
0 25 50 75 100 125 150 175 200 225 250



Source= 55.0m

Time (msec)

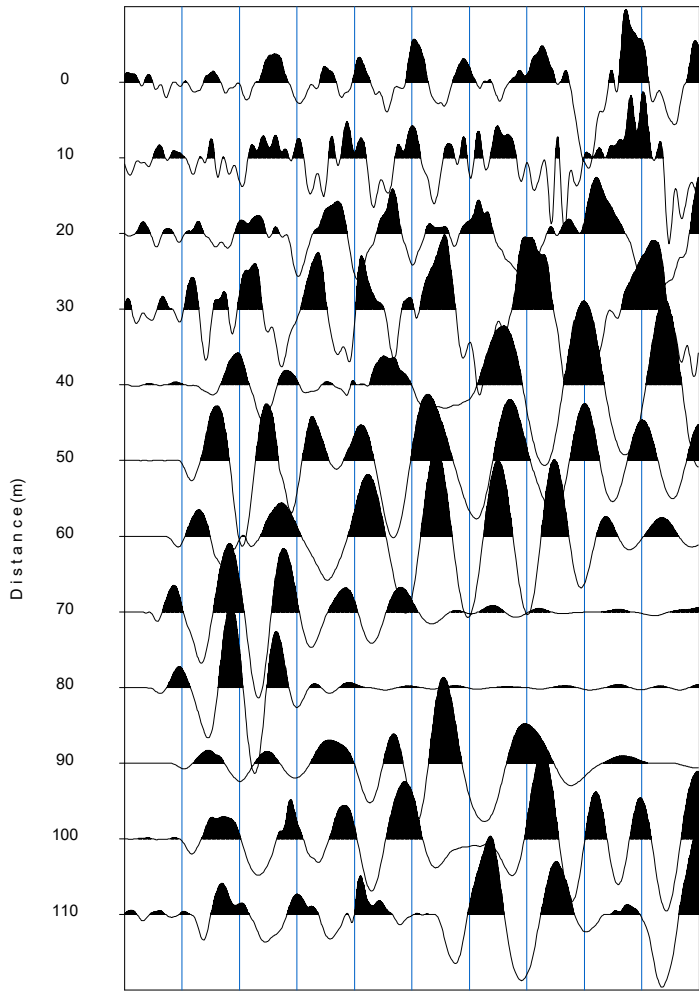
0 25 50 75 100 125 150 175 200 225 250



Source= 75.0m

Time (msec)

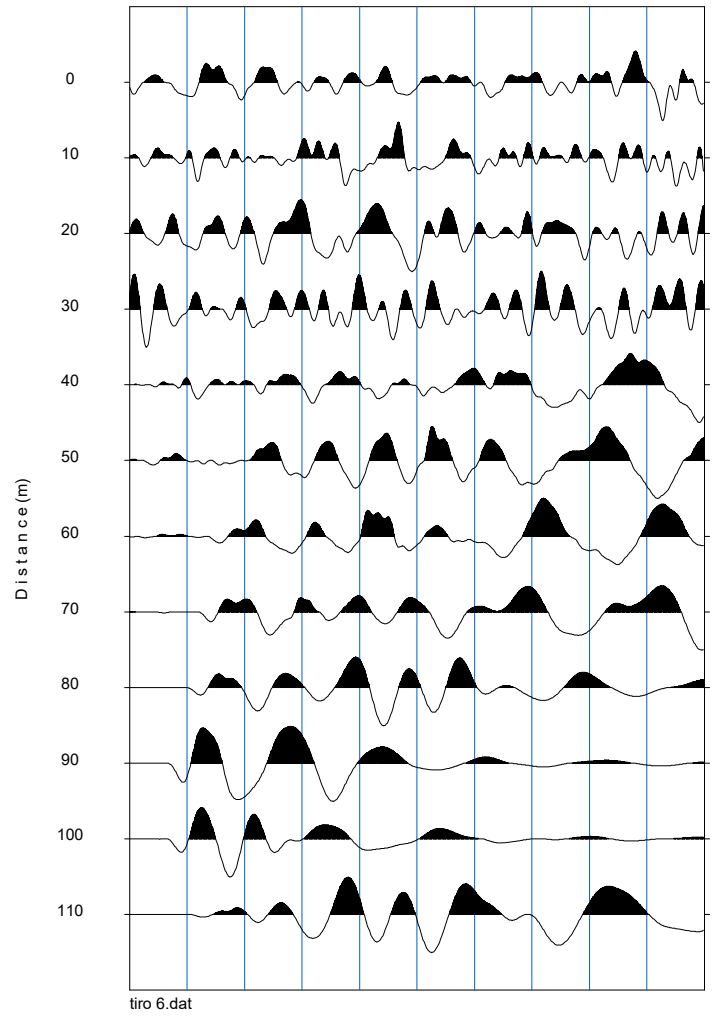
0 25 50 75 100 125 150 175 200 225 250



Source= 95.0m

Time (msec)

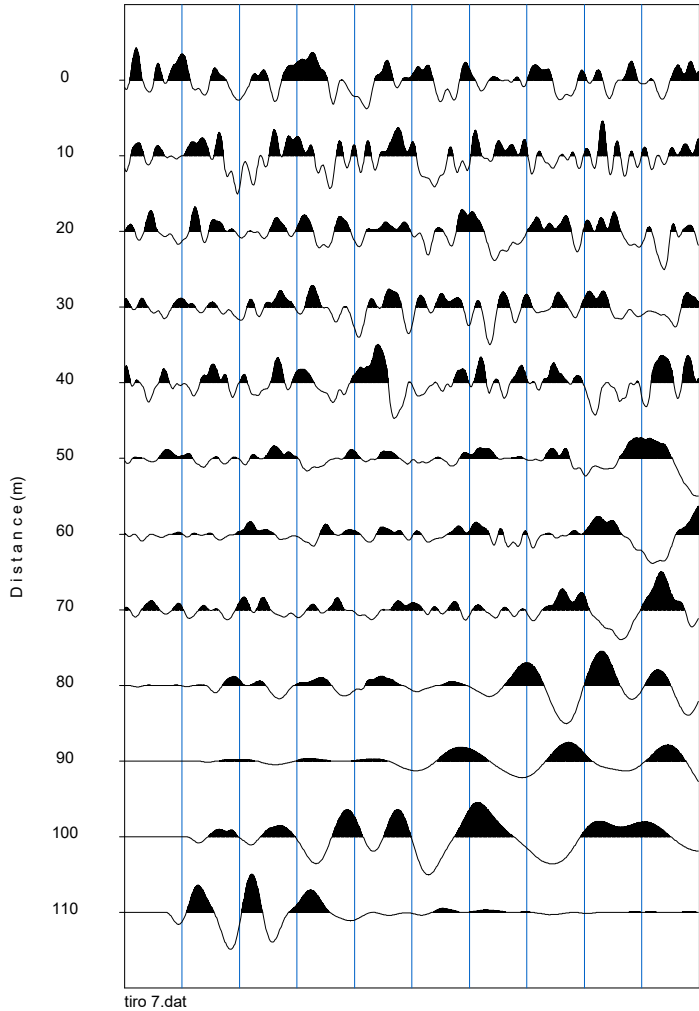
0 25 50 75 100 125 150 175 200 225 250



Source=115.0m

Time (msec)

0 25 50 75 100 125 150 175 200 225 250



BASE SISMICA 2123



INPUT DATA BS 2123 onda P

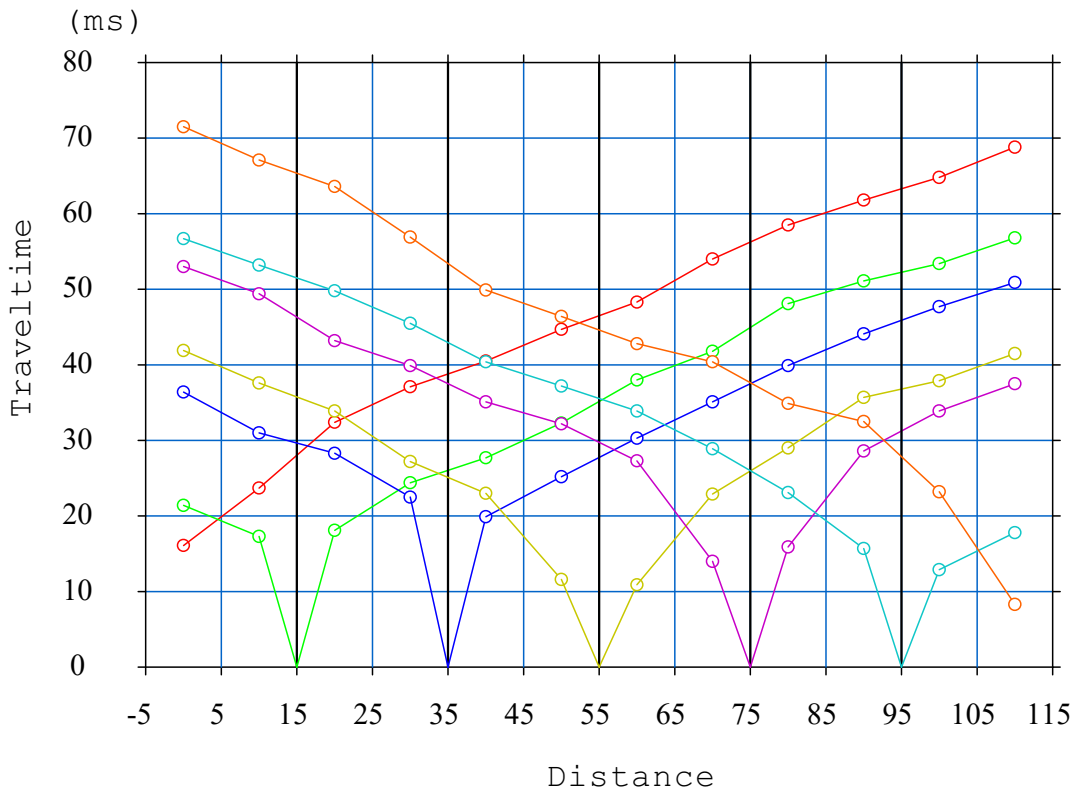
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0
2	1.86	15.00	0.00	0
3	8.22	35.00	0.00	0
4	14.63	55.00	0.00	0
5	20.06	75.00	0.00	0
6	24.04	95.00	0.00	0
7	28.20	115.00	0.00	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.61	0.00	0.00	16.20 1	21.46 1	36.49 1	41.90 1	53.04 1	56.77 1	71.51 1
2	1.01	10.00	0.00	23.75 1	17.33 1	31.05 1	37.69 1	49.44 1	53.24 1	67.16 1
3	3.21	20.00	0.00	32.48 1	18.11 1	28.35 1	33.93 1	43.20 1	49.83 1	63.60 1
4	6.60	30.00	0.00	37.17 1	24.44 1	22.56 1	27.25 1	39.99 1	45.53 1	56.95 1
5	10.02	40.00	0.00	40.60 1	27.73 1	19.98 1	23.05 1	35.14 1	40.41 1	49.98 1
6	13.04	50.00	0.00	44.79 1	32.35 1	25.29 1	11.64 1	32.25 1	37.23 1	46.49 1
7	16.22	60.00	0.00	48.37 1	38.07 1	30.36 1	10.95 1	27.32 1	33.97 1	42.87 1
8	19.03	70.00	0.00	54.06 1	41.86 1	35.18 1	22.99 1	14.02 1	28.97 1	40.43 1
9	21.10	80.00	0.00	58.54 1	48.13 1	39.94 1	29.10 1	15.93 1	23.19 1	34.91 1
10	23.08	90.00	0.00	61.83 1	51.19 1	44.16 1	35.80 1	28.64 1	15.80 1	32.59 1
11	24.99	100.00	0.00	64.83 1	53.46 1	47.77 1	37.94 1	33.97 1	12.99 1	23.25 1
12	26.80	110.00	0.00	68.81 1	56.87 1	50.96 1	41.60 1	37.53 1	17.90 1	8.38 1

OUTPUT DATA BS 2123 onda P

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.09	9.73
2	15.00	2.41	8.00
3	35.00	3.30	7.32
4	55.00	3.54	7.68
5	75.00	3.06	9.02
6	95.00	3.30	8.55
7	115.00	3.67	10.45
Geo			
1	0.00	2.09	9.73
2	10.00	2.09	8.91
3	20.00	2.32	7.16
4	30.00	3.60	8.16
5	40.00	2.86	6.75
6	50.00	3.69	7.73
7	60.00	2.93	7.95
8	70.00	3.52	9.48
9	80.00	2.73	8.34
10	90.00	3.41	8.70
11	100.00	3.10	8.95
12	110.00	3.67	10.45



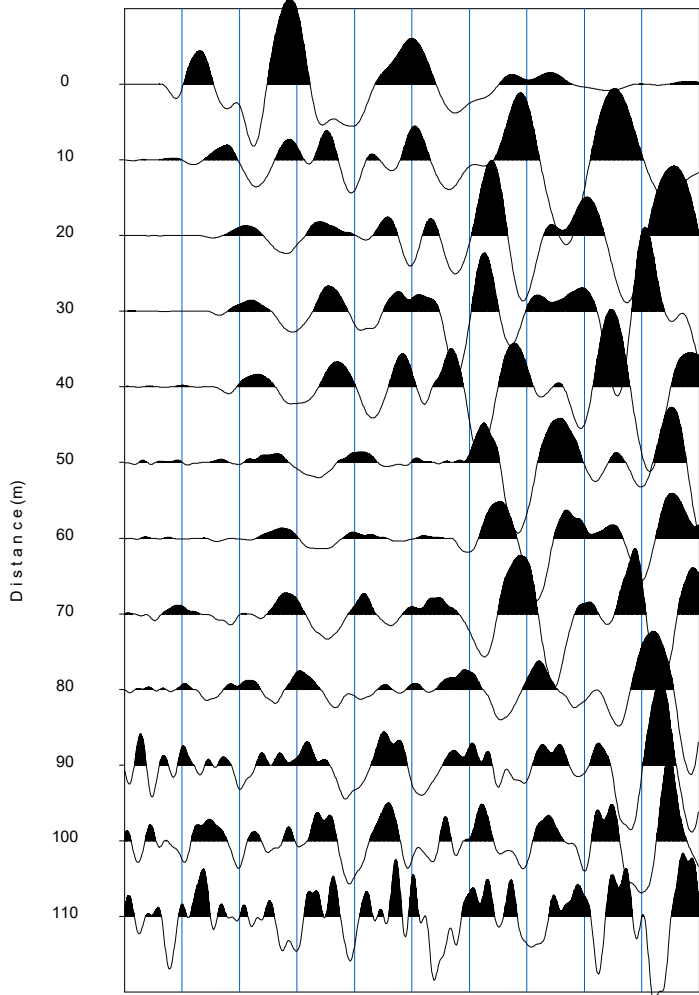
bs 2123.vs

Scale = 1 / 1000

Source= -5.0m

Time (msec)

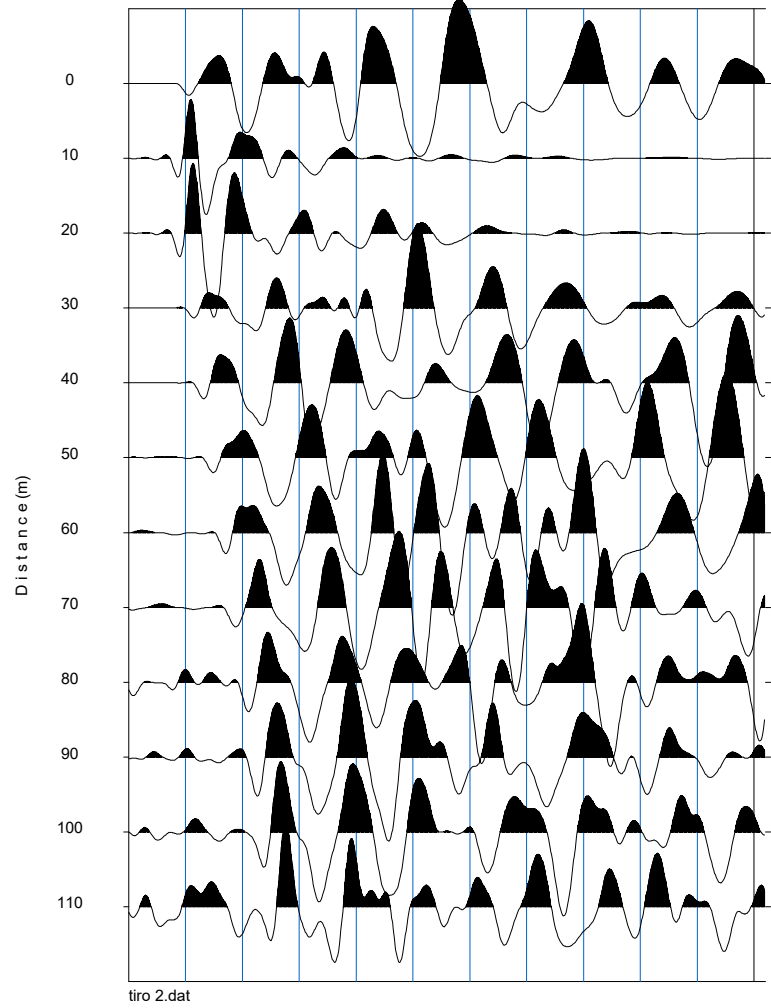
0 25 50 75 100 125 150 175 200 225 250



Source= 15.0m

Time (msec)

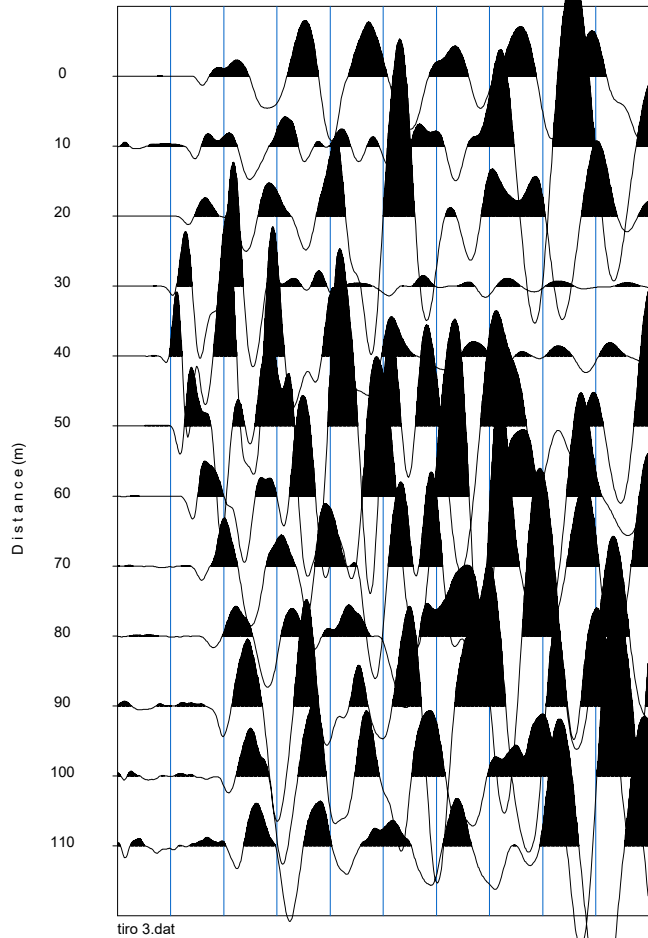
0 25 50 75 100 125 150 175 200 225 250 275



Source= 35.0m

Time (msec)

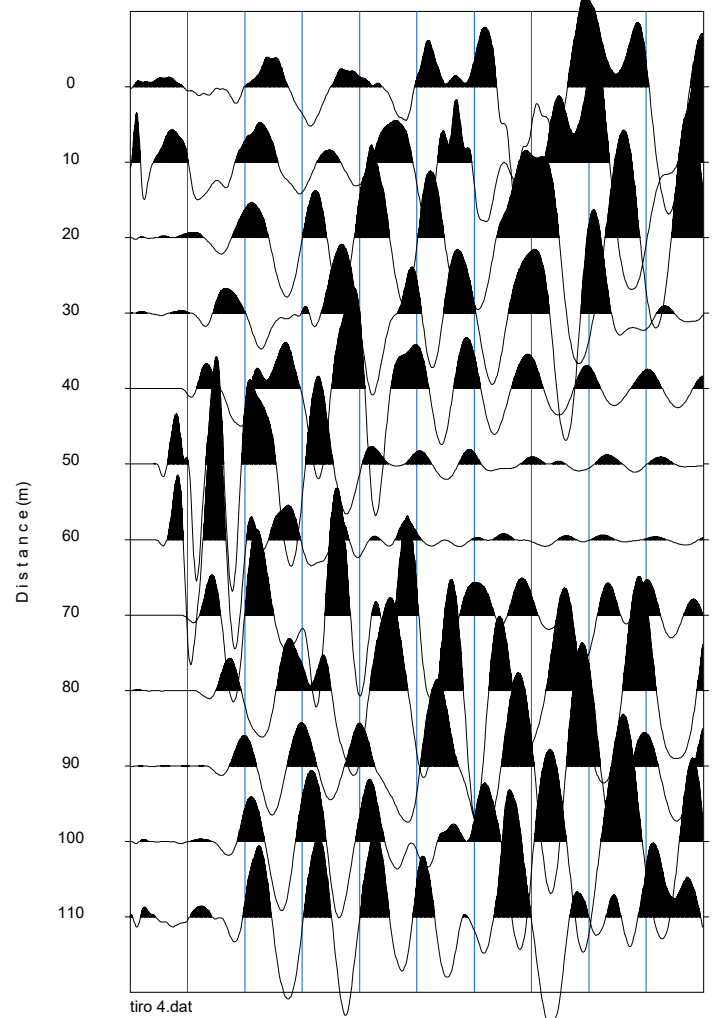
0 25 50 75 100 125 150 175 200 225 250



Source= 55.0m

Time (msec)

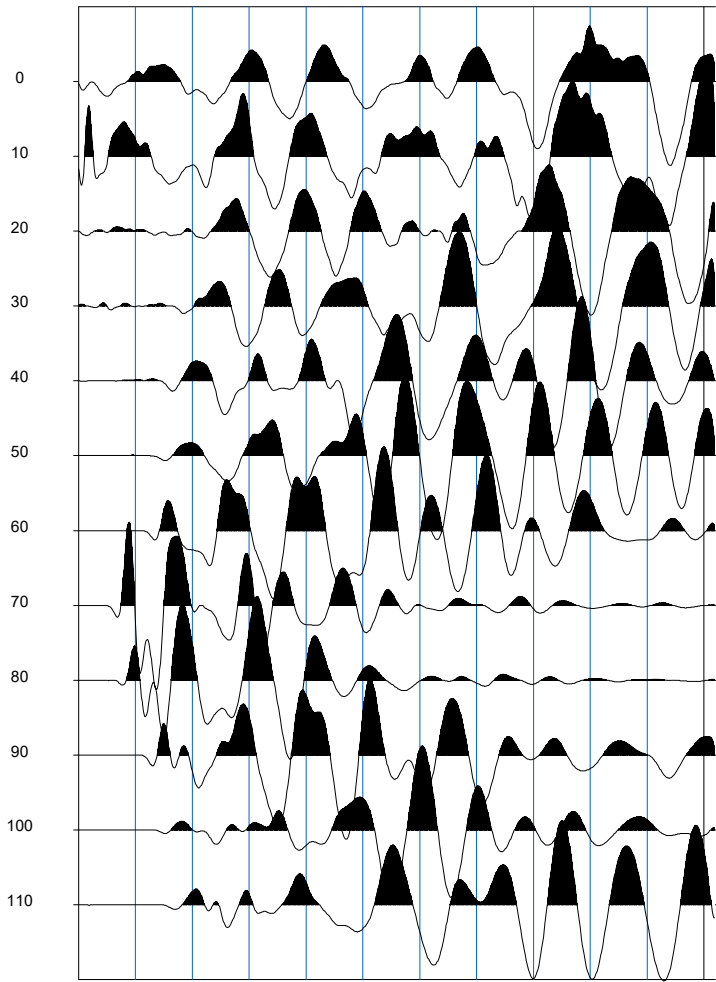
0 25 50 75 100 125 150 175 200 225 250



Source= 75.0m

Time (msec)

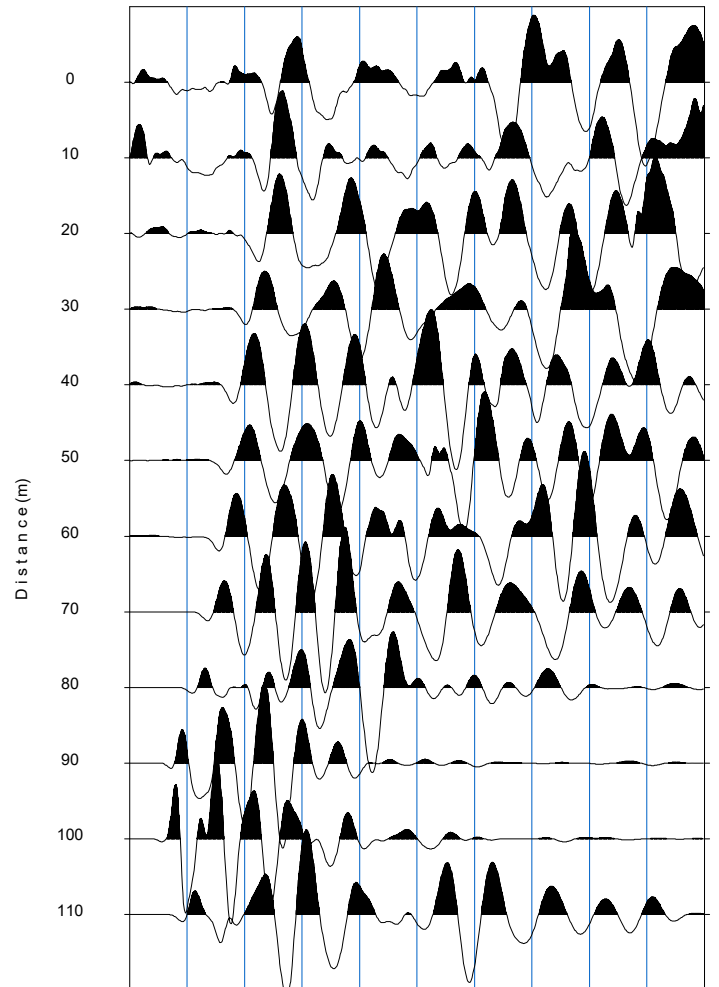
0 25 50 75 100 125 150 175 200 225 250 275



Source= 95.0m

Time (msec)

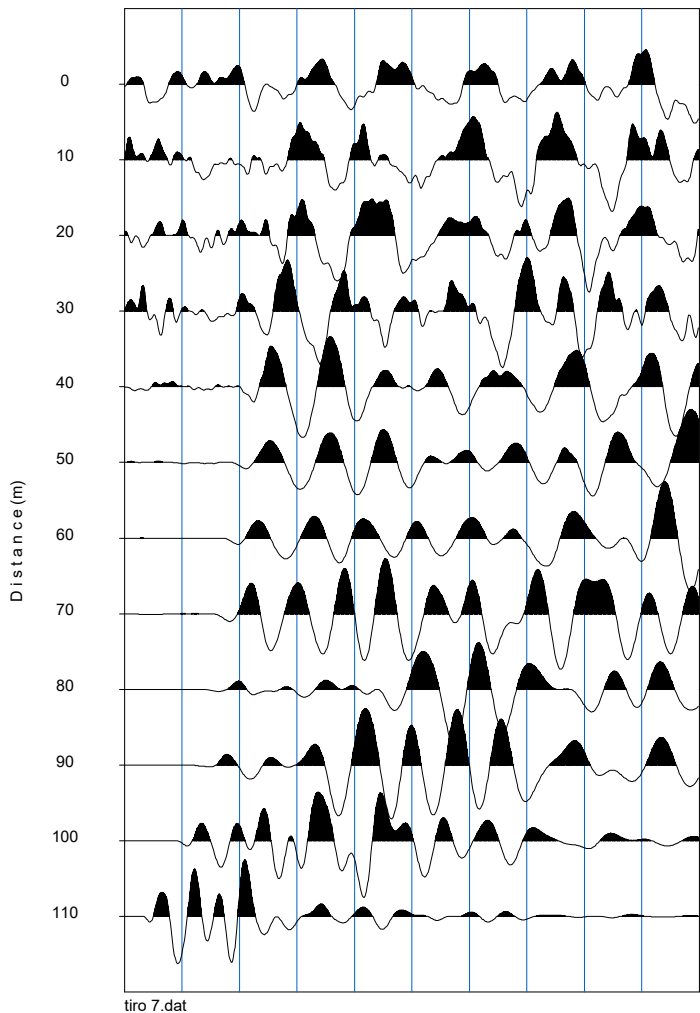
0 25 50 75 100 125 150 175 200 225 250



Source=115.0m

Time (msec)

0 25 50 75 100 125 150 175 200 225 250



INPUT DATA BS 2123 onda SH

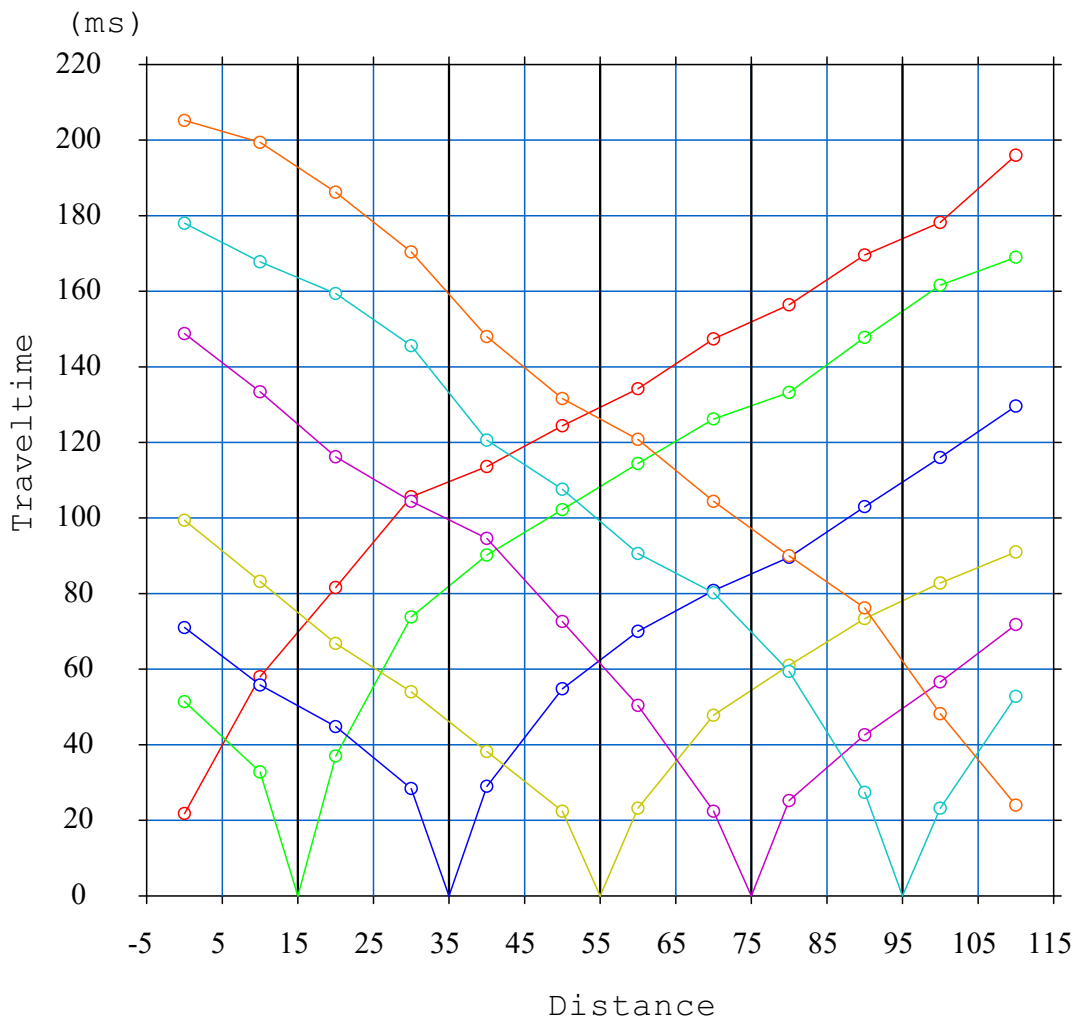
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0
2	1.86	15.00	0.00	0
3	8.22	35.00	0.00	0
4	14.63	55.00	0.00	0
5	20.06	75.00	0.00	0
6	24.04	95.00	0.00	0
7	28.20	115.00	0.00	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.61	0.00	0.00	21.82 1	51.41 1	71.14 1	99.48 1	148.95 1	178.09 1	205.24 1
2	1.01	10.00	0.00	58.08 1	32.86 1	55.98 1	83.20 1	133.52 1	167.88 1	199.40 1
3	3.21	20.00	0.00	81.77 1	37.06 1	44.82 1	66.92 1	116.34 1	159.50 1	186.34 1
4	6.60	30.00	0.00	105.64 1	73.81 1	28.43 1	54.08 1	104.58 1	145.75 1	170.51 1
5	10.02	40.00	0.00	113.60 1	90.21 1	29.08 1	38.21 1	94.77 1	120.78 1	148.15 1
6	13.04	50.00	0.00	124.54 1	102.26 1	54.95 1	22.53 1	72.79 1	107.61 1	131.75 1
7	16.22	60.00	0.00	134.32 1	114.44 1	70.17 1	23.39 1	50.42 1	90.73 1	120.86 1
8	19.03	70.00	0.00	147.49 1	126.36 1	80.83 1	47.93 1	22.42 1	80.34 1	104.49 1
9	21.10	80.00	0.00	156.56 1	133.35 1	89.72 1	61.09 1	25.36 1	59.45 1	90.15 1
10	23.08	90.00	0.00	169.68 1	147.93 1	103.06 1	73.43 1	42.67 1	27.40 1	76.26 1
11	24.99	100.00	0.00	178.29 1	161.65 1	116.05 1	82.88 1	56.62 1	23.39 1	48.38 1
12	26.80	110.00	0.00	196.17 1	169.16 1	129.70 1	91.13 1	71.99 1	52.99 1	24.02 1

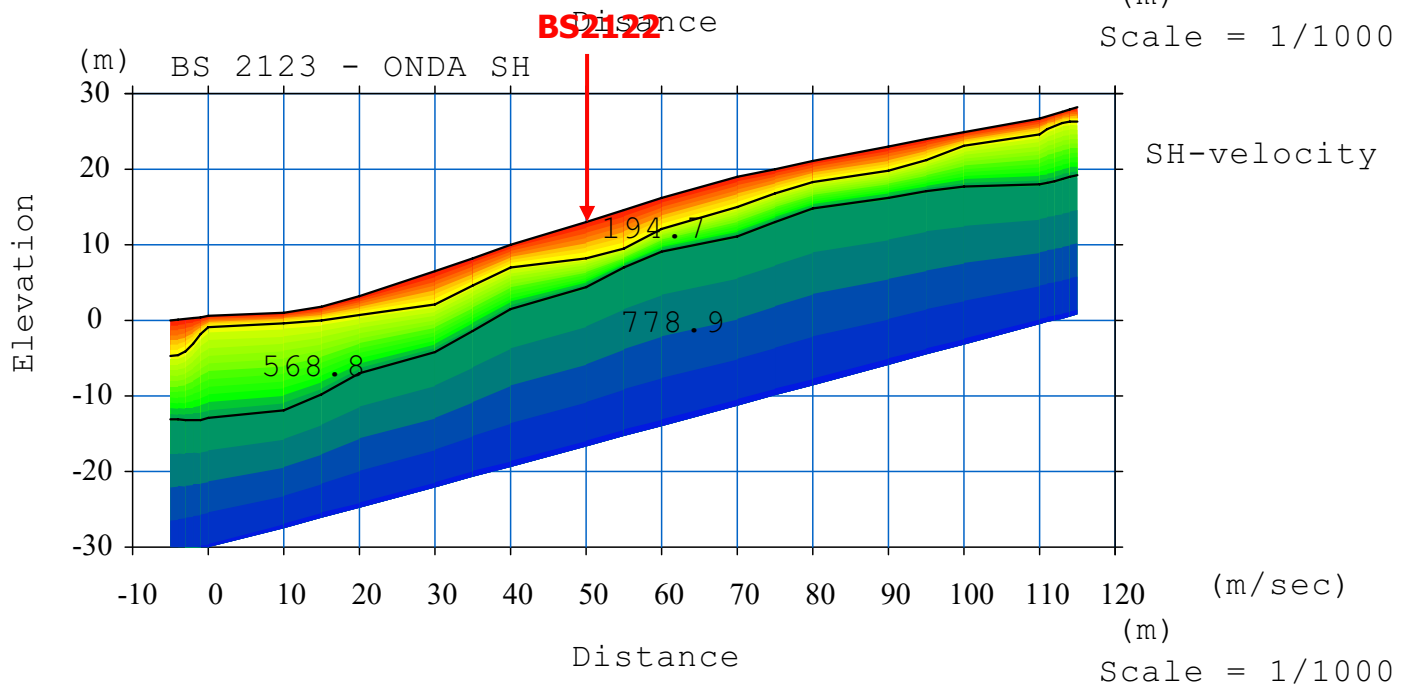
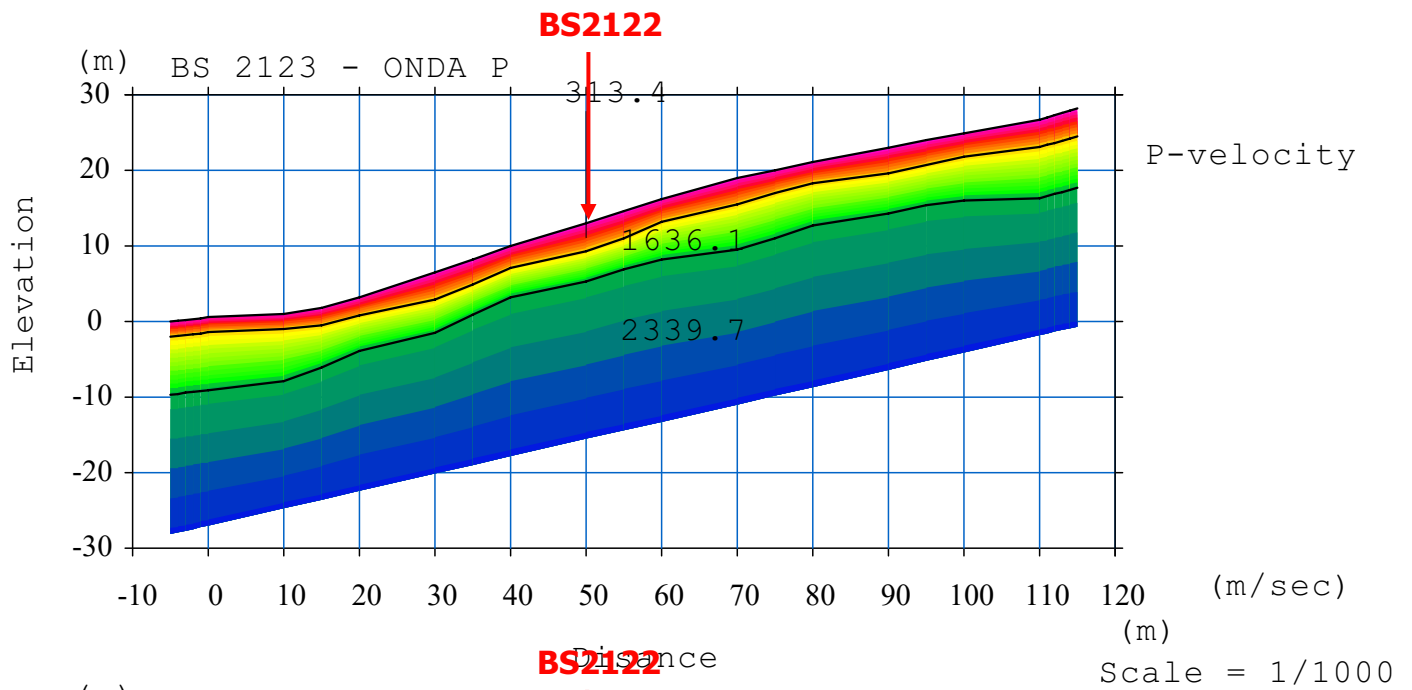
OUTPUT DATA BS 2123 onda SH

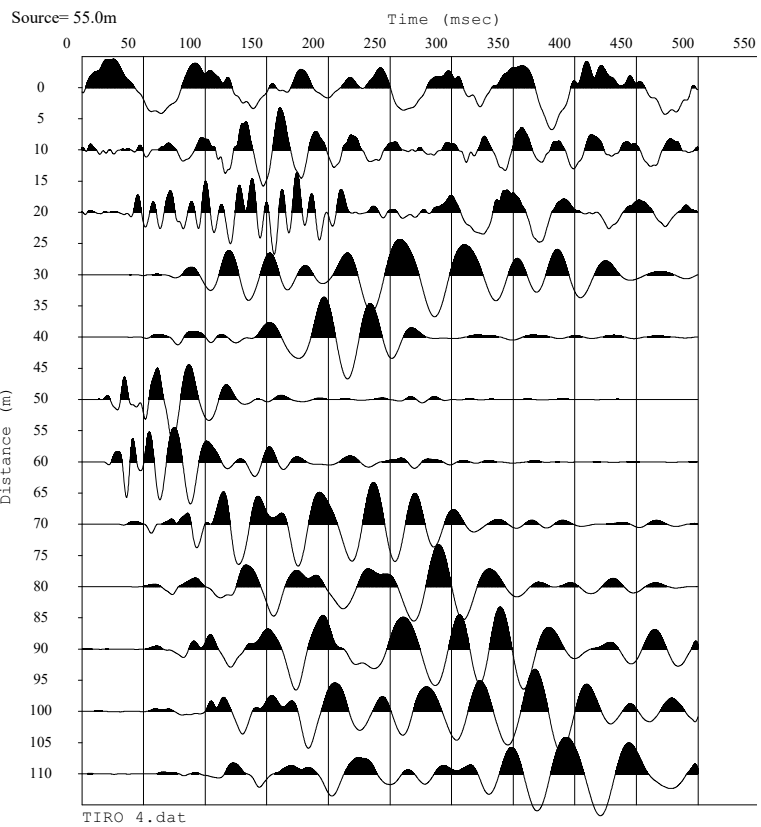
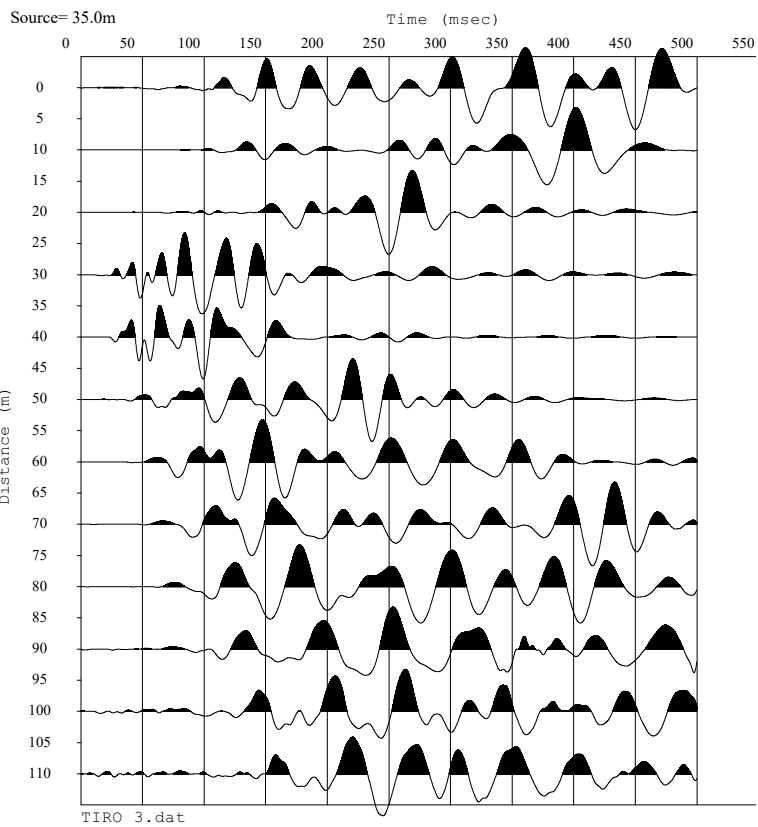
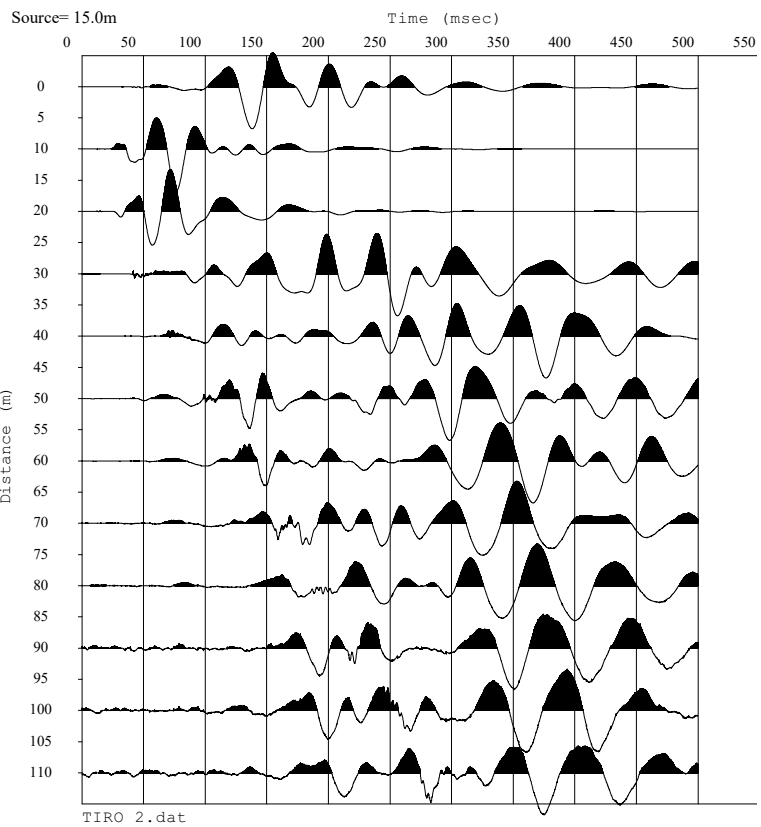
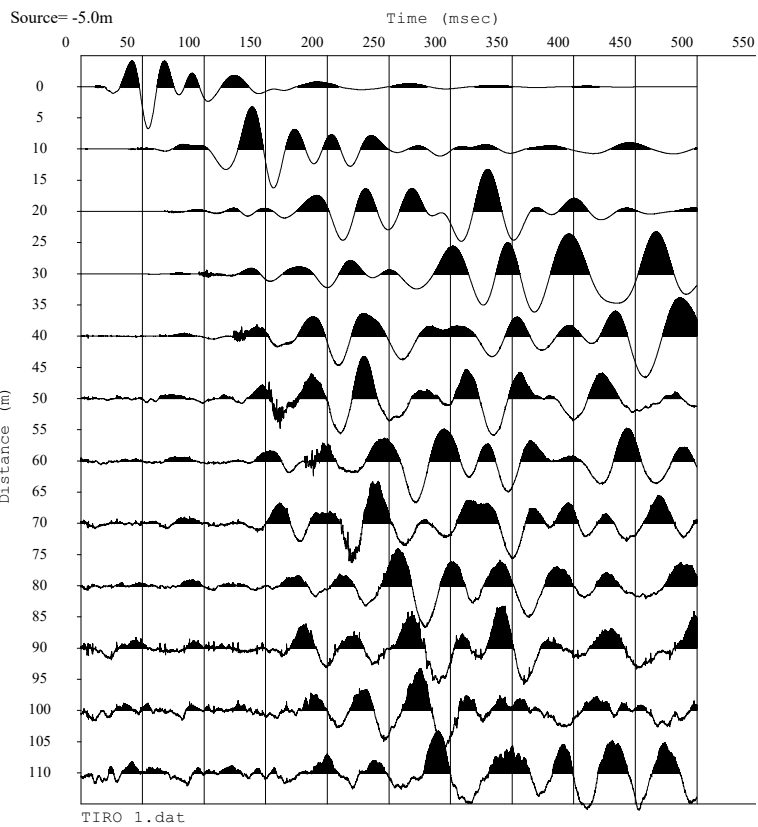
SP	X-loc	Layer 2	Layer 3
1	-5.00	4.80	13.14
2	15.00	1.81	11.69
3	35.00	3.54	9.66
4	55.00	5.05	7.61
5	75.00	3.17	7.01
6	95.00	2.76	6.88
7	115.00	1.80	8.91
Geo			
1	0.00	1.57	13.60
2	10.00	1.43	12.98
3	20.00	2.45	10.25
4	30.00	4.49	10.83
5	40.00	2.98	8.50
6	50.00	4.82	8.59
7	60.00	4.03	7.04
8	70.00	3.98	7.90
9	80.00	2.74	6.29
10	90.00	3.28	6.87
11	100.00	1.86	7.26
12	110.00	2.13	8.74

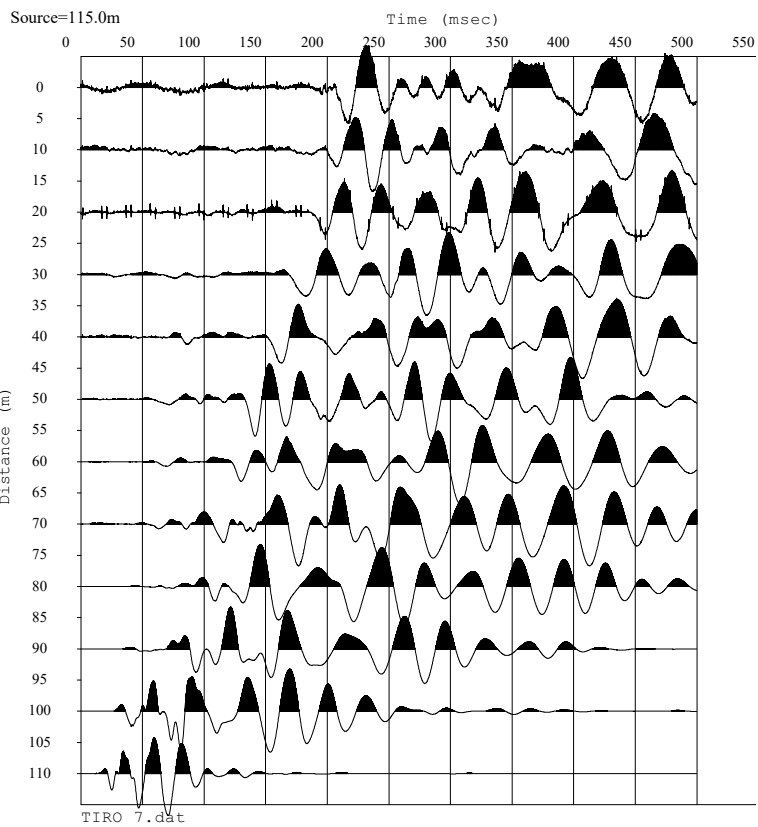
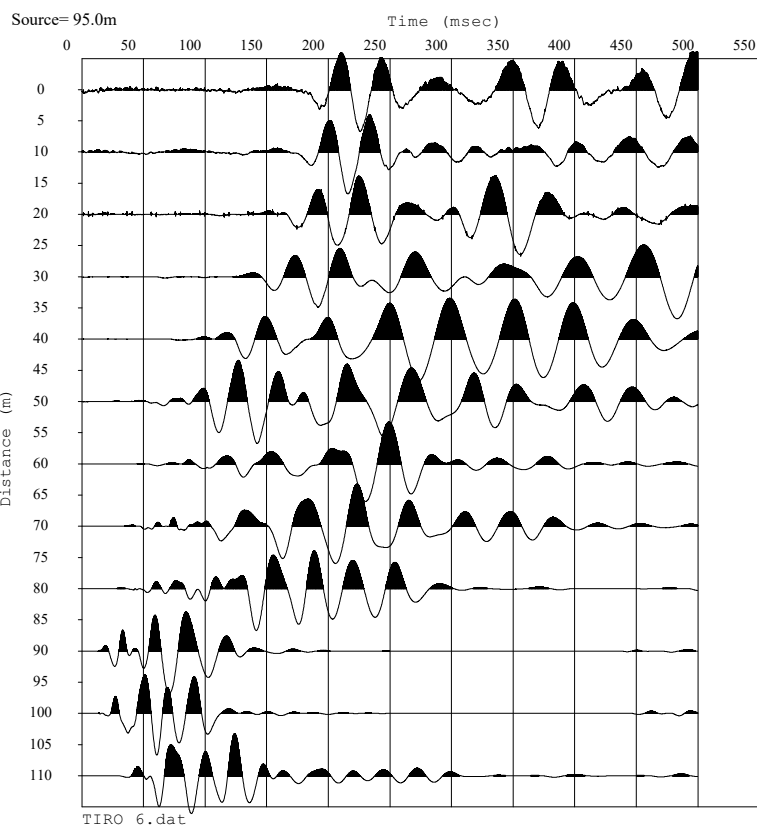
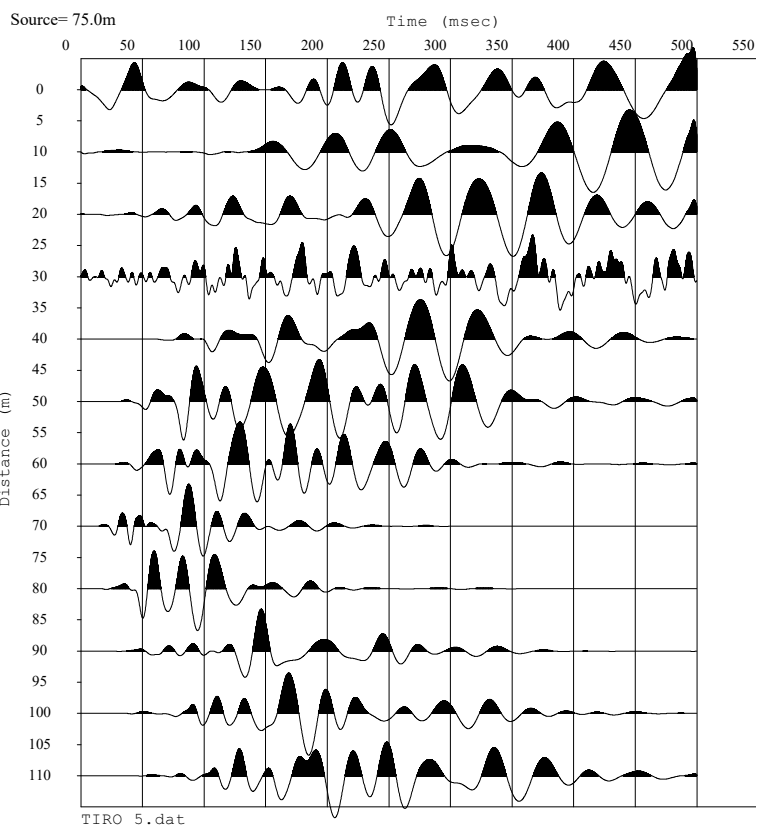


BS 2123 SH.vs

Scale = 1 / 1000







BASE SISMICA 2124



INPUT DATA BS 2124

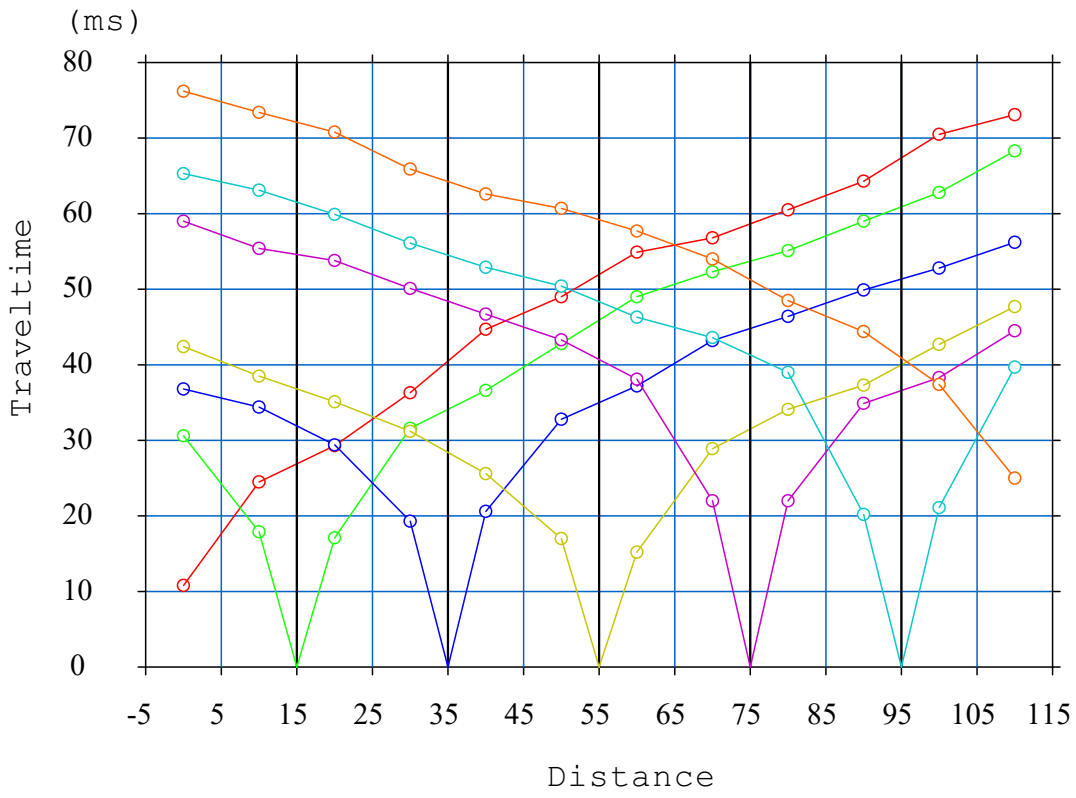
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	-1.37	15.00	0	0
3	-2.24	35.00	0	0
4	-3.86	55.00	0	0
5	-7.22	75.00	0	0
6	-10.84	95.00	0	0
7	-13.70	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	-0.75	0.00	0	10.87 1	30.69 1	36.82 1	42.50 1	59.04 1	65.34 1	76.25 1
2	-1.25	10.00	0	24.51 1	17.94 1	34.42 1	38.56 1	55.49 1	63.14 1	73.49 1
3	-1.49	20.00	0	29.34 1	17.10 1	29.42 1	35.10 1	53.89 1	59.98 1	70.83 1
4	-1.99	30.00	0	36.35 1	31.70 1	19.32 1	31.21 1	50.16 1	56.14 1	65.91 1
5	-2.49	40.00	0	44.78 1	36.62 1	20.62 1	25.64 1	46.75 1	52.94 1	62.66 1
6	-2.99	50.00	0	49.04 1	42.82 1	32.85 1	17.05 1	43.36 1	50.40 1	60.76 1
7	-4.73	60.00	0	54.99 1	49.08 1	37.27 1	15.21 1	38.10 1	46.36 1	57.77 1
8	-6.23	70.00	0	56.83 1	52.38 1	43.29 1	28.98 1	22.08 1	43.62 1	54.07 1
9	-8.22	80.00	0	60.51 1	55.19 1	46.44 1	34.10 1	22.08 1	39.04 1	48.54 1
10	-10.21	90.00	0	64.39 1	59.09 1	49.95 1	37.37 1	34.92 1	20.28 1	44.49 1
11	-11.46	100.00	0	70.56 1	62.89 1	52.81 1	42.75 1	38.31 1	21.18 1	37.50 1
12	-12.21	110.00	0	73.17 1	68.38 1	56.29 1	47.79 1	44.56 1	39.72 1	25.09 1

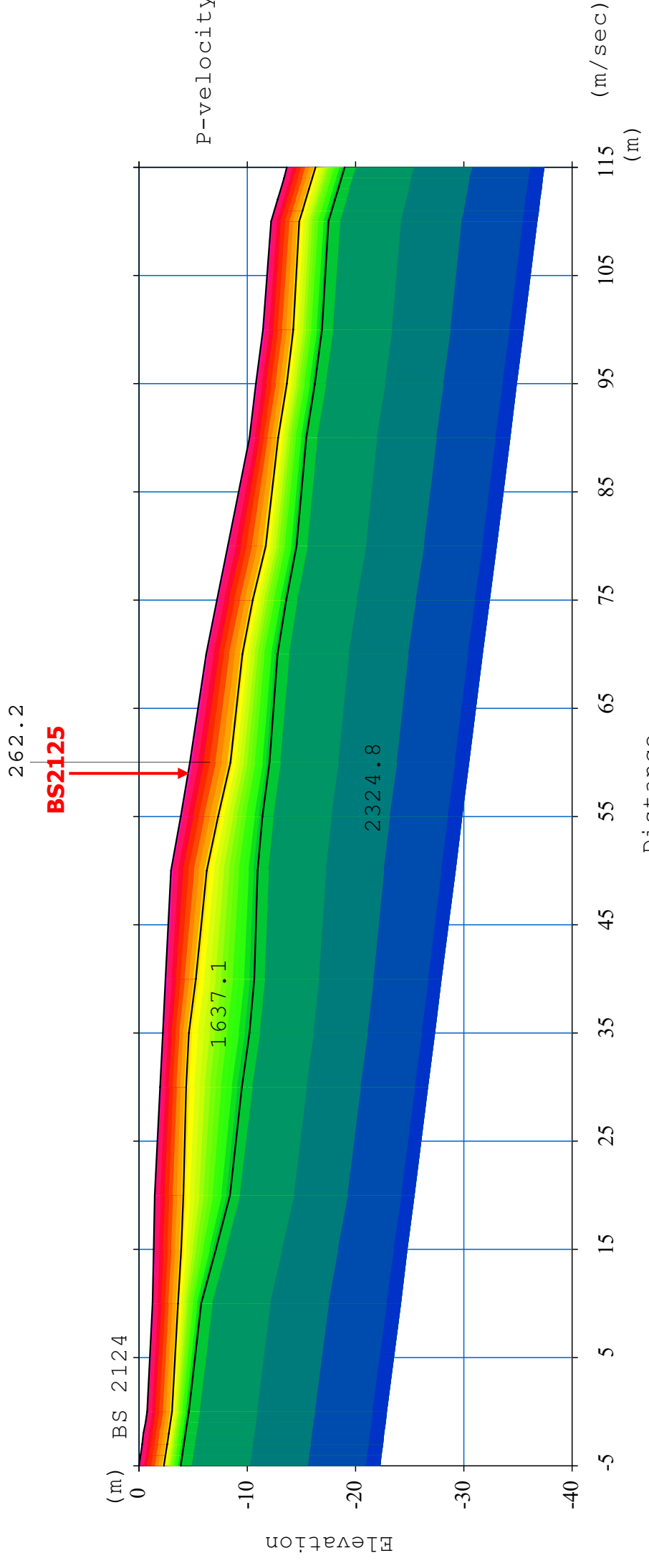
OUTPUT DATA BS 2124

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.31	3.85
2	15.00	2.53	5.74
3	35.00	2.40	8.01
4	55.00	3.44	7.55
5	75.00	3.32	6.41
6	95.00	2.82	5.45
7	115.00	2.63	5.31
Geo			
1	0.00	2.31	3.85
2	10.00	2.39	4.54
3	20.00	2.61	6.92
4	30.00	2.38	7.51
5	40.00	2.80	8.18
6	50.00	3.27	7.98
7	60.00	3.74	7.33
8	70.00	3.33	6.57
9	80.00	3.51	6.34
10	90.00	2.68	5.27
11	100.00	2.81	5.48
12	110.00	2.63	5.31



bs 2124.vs

Scale = 1 / 1000

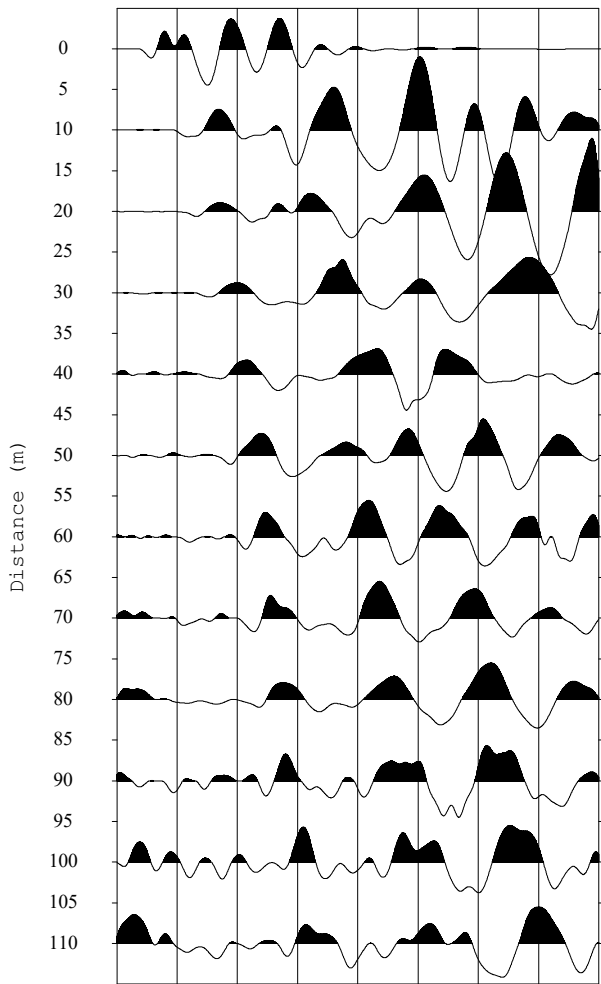


Scale 1:500

Source= -5.0m

Time (msec)

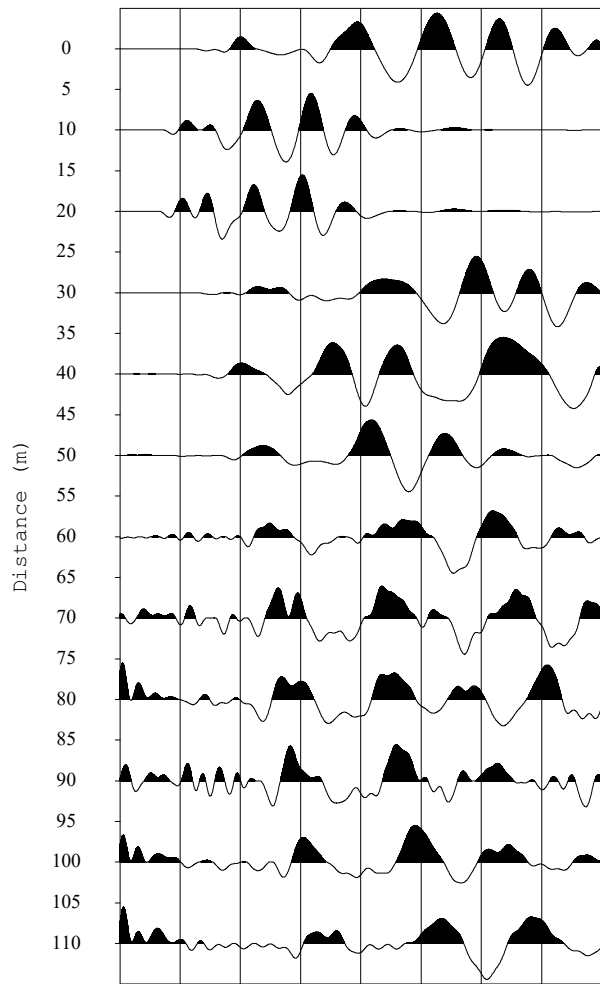
0 25 50 75 100 125 150 175 200



Source= 15.0m

Time (msec)

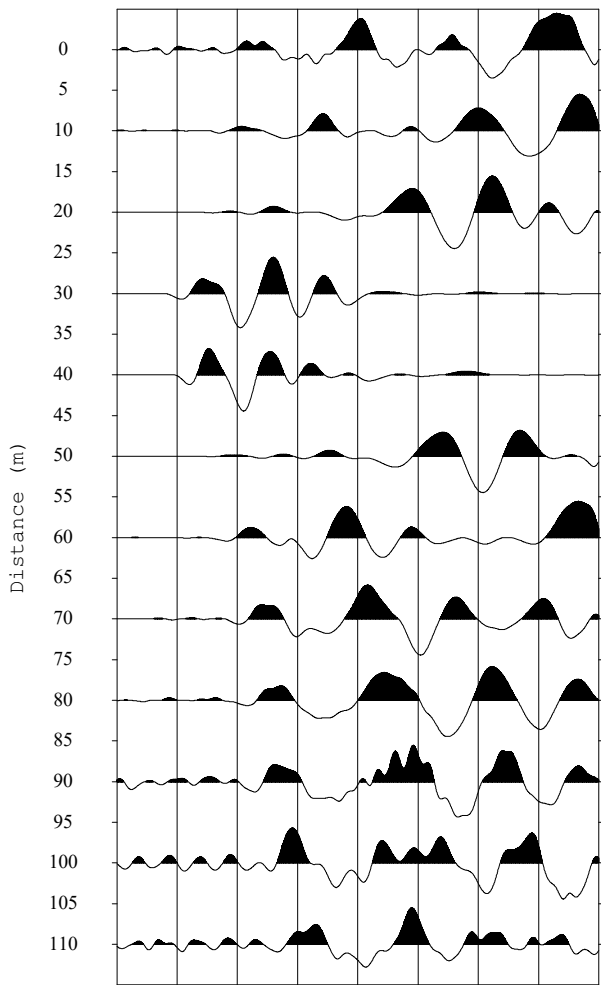
0 25 50 75 100 125 150 175 200



Source= 35.0m

Time (msec)

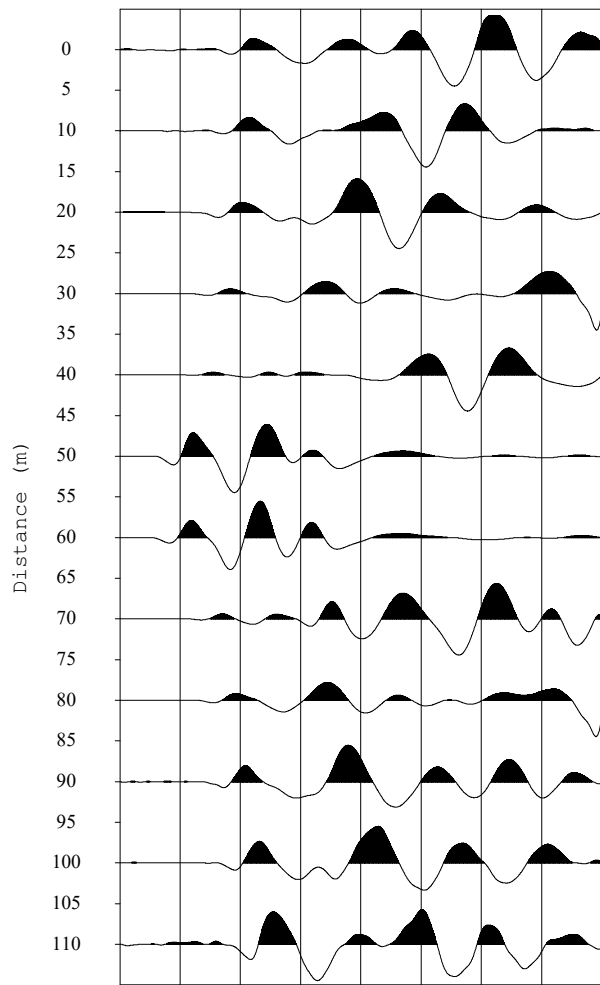
0 25 50 75 100 125 150 175 200



Source= 55.0m

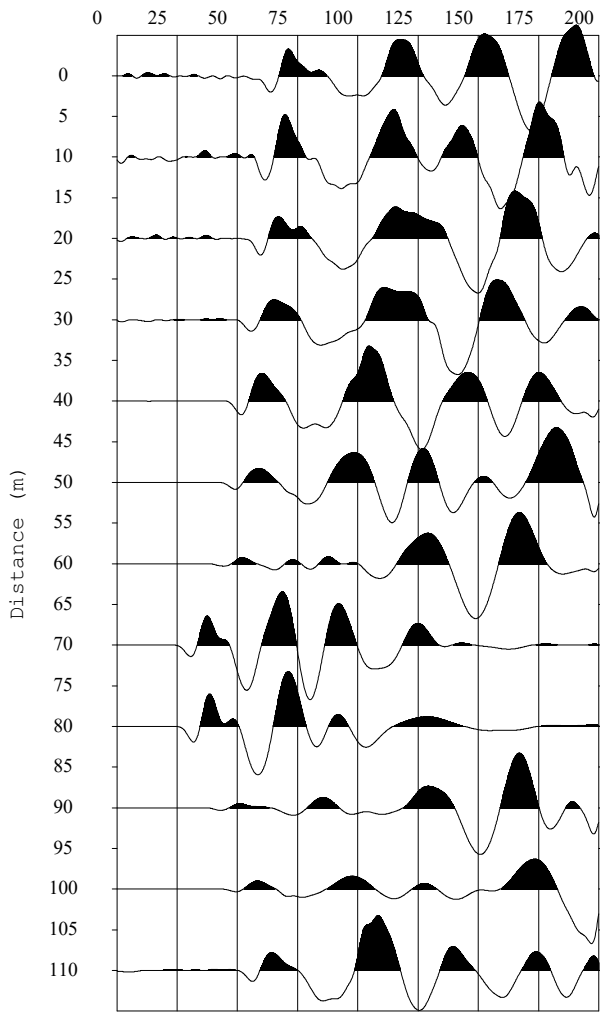
Time (msec)

0 25 50 75 100 125 150 175 200



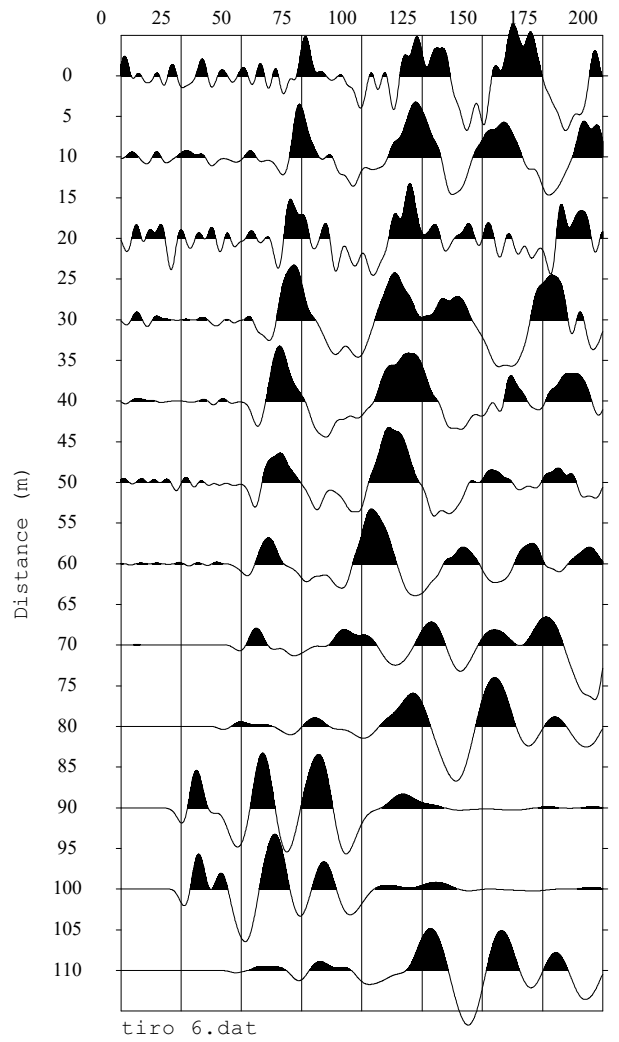
Source=75.0m

Time (msec)



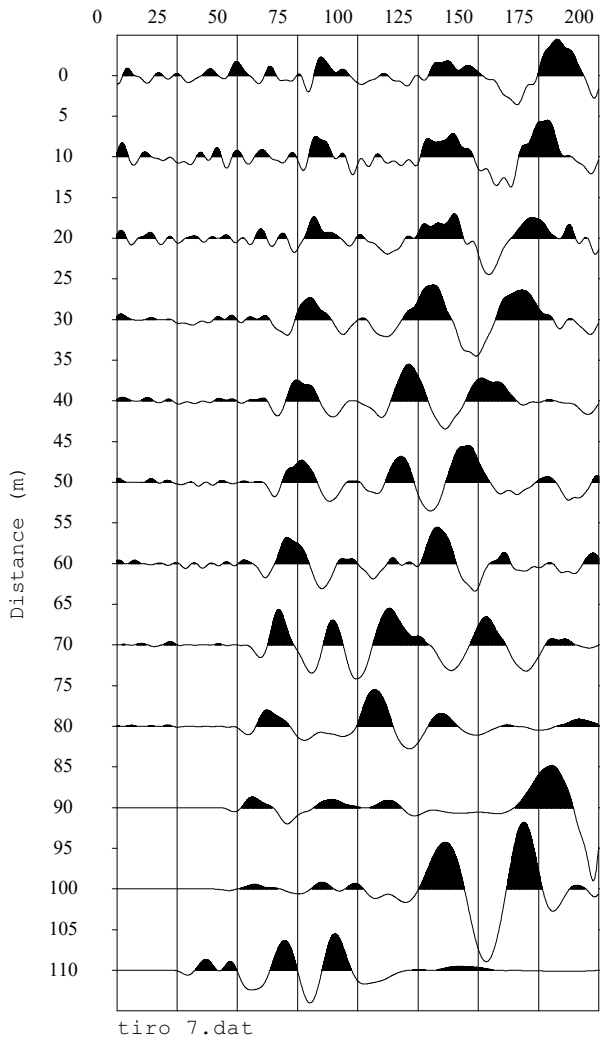
Source=95.0m

Time (msec)



Source=115.0m

Time (msec)



BASE SISMICA 2125



INPUT DATA BS 2125

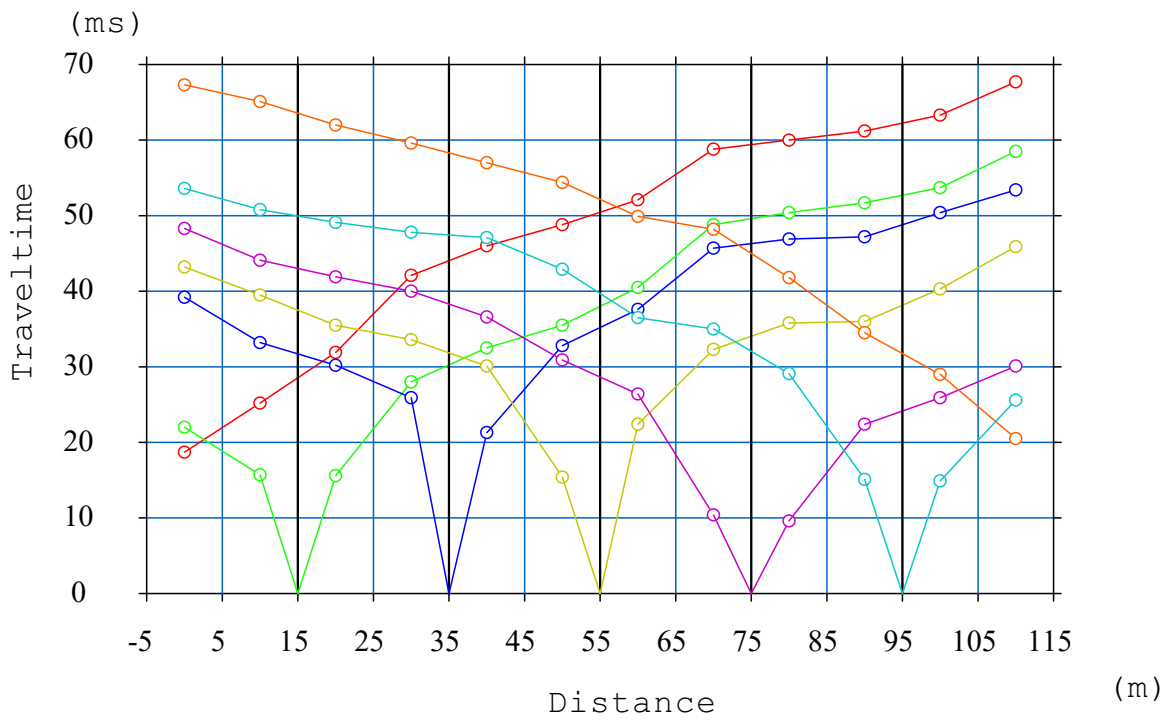
The spread contains 7 shotpoints and 12 geophones

SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0	0
2	1.20	15.00	0	0
3	1.20	35.00	0	0
4	0.00	55.00	0	0
5	-2.10	75.00	0	0
6	-4.28	95.00	0	0
7	-4.20	115.00	0	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	0.15	0.00	0	18.77 1	22.01 1	39.29 1	43.29 1	48.33 1	53.67 1	67.32 1
2	0.90	10.00	0	25.25 1	15.75 1	33.21 1	39.51 1	44.10 1	50.83 1	65.10 1
3	1.50	20.00	0	32.00 1	15.66 1	30.29 1	35.55 1	41.94 1	49.11 1	62.01 1
4	1.50	30.00	0	42.12 1	28.08 1	25.92 1	33.66 1	40.05 1	47.83 1	59.67 1
5	0.90	40.00	0	46.04 1	32.58 1	21.33 1	30.15 1	36.63 1	47.16 1	57.09 1
6	0.30	50.00	0	48.87 1	35.55 1	32.85 1	15.48 1	30.96 1	42.93 1	54.48 1
7	-0.30	60.00	0	52.11 1	40.59 1	37.62 1	22.41 1	26.46 1	36.56 1	49.99 1
8	-1.50	70.00	0	58.86 1	48.87 1	45.72 1	32.31 1	10.44 1	35.10 1	48.25 1
9	-2.70	80.00	0	60.08 1	50.49 1	46.98 1	35.82 1	9.63 1	29.18 1	41.81 1
10	-3.90	90.00	0	61.29 1	51.72 1	47.25 1	36.09 1	22.41 1	15.20 1	34.57 1
11	-4.65	100.00	0	63.32 1	53.73 1	50.49 1	40.32 1	25.92 1	14.94 1	29.09 1
12	-4.20	110.00	0	67.77 1	58.50 1	53.46 1	45.99 1	30.15 1	25.65 1	20.52 1

OUTPUT DATA BS 2125

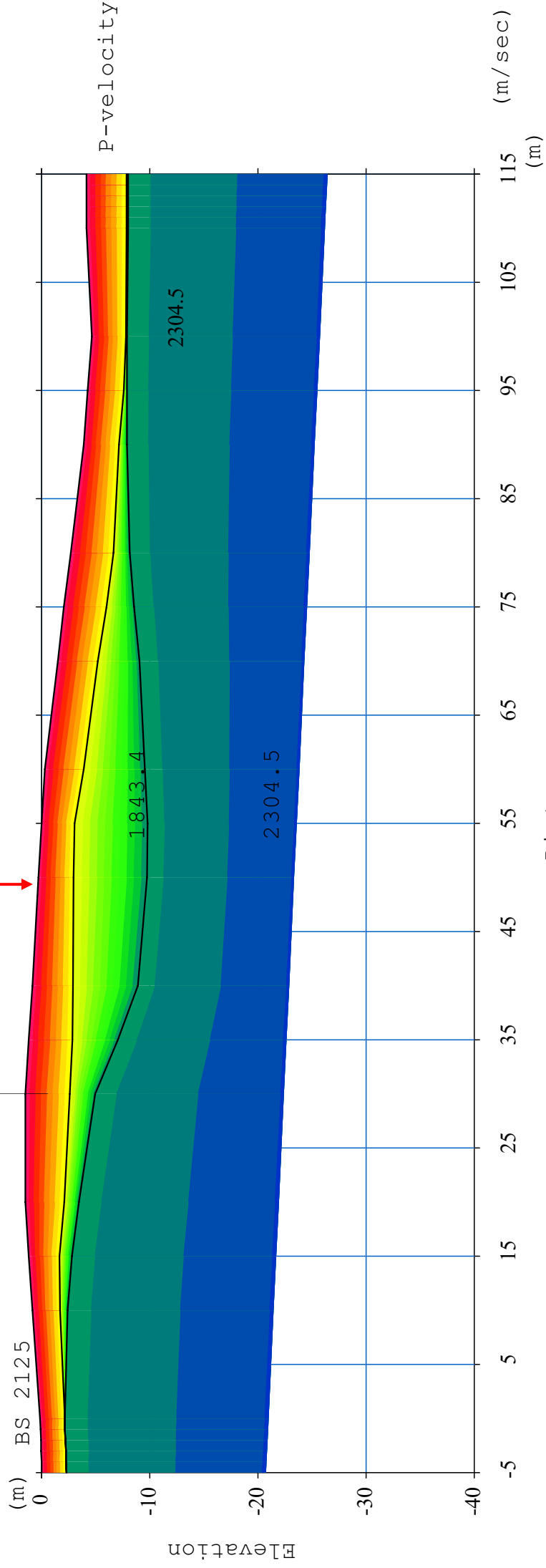
SP	X-loc	Layer 2	Layer 3
1	-5.00	2.90	7.77
2	15.00	3.25	4.41
3	35.00	4.04	9.70
4	55.00	3.16	14.00
5	75.00	4.11	8.63
6	95.00	3.45	3.94
7	115.00	2.72	2.90
Geo			
1	0.00	3.03	4.29
2	10.00	3.12	4.38
3	20.00	3.85	5.22
4	30.00	4.18	7.03
5	40.00	3.87	12.42
6	50.00	3.31	13.78
7	60.00	3.81	13.08
8	70.00	3.92	10.62
9	80.00	4.11	6.88
10	90.00	3.43	4.86
11	100.00	2.98	3.20
12	110.0	3.0	3.39



BS2124



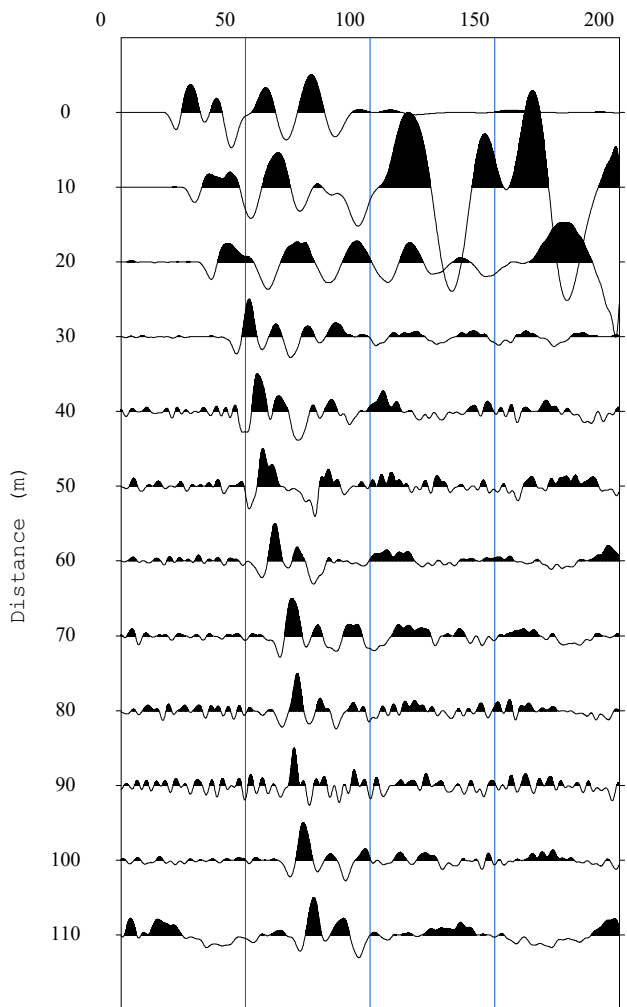
333.2



Scale = 1/500

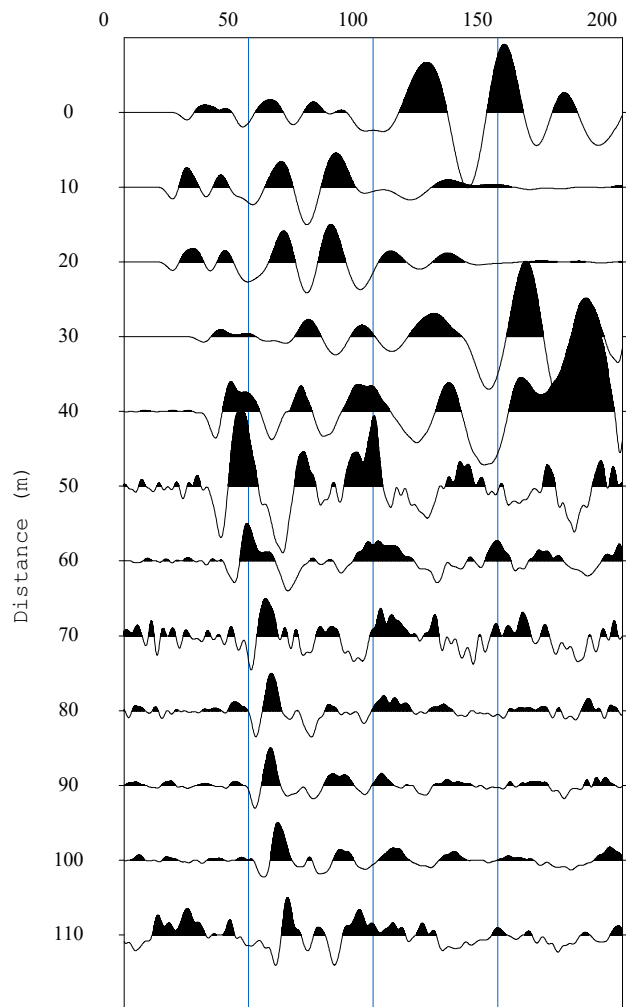
Source=-5.0m

Time (msec)



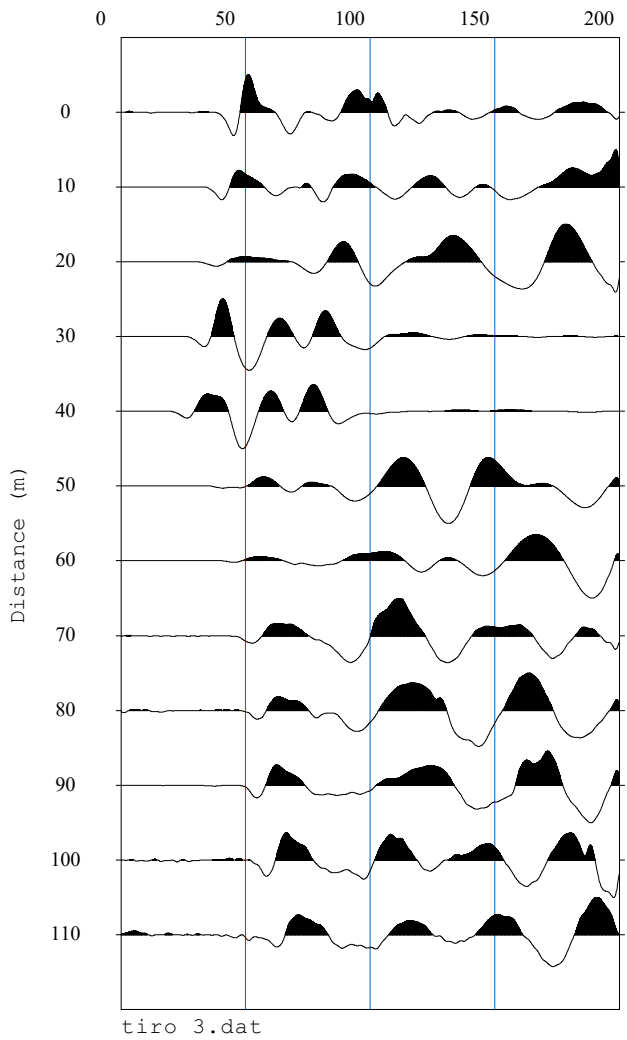
Source=15.0m

Time (msec)



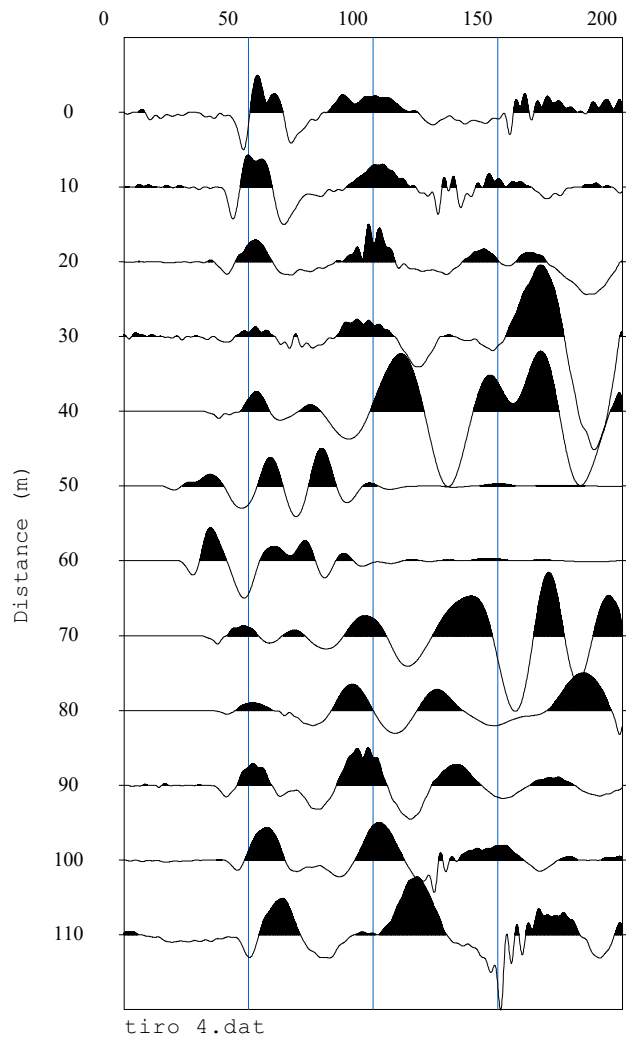
Source=35.0m

Time (msec)



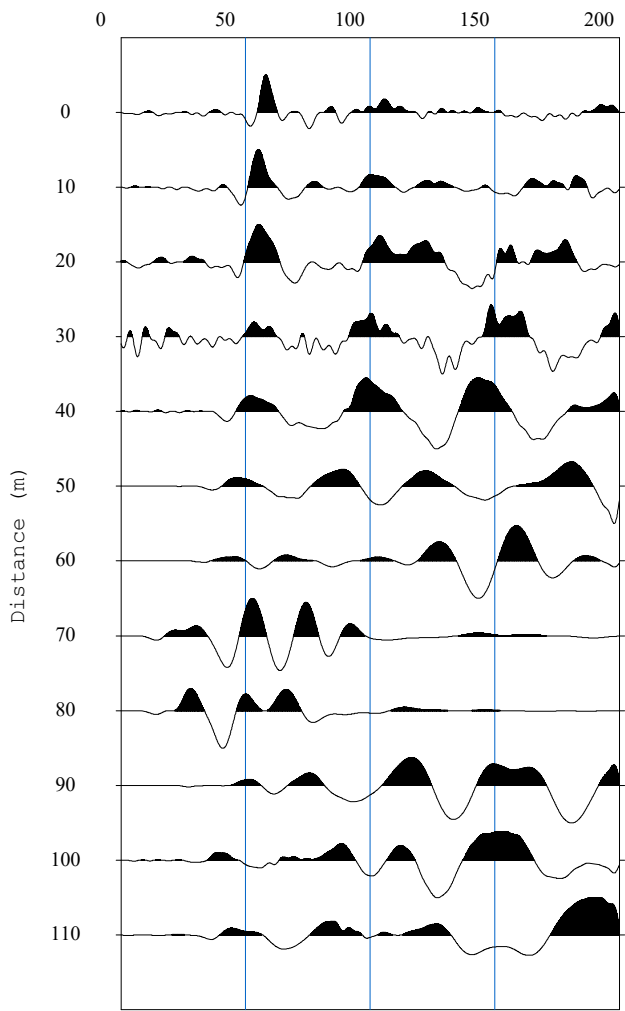
Source=55.0m

Time (msec)



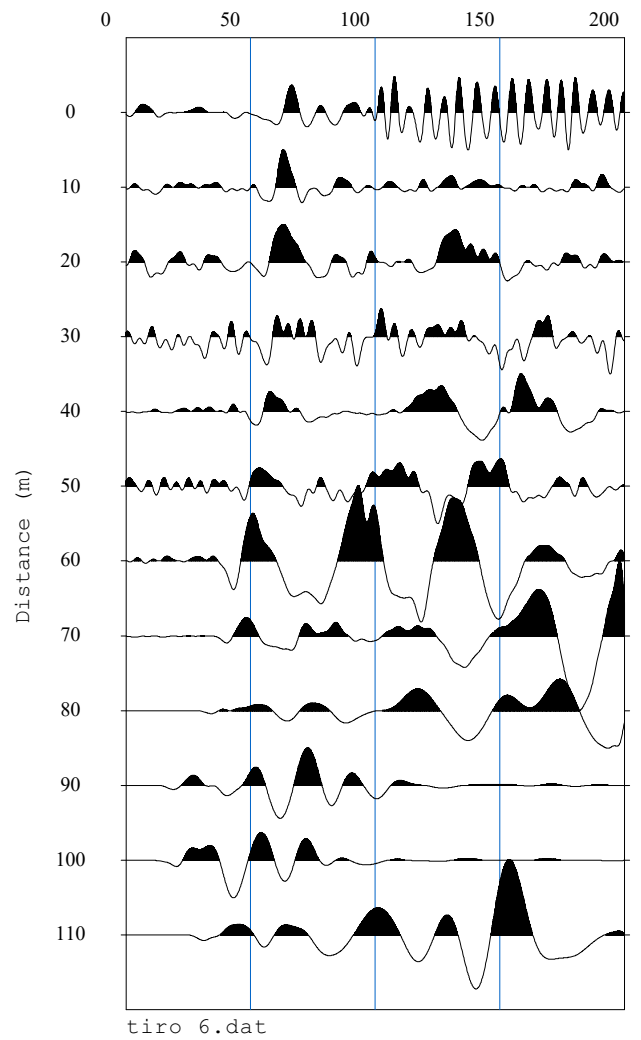
Source= 75.0m

Time (msec)



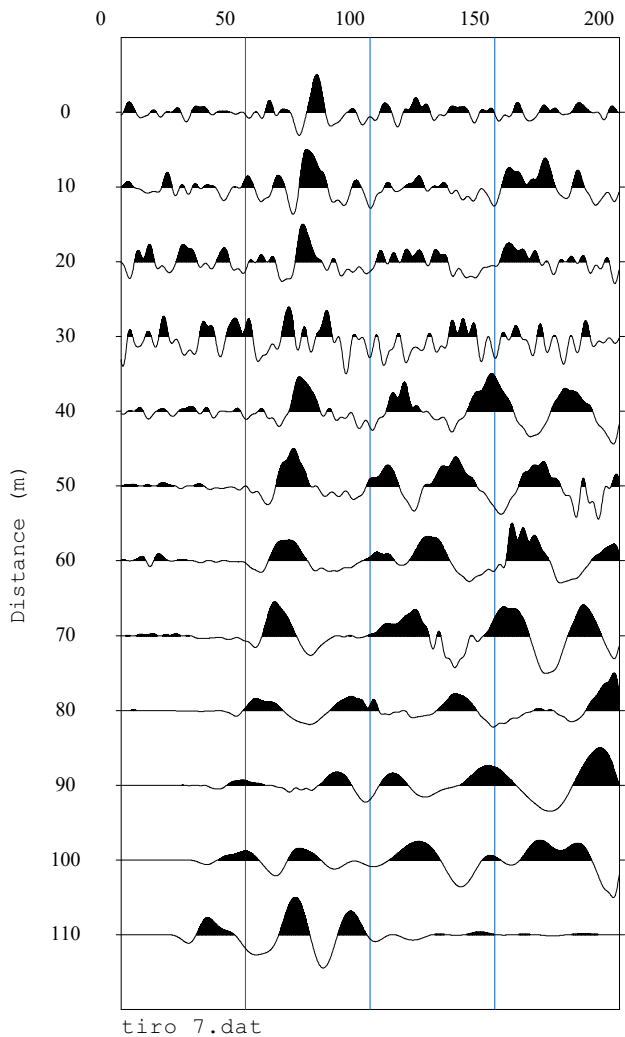
Source= 95.0m

Time (msec)



Source=115.0m

Time (msec)



BASE SISMICA 2126



INPUT DATA BS 2126

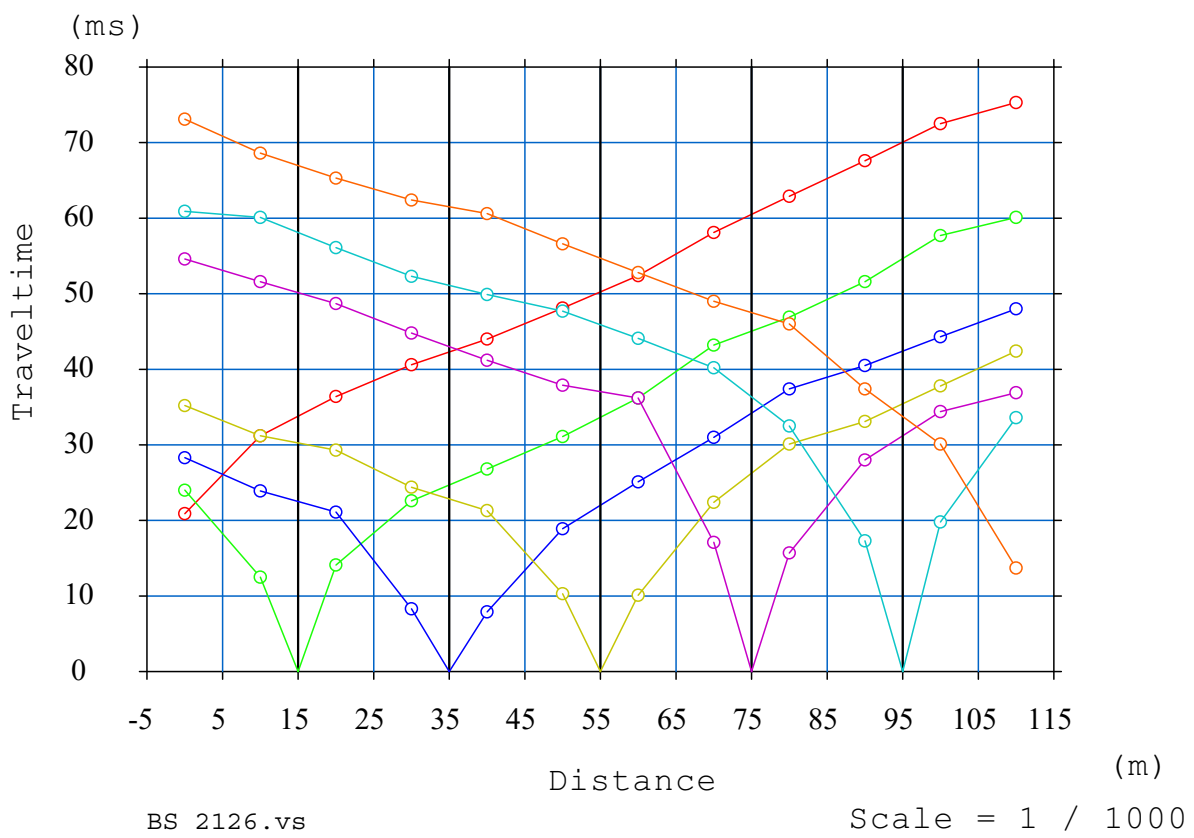
The spread contains 7 shotpoints and 12 geophones

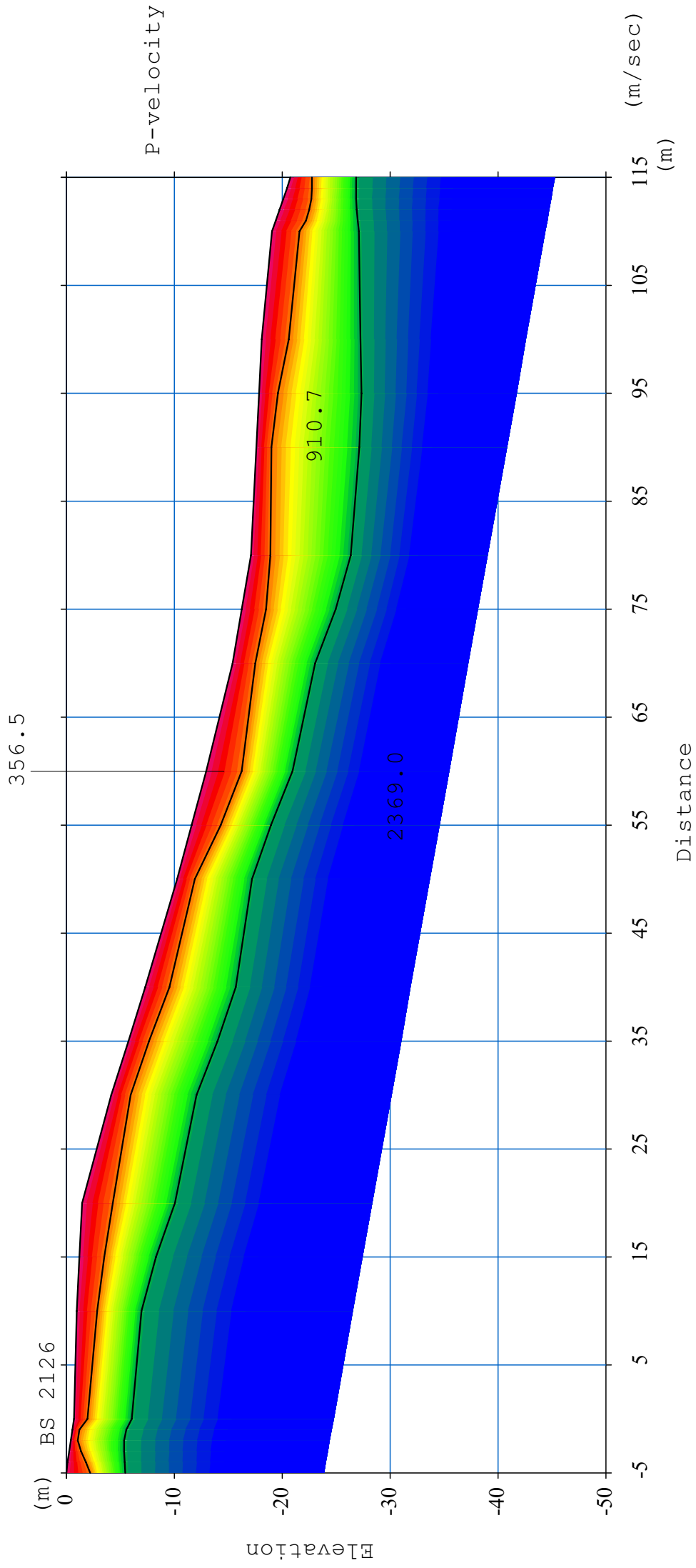
SP	Elev	X-loc	Y-Loc	Depth
1	0.00	-5.00	0.00	0
2	-1.22	15.00	0.00	0
3	-5.75	35.00	0.00	0
4	-11.62	55.00	0.00	0
5	-16.27	75.00	0.00	0
6	-17.86	95.00	0.00	0
7	-20.80	115.00	0.00	0

Geo	Elev	X-loc	Y-Loc	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7
1	-0.73	0.00	0.00	21.00 1	24.03 1	28.38 1	35.28 1	54.68 1	60.93 1	73.17 1
2	-0.98	10.00	0.00	31.29 1	12.51 1	23.91 1	31.23 1	51.61 1	60.12 1	68.67 1
3	-1.47	20.00	0.00	36.49 1	14.12 1	21.12 1	29.34 1	48.73 1	56.18 1	65.33 1
4	-4.16	30.00	0.00	40.61 1	22.64 1	8.35 1	24.49 1	44.82 1	52.38 1	62.50 1
5	-7.34	40.00	0.00	44.09 1	26.88 1	7.96 1	21.33 1	41.21 1	49.95 1	60.66 1
6	-10.28	50.00	0.00	48.12 1	31.12 1	18.93 1	10.39 1	37.98 1	47.73 1	56.64 1
7	-12.97	60.00	0.00	52.49 1	36.25 1	25.11 1	10.17 1	36.22 1	44.10 1	52.81 1
8	-15.42	70.00	0.00	58.20 1	43.22 1	31.05 1	22.41 1	17.10 1	40.25 1	49.01 1
9	-17.13	80.00	0.00	62.91 1	46.98 1	37.44 1	30.17 1	15.75 1	32.58 1	46.02 1
10	-17.62	90.00	0.00	67.60 1	51.64 1	40.59 1	33.12 1	28.03 1	17.37 1	37.44 1
11	-18.11	100.00	0.00	72.59 1	57.73 1	44.37 1	37.89 1	34.44 1	19.80 1	30.15 1
12	-19.09	110.00	0.00	75.32 1	60.12 1	48.06 1	42.48 1	36.90 1	33.66 1	13.76 1

OUTPUT DATA BS 2126

SP	X-loc	Layer 2	Layer 3
1	-5.00	2.23	5.45
2	15.00	2.30	7.10
3	35.00	1.93	8.28
4	55.00	2.73	7.34
5	75.00	2.26	8.69
6	95.00	1.77	9.52
7	115.00	1.99	6.06
Geo			
1	0.00	1.24	5.33
2	10.00	1.92	5.98
3	20.00	2.87	8.62
4	30.00	1.79	7.92
5	40.00	2.22	8.36
6	50.00	1.63	6.95
7	60.00	3.30	8.01
8	70.00	2.08	7.65
9	80.00	1.78	9.26
10	90.00	1.40	9.56
11	100.00	2.54	9.18
12	110.00	2.55	8.04

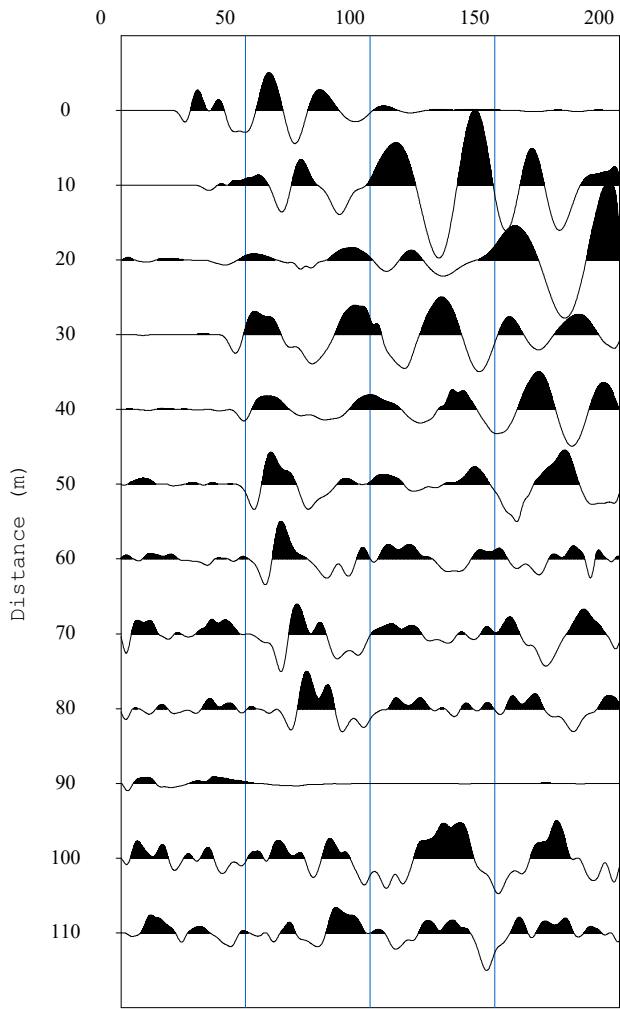




Scale 1:500

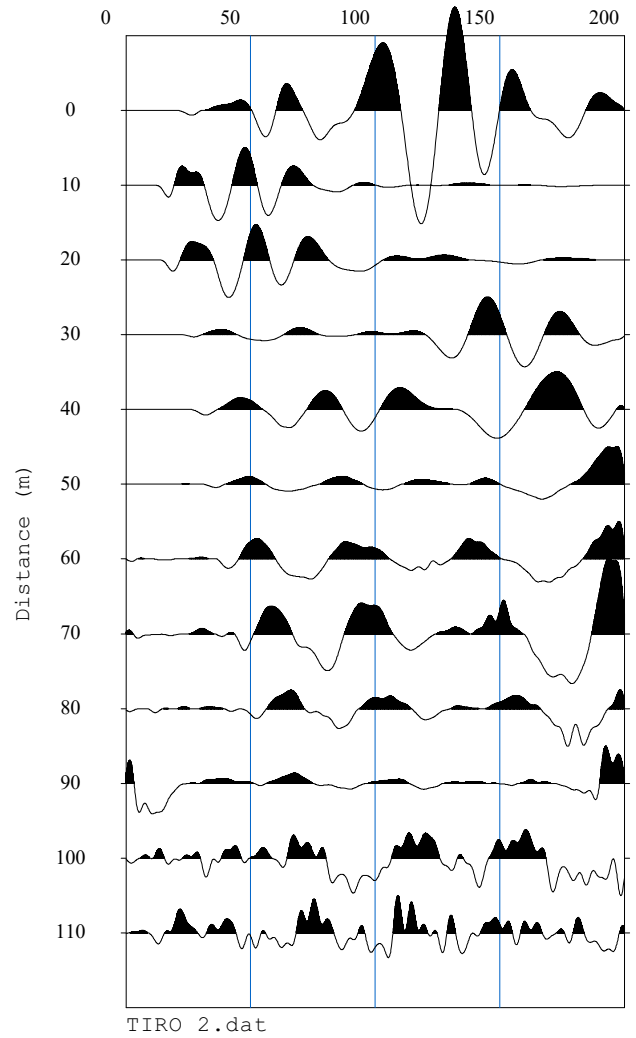
Source=-5.0m

Time (msec)



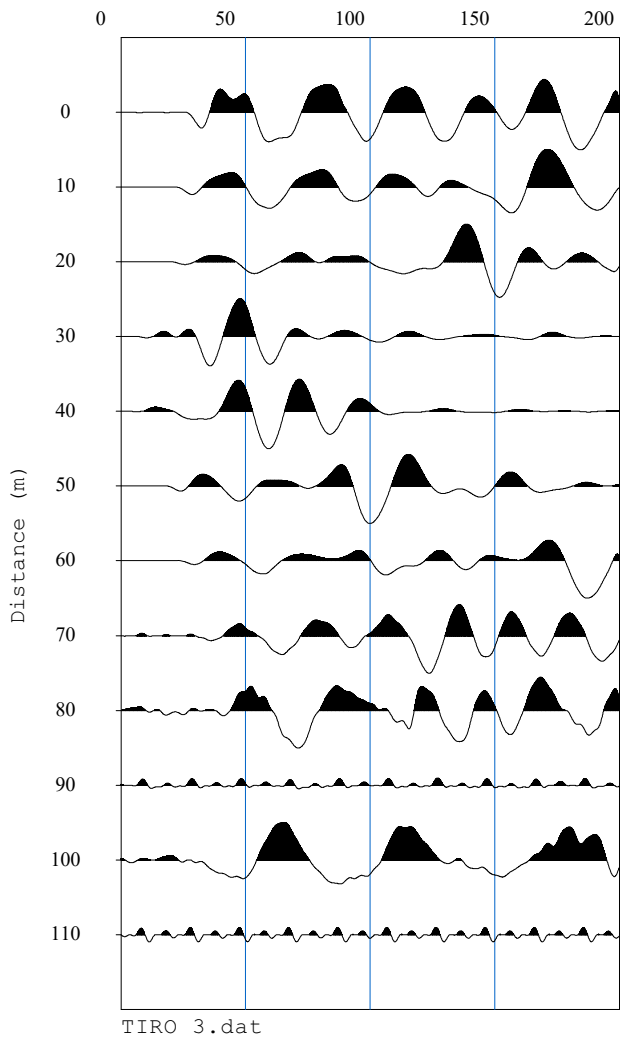
Source=15.0m

Time (msec)



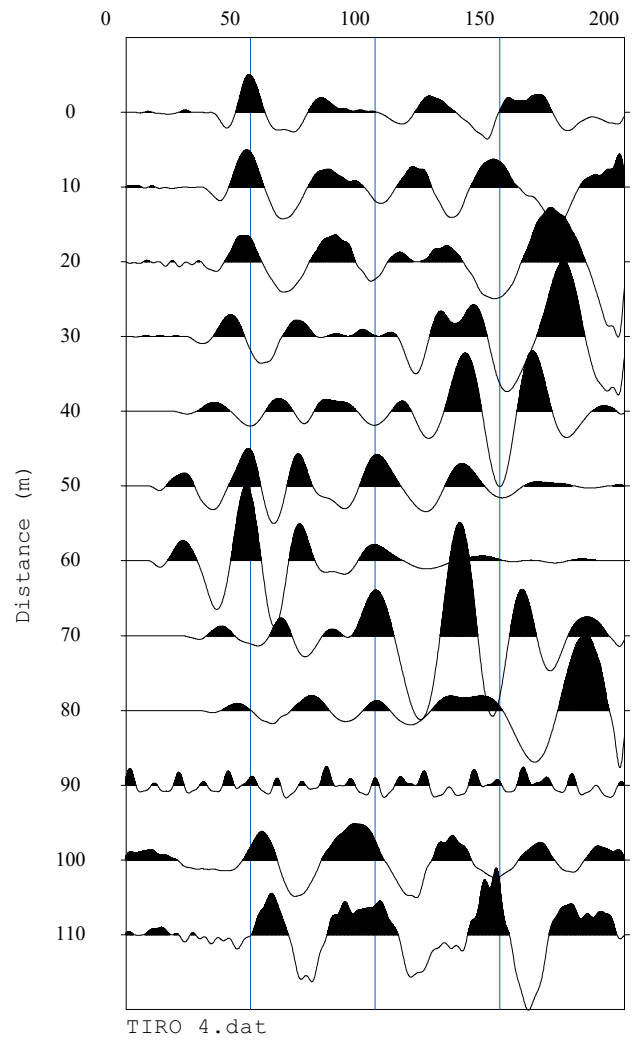
Source=35.0m

Time (msec)



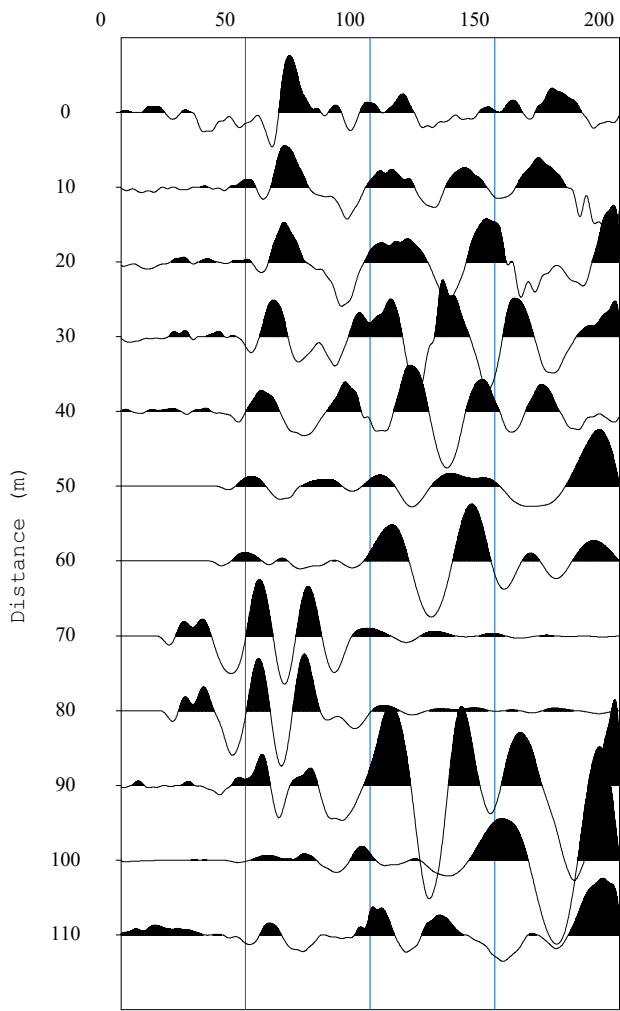
Source=55.0m

Time (msec)



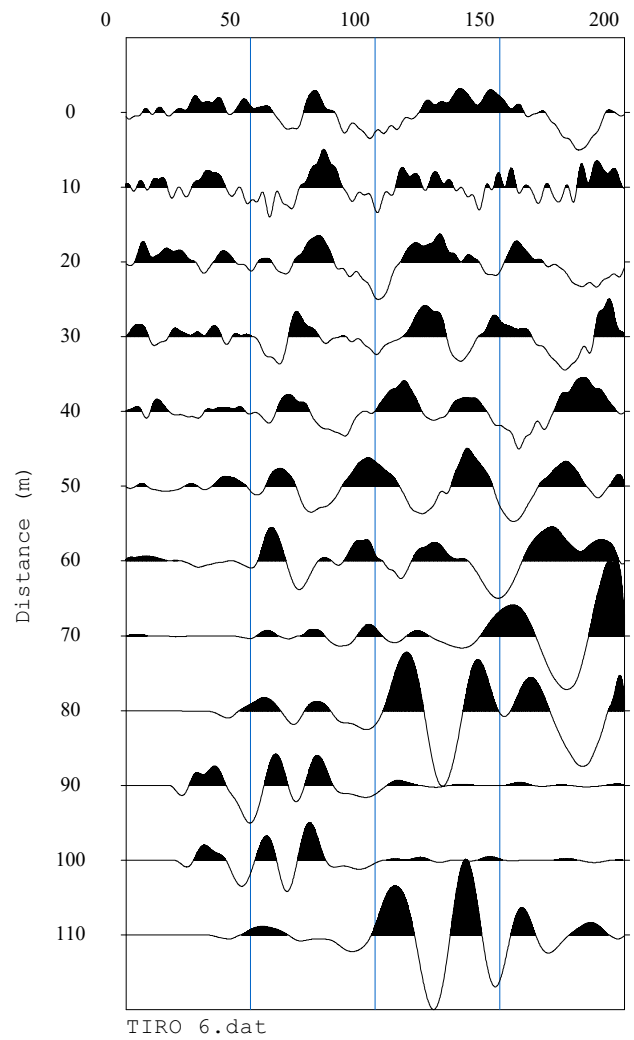
Source= 75.0m

Time (msec)



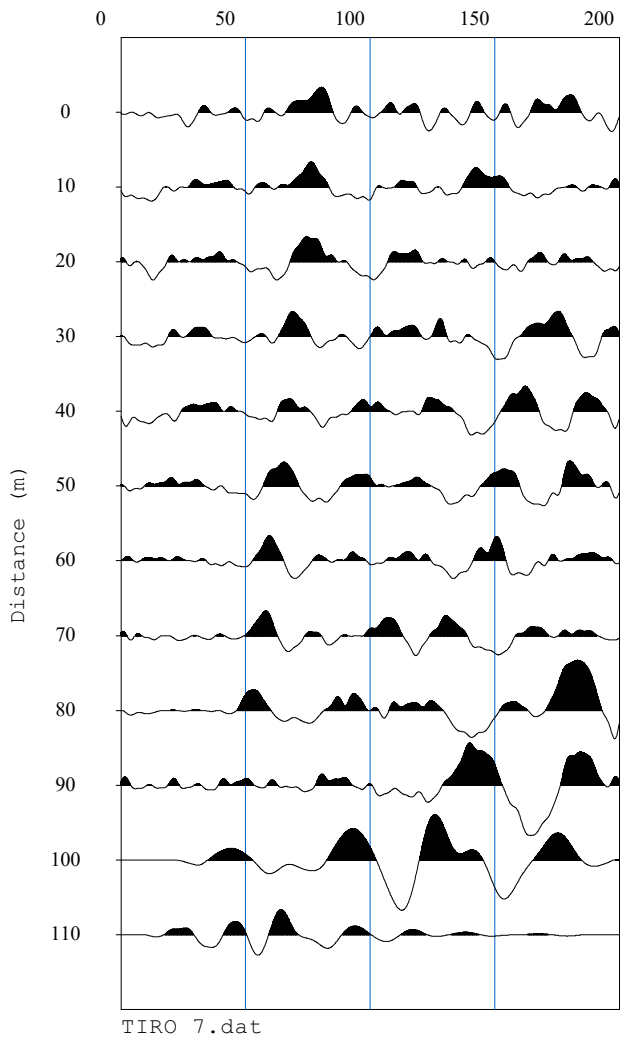
Source= 95.0m

Time (msec)



Source=115.0m

Time (msec)



PROVE SISMICHE IN FORO DOWN - HOLE

Allegati numerici e grafici

riepilogo prove down hole

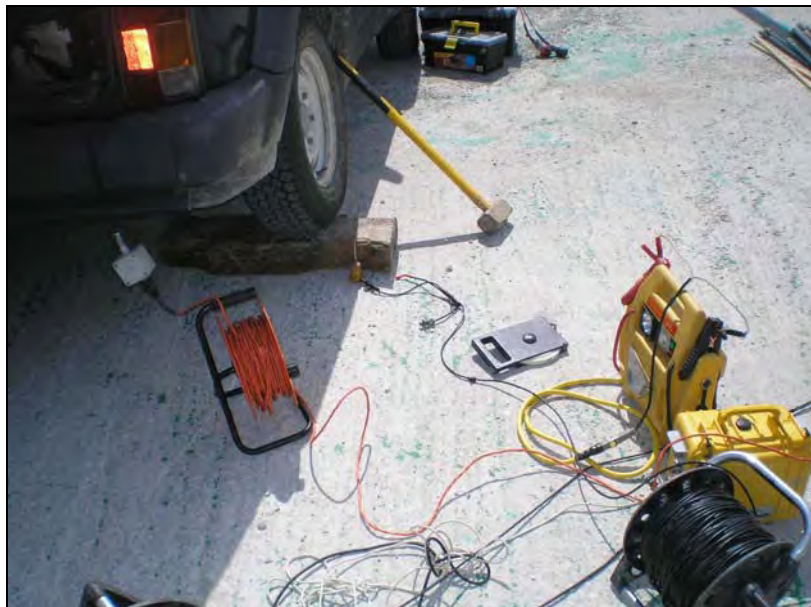
UTM (WGS84) ZONA 33T		ID		GAUSS-BOAGA		fondo foro (m.)	n. misure
EST	NORD	foro	down hole	EST	NORD		
334 329.7	4 801 121.3	SN 2101	DH 2101	2 354 334	4 801 134	30.00	30
335 694.8	4 798 098.0	SN 2109	DH 2109	2 355 700	4 798 111	30.00	30
336 854.0	4 793 258.0	SN 2120	DH 2120	2 356 859	4 793 271	30.00	30
341 357.0	4 774 663.0	SN 2133	DH 2133	2 361 363	4 774 675	31.00	31

TOTALE MISURE: 121

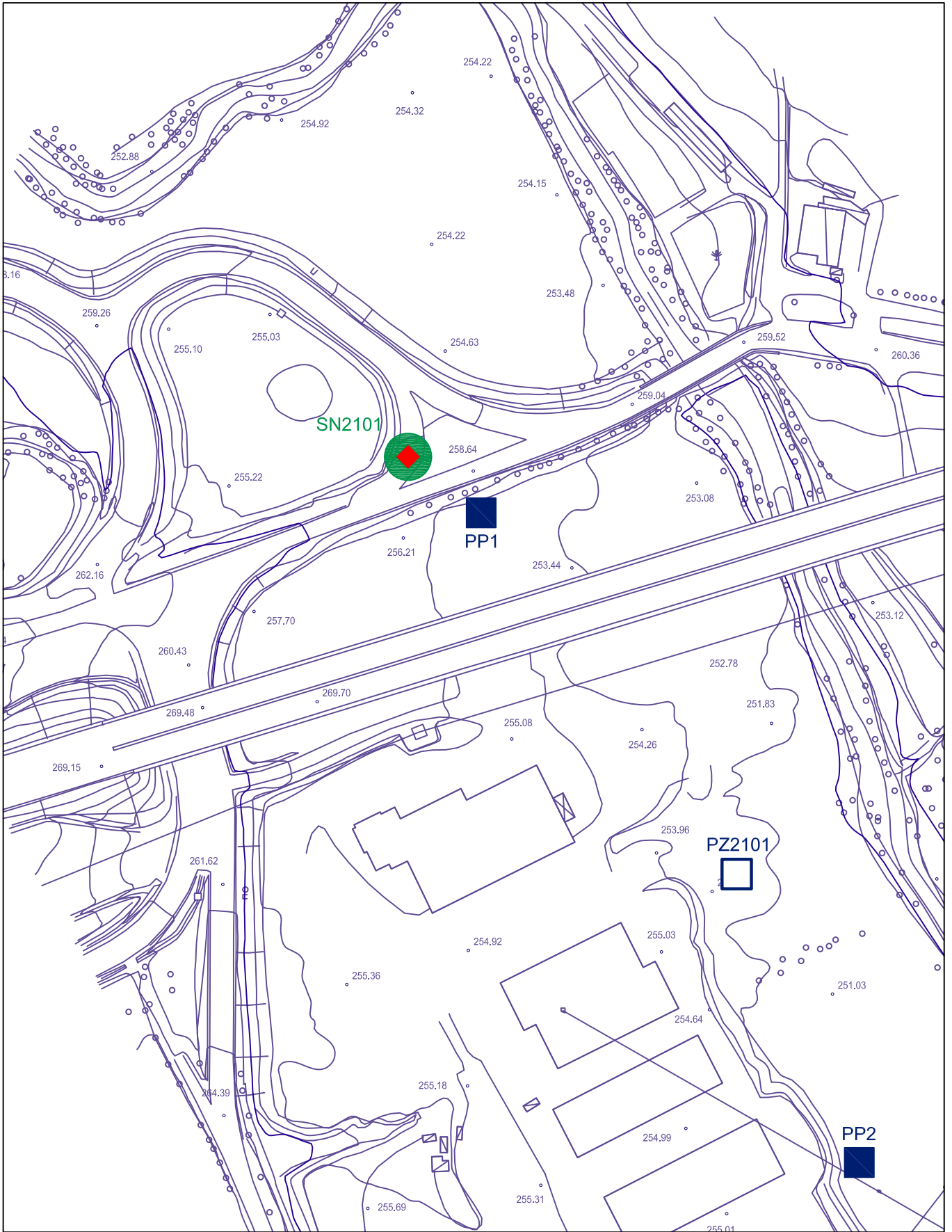
DOWN HOLE 2101



veduta d'insieme della stazione di misura



dispositivo di battuta



Misure sismiche in foro

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2101

orientamento:

Offset dal foro (Vs): 4.45 metri

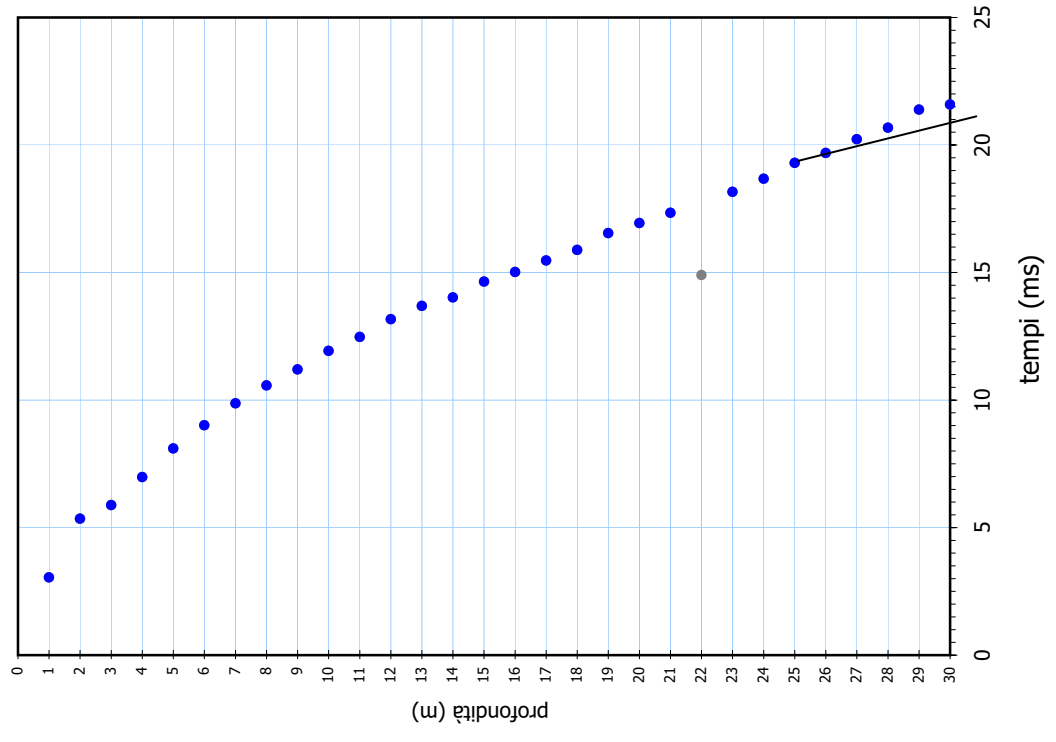
Offset dal foro (Vp): 4.45 metri

Numero di misure: 30

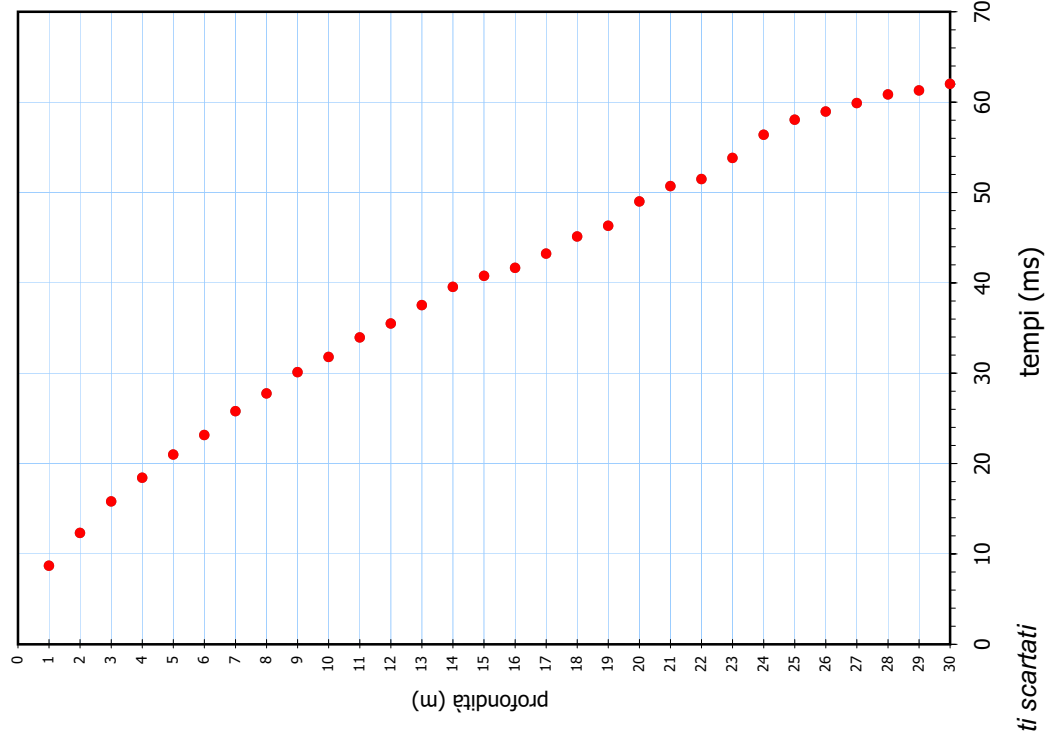
Misure in foro	Profondità (metri)	Tempi Sperimentali		Tempi Reali	
		Onda P (ms)	Onda S (ms)	Onda P (ms)	Onda S (ms)
1	1.0	13.920	39.720	3.052	8.709
2	2.0	13.067	30.120	5.357	12.347
3	3.0	10.533	28.320	5.888	15.831
4	4.0	10.453	27.600	6.988	18.451
5	5.0	10.853	28.140	8.107	21.020
6	6.0	11.227	28.860	9.017	23.180
7	7.0	11.707	30.578	9.879	25.805
8	8.0	12.107	31.793	10.580	27.783
9	9.0	12.507	33.615	11.211	30.133
10	10.0	13.067	34.830	11.938	31.821
11	11.0	13.467	36.653	12.484	33.977
12	12.0	14.053	37.868	13.177	35.505
13	13.0	14.480	39.690	13.700	37.551
14	14.0	14.720	41.513	14.028	39.562
15	15.0	15.280	42.540	14.649	40.783
16	16.0	15.600	43.260	15.030	41.678
17	17.0	16.000	44.700	15.478	43.243
18	18.0	16.373	46.500	15.895	45.141
19	19.0	16.998	47.580	16.550	46.326
20	20.0	17.359	50.220	16.945	49.021
21	21.0	17.730	51.840	17.345	50.714
22	22.0	15.210	52.544	14.908	51.501
23	23.0	18.505	54.840	18.168	53.842
24	24.0	19.002	57.360	18.684	56.399
25	25.0	19.611	58.980	19.307	58.067
26	26.0	19.982	59.820	19.696	58.963
27	27.0	20.504	60.720	20.231	59.912
28	28.0	20.946	61.620	20.687	60.856
29	29.0	21.642	62.030	21.392	61.312
30	30.0	21.829	62.720	21.593	62.041

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2101
PROFILO TEMPI DI ARRIVO - PROFONDITA'

Primi arrivi



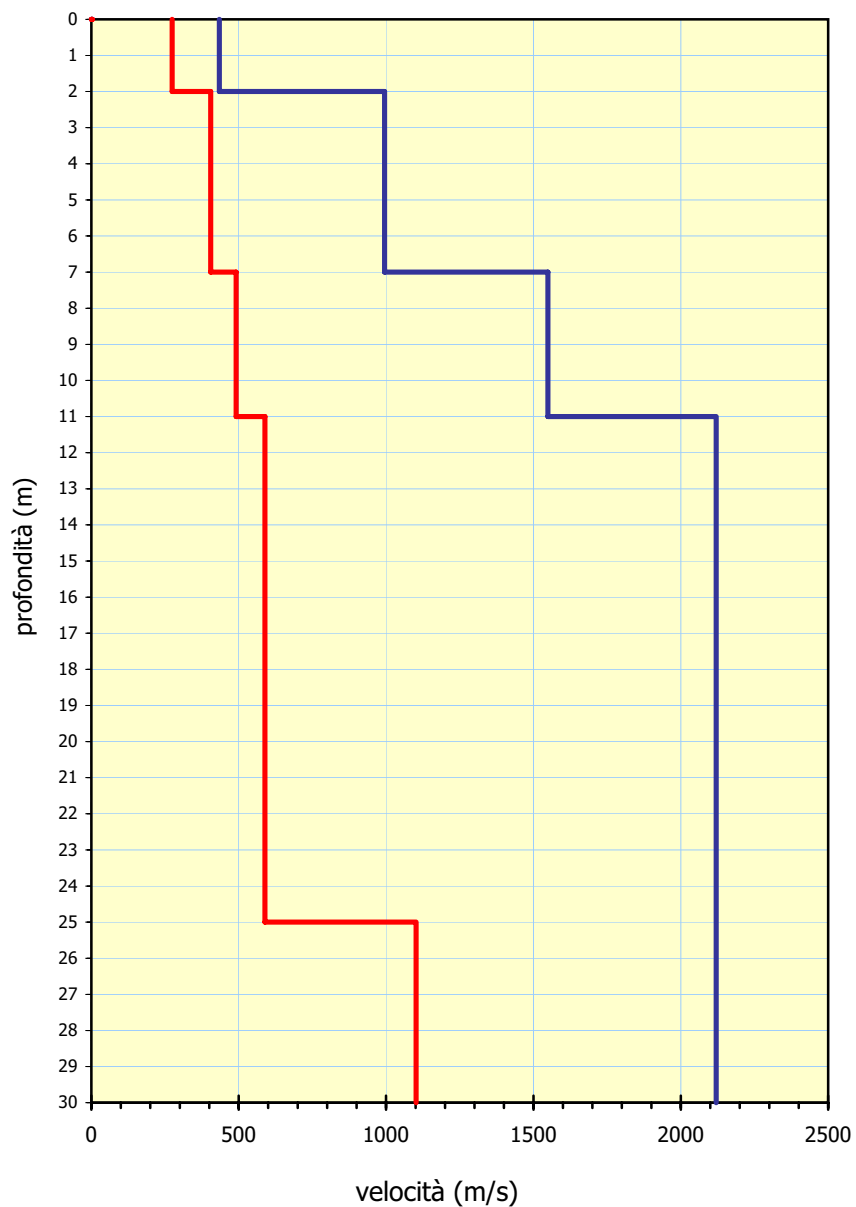
Secondi arrivi



● punti scartati

**GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
"Pedemontana" LOTTO 2.2.1 * DH 2101**

PROFILO VELOCITA' - PROFONDITA'



Vs

Vp

INDAGINE DOWN-HOLE - PROSPETTO RIEPILOGATIVO DEI MODULI ELASTICI

sismostrati da m a m		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)	Rp (MPa/m*s)	Rs (MPa/m*s)
0	2	434	274	18.00	0.169	1.379.E+03	3.460.E+03	3.223.E+03	7.971.E+00	5.033.E+00
2	7	995	405	19.00	0.401	3.180.E+03	1.919.E+04	8.909.E+03	1.929.E+01	7.852.E+00
7	11	1549	491	20.00	0.444	4.920.E+03	4.897.E+04	1.421.E+04	3.161.E+01	1.002.E+01
11	25	2120	589	20.00	0.458	7.080.E+03	9.172.E+04	2.065.E+04	4.327.E+01	1.202.E+01
25	30	2120	1102	21.00	0.315	2.602.E+04	9.631.E+04	6.843.E+04	4.543.E+01	2.361.E+01



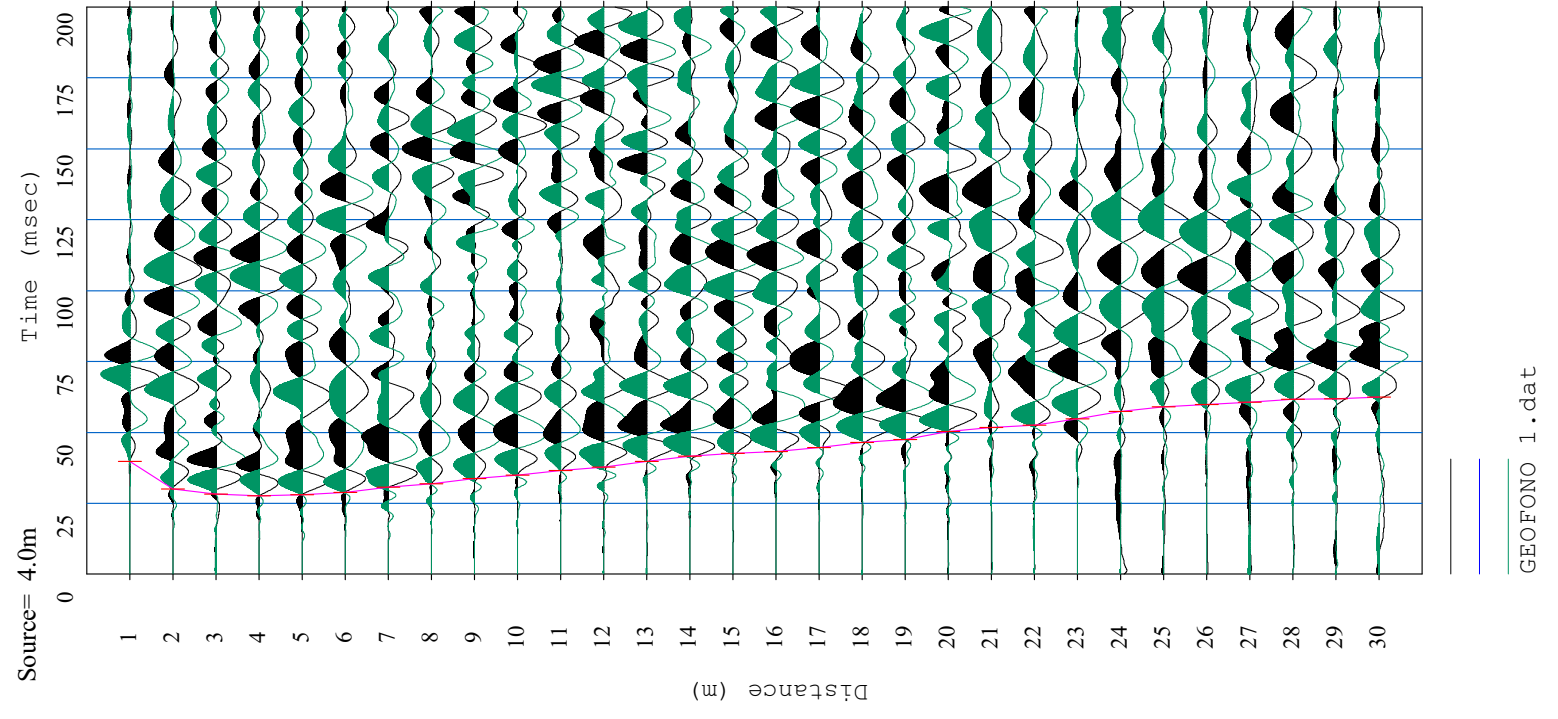
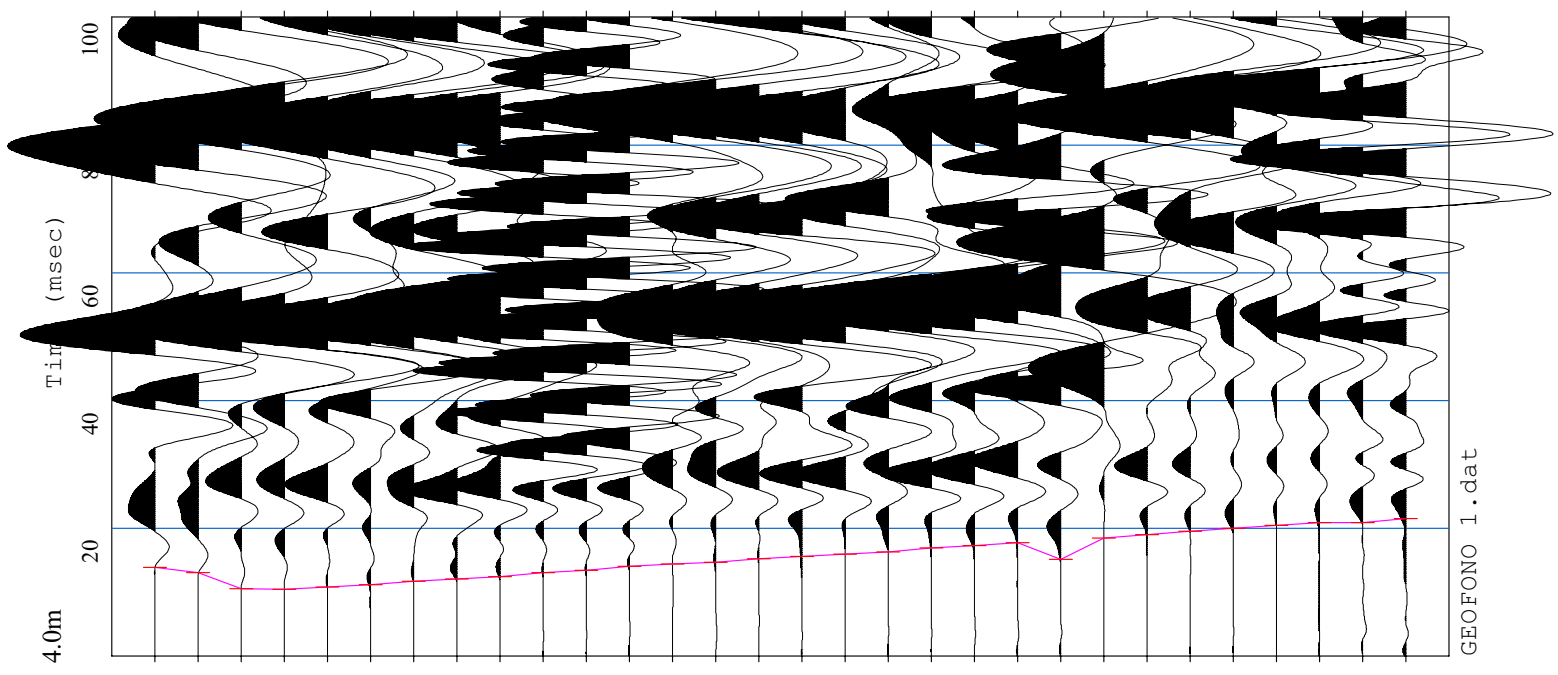
V coefficiente di Poisson
 G₀ Modulo di Taglio iniziale
 M Modulo di Compressibilità
 E Modulo di Young
 Rp, Rs Rigidità sismiche

$$V_{S30} = 534.78 \text{ m/s}$$

$$V_{S28} = 573.79 \text{ m/s}^{(*)}$$

(*) calcolato escludendo i primi 2 metri dal p.c.

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
 "Pedemontana" LOTTO 2.2.1 * DH 2101



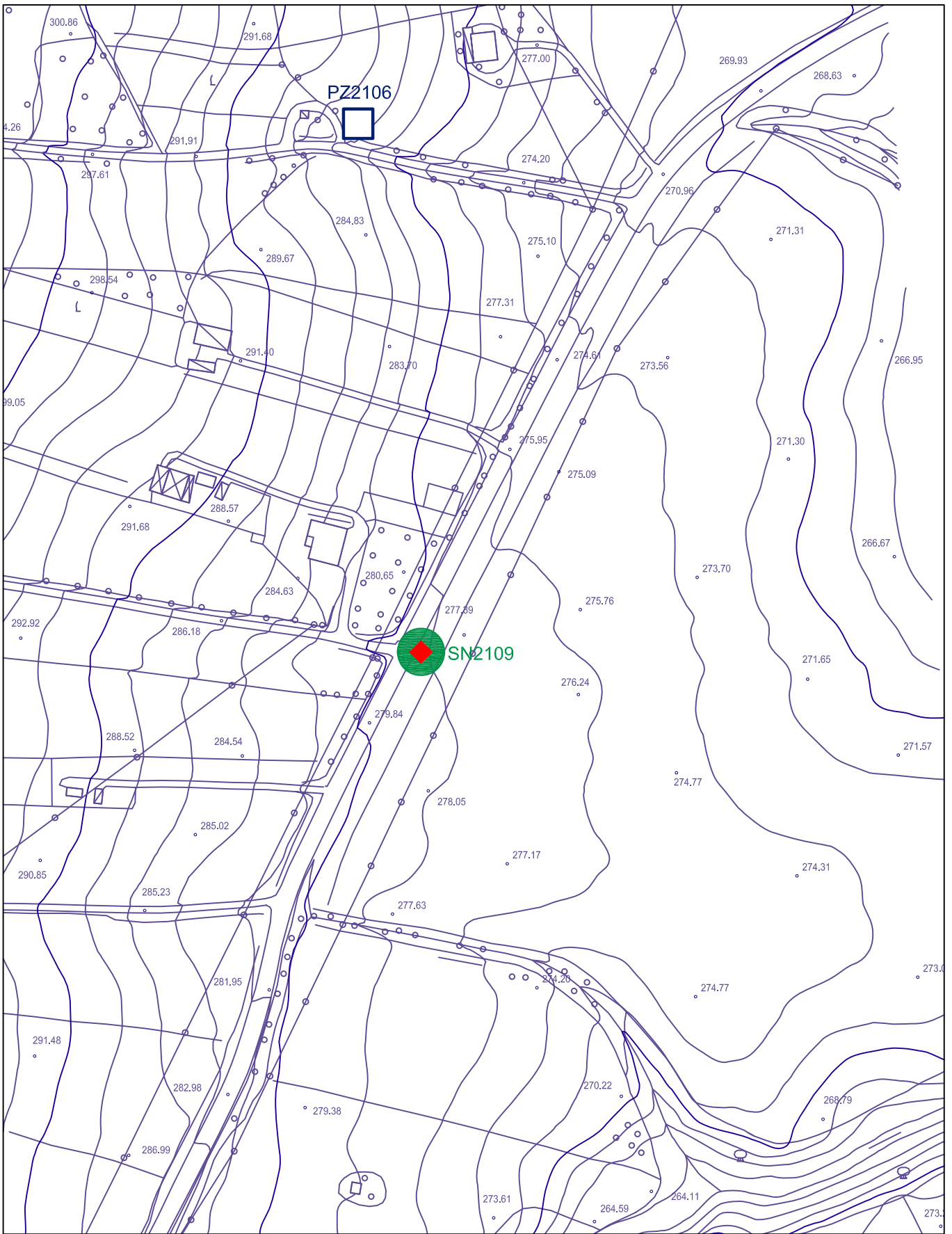
DOWN HOLE 2109



dispositivo di battuta



veduta d'insieme della stazione di misura



Misure sismiche in foro

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2109

orientamento:

Offset dal foro (Vs): 3.00 metri

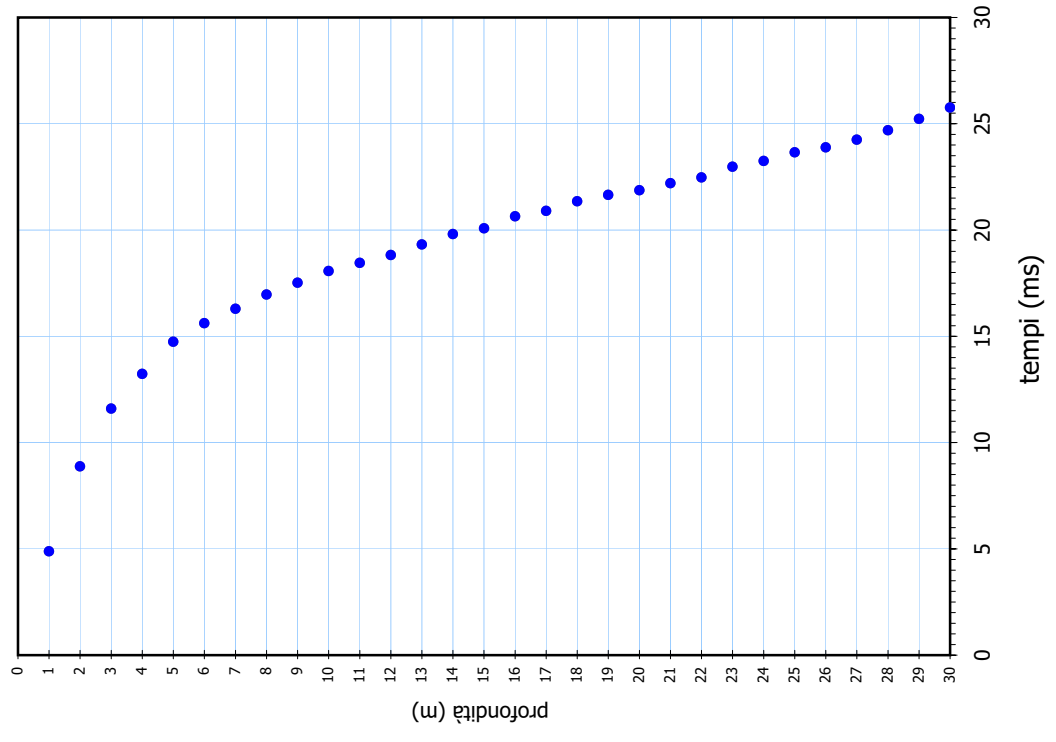
Offset dal foro (Vp): 3.00 metri

Numero di misure: 30

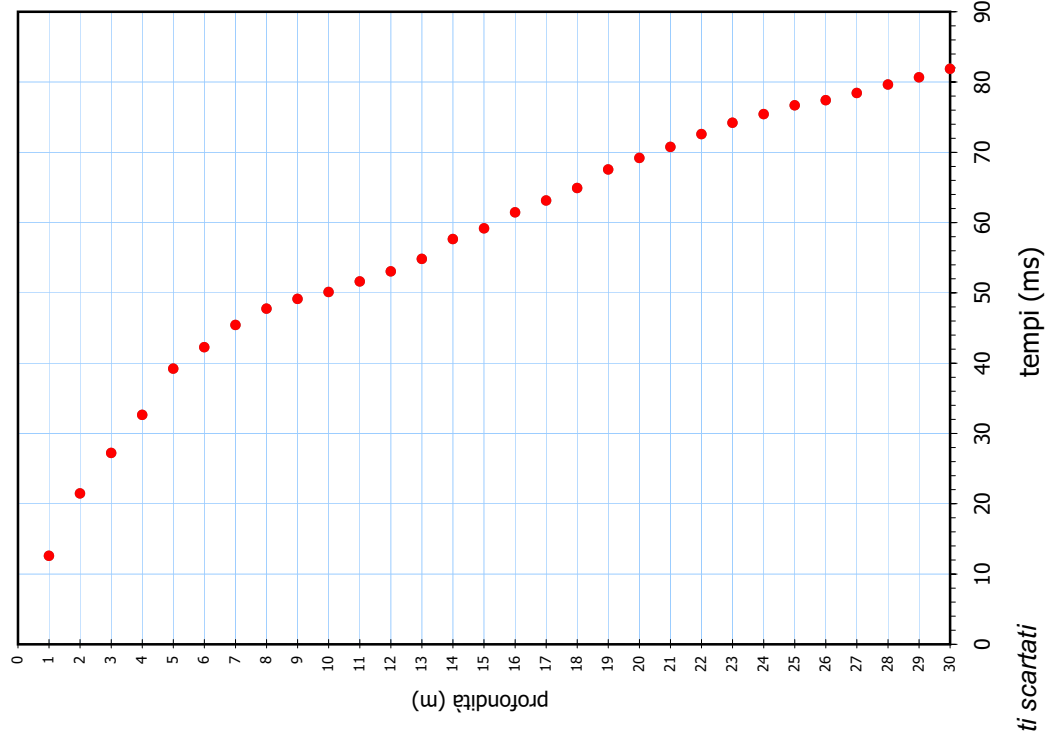
Misure in foro	Profondità (metri)	Tempi Sperimentali		Tempi Reali	
		Onda P (ms)	Onda S (ms)	Onda P (ms)	Onda S (ms)
1	1.0	15.476	39.901	4.894	12.618
2	2.0	16.022	38.716	8.887	21.476
3	3.0	16.417	38.518	11.609	27.237
4	4.0	16.549	40.823	13.239	32.658
5	5.0	17.207	45.761	14.755	39.240
6	6.0	17.471	47.276	15.626	42.285
7	7.0	17.734	49.449	16.300	45.450
8	8.0	18.129	51.029	16.975	47.780
9	9.0	18.480	51.819	17.532	49.160
10	10.0	18.875	52.346	18.079	50.138
11	11.0	19.139	53.531	18.464	51.645
12	12.0	19.407	54.716	18.828	53.082
13	13.0	19.838	56.296	19.330	54.855
14	14.0	20.269	58.996	19.819	57.686
15	15.0	20.485	60.379	20.087	59.206
16	16.0	21.011	62.551	20.652	61.480
17	17.0	21.233	64.132	20.910	63.156
18	18.0	21.655	65.844	21.361	64.948
19	19.0	21.928	68.412	21.660	67.574
20	20.0	22.123	69.992	21.879	69.217
21	21.0	22.439	71.506	22.213	70.787
22	22.0	22.689	73.284	22.481	72.612
23	23.0	23.177	74.864	22.982	74.235
24	24.0	23.440	76.049	23.259	75.462
25	25.0	23.835	77.260	23.666	76.710
26	26.0	24.055	77.959	23.896	77.445
27	27.0	24.406	78.946	24.257	78.464
28	28.0	24.845	80.132	24.704	79.676
29	29.0	25.372	81.119	25.237	80.689
30	30.0	25.898	82.304	25.770	81.896

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2109
PROFILO TEMPI DI ARRIVO - PROFONDITA'

Primi arrivi



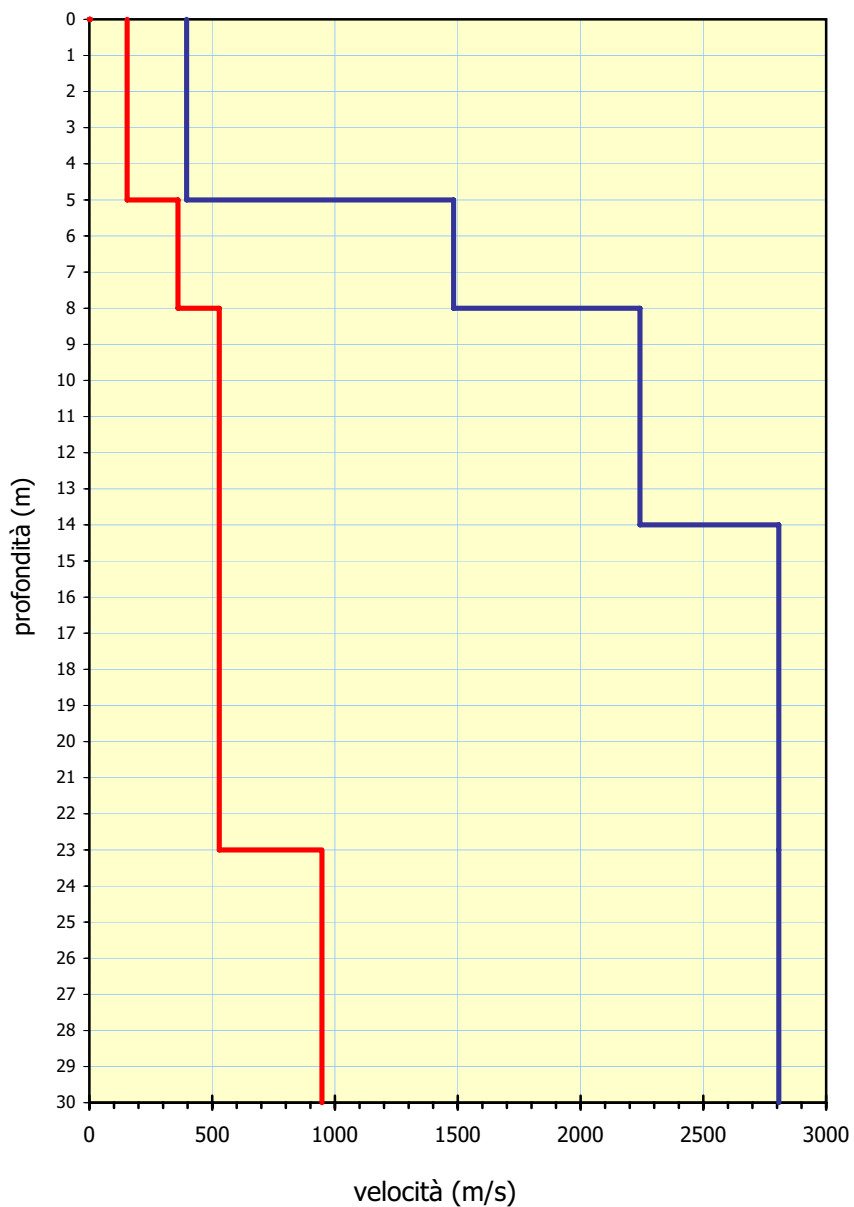
Secondi arrivi



● punti scartati

**GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
"Pedemontana" LOTTO 2.2.1 * DH 2109**

PROFILO VELOCITA' - PROFONDITA'



Vs

Vp

INDAGINE DOWN-HOLE - PROSPETTO RIEPILOGATIVO DEI MODULI ELASTICI

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)	Rp (MPa/m*s)	Rs (MPa/m*s)
da	a									
0	5	396	154	19.00	0.411	4.598.E+02	3.040.E+03	1.297.E+03	7.678.E+00	2.986.E+00
5	8	1483	361	20.00	0.469	2.660.E+03	4.488.E+04	7.811.E+03	3.027.E+01	7.367.E+00
8	14	2242	529	20.00	0.471	5.711.E+03	1.026.E+05	1.680.E+04	4.576.E+01	1.080.E+01
14	23	2807	529	20.00	0.482	5.711.E+03	1.608.E+05	1.692.E+04	5.729.E+01	1.080.E+01
23	30	2807	947	20.00	0.436	1.830.E+04	1.608.E+05	5.256.E+04	5.729.E+01	1.933.E+01



V coefficiente di Poisson
 G₀ Modulo di Taglio iniziale
 M Modulo di Compressibilità
 E Modulo di Young
 Rp, Rs Rigidità sismiche

$$V_{S30} = 392.03 \text{ m/s}$$

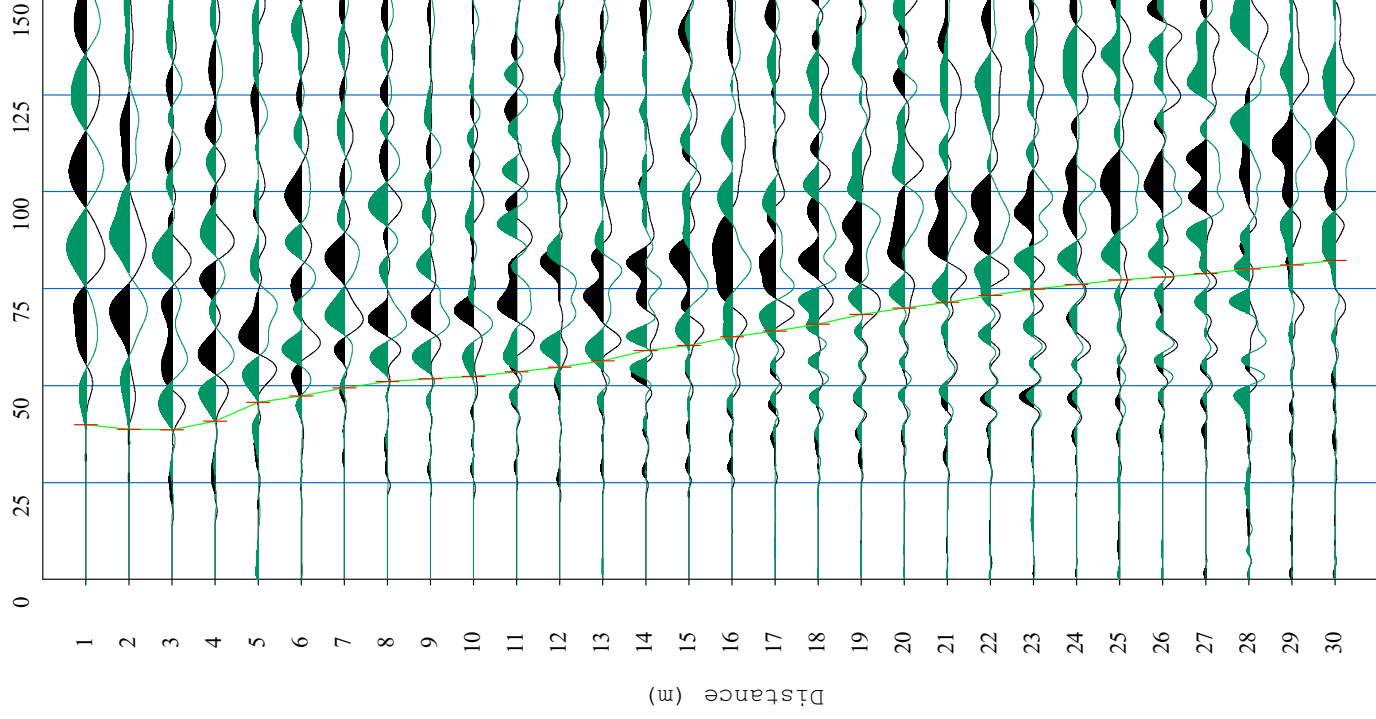
$$V_{S28} = 440.68 \text{ m/s}^{(*)}$$

(*) calcolato escludendo i primi 2 metri dal p.c.

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
 "Pedemontana" LOTTO 2.2.1 * DH 2109

Source= 3.0m

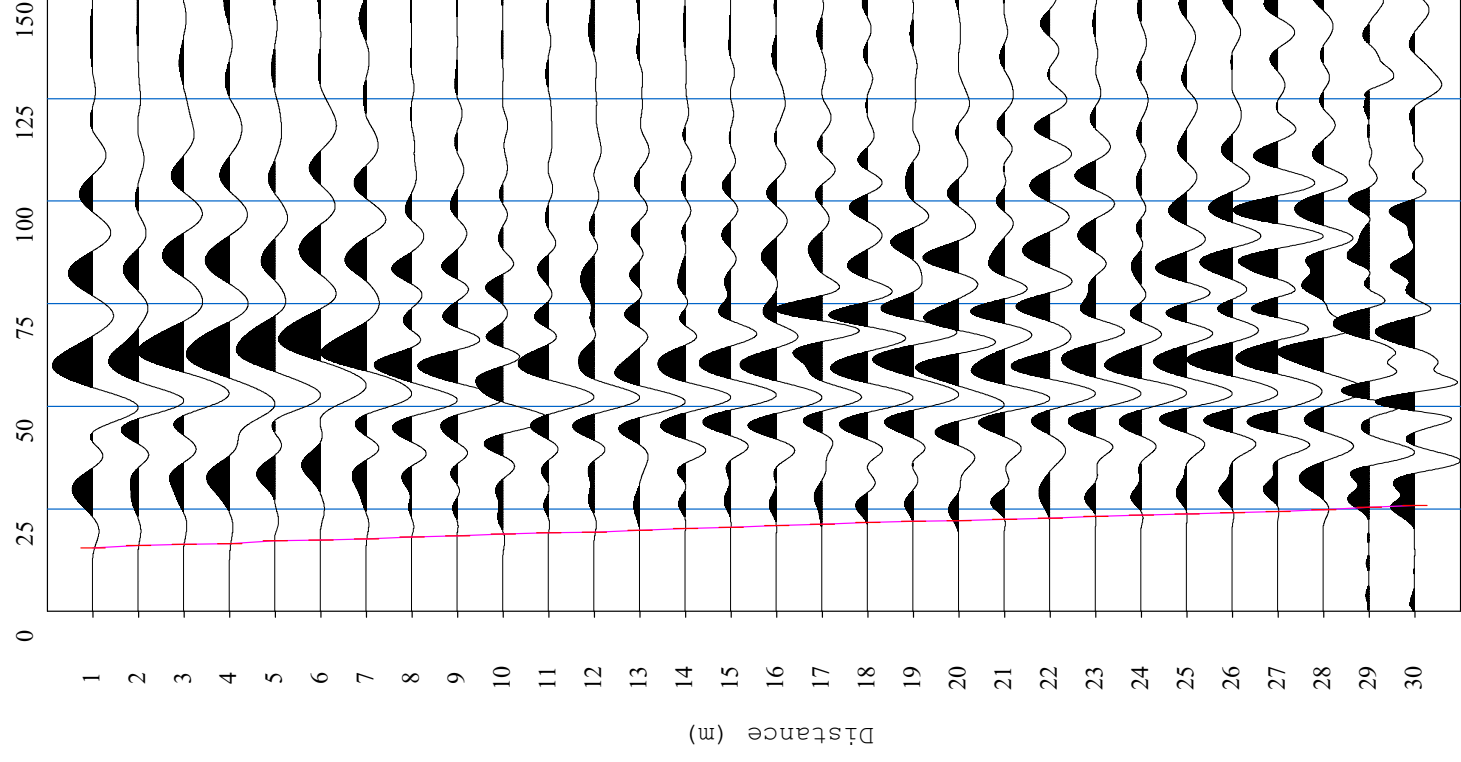
Time (msec)



geofono 1.dat

Source= 3.0m

Time (msec)

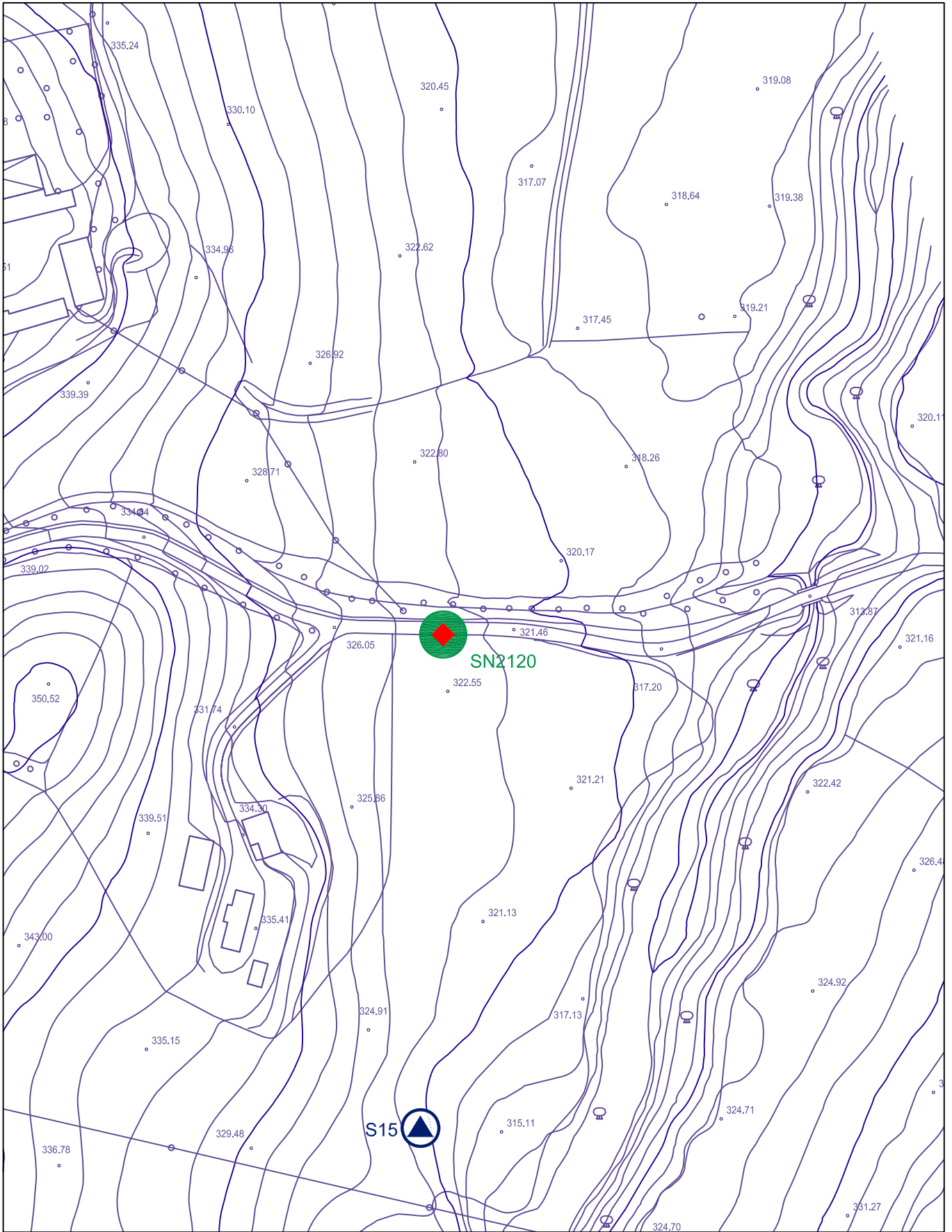


verticale.dat

DOWN HOLE 2120



veduta d'insieme della stazione di misura



Misure sismiche in foro

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2120

orientamento:

Offset dal foro (Vs): 4.45 metri

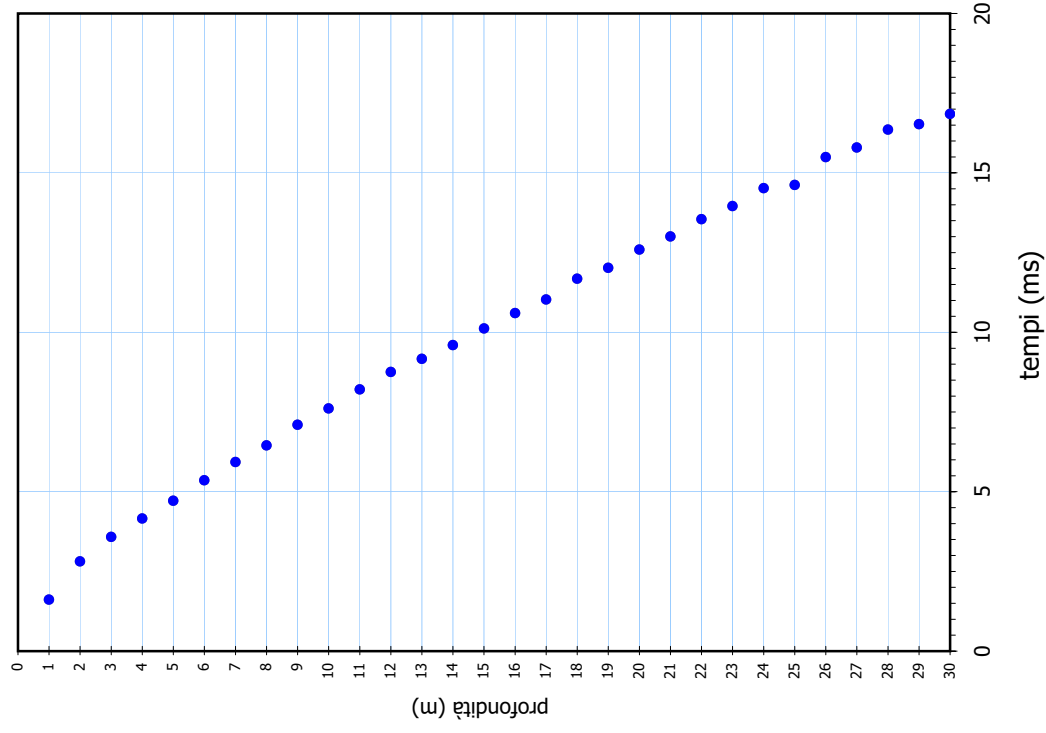
Offset dal foro (Vp): 4.45 metri

Numero di misure: 30

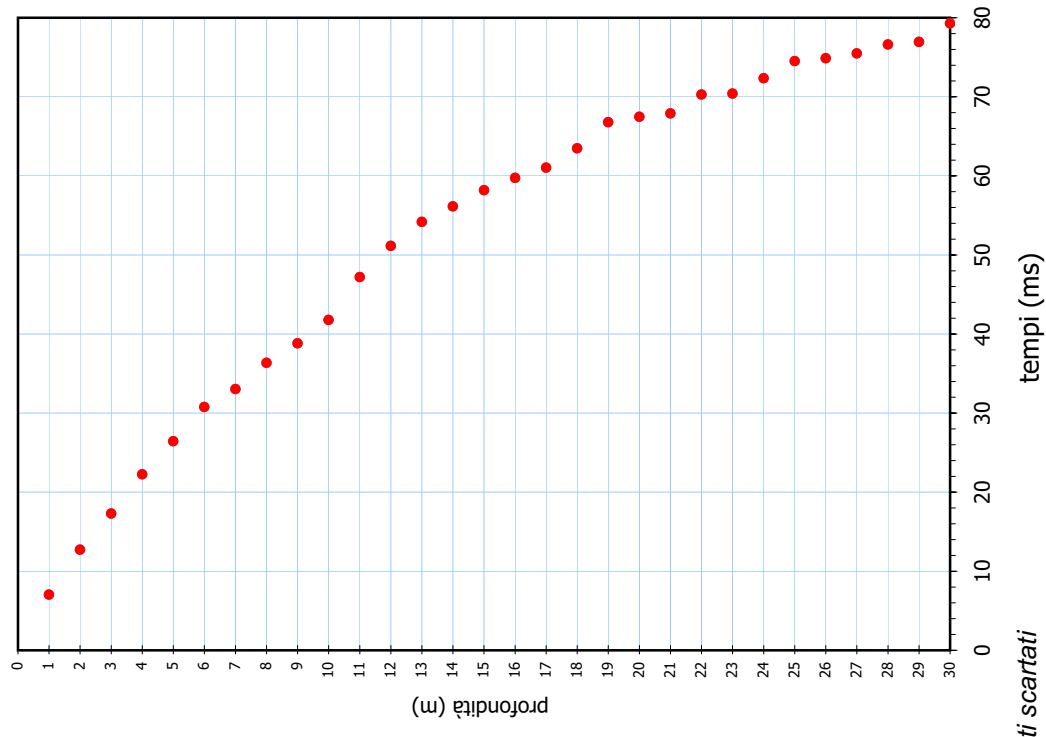
Misure in foro	Profondità (metri)	Tempi Sperimentali		Tempi Reali	
		Onda P (ms)	Onda S (ms)	Onda P (ms)	Onda S (ms)
1	1.0	7.390	32.178	1.620	7.055
2	2.0	6.883	31.100	2.822	12.749
3	3.0	6.415	31.000	3.586	17.329
4	4.0	6.227	33.324	4.163	22.277
5	5.0	6.321	35.417	4.722	26.456
6	6.0	6.677	38.339	5.363	30.794
7	7.0	7.032	39.179	5.934	33.064
8	8.0	7.388	41.624	6.456	36.375
9	9.0	7.925	43.327	7.104	38.839
10	10.0	8.334	45.745	7.614	41.793
11	11.0	8.861	50.933	8.214	47.216
12	12.0	9.341	54.578	8.758	51.173
13	13.0	9.692	57.300	9.170	54.212
14	14.0	10.079	58.933	9.605	56.164
15	15.0	10.561	60.711	10.125	58.204
16	16.0	11.009	62.044	10.607	59.776
17	17.0	11.404	63.111	11.032	61.054
18	18.0	12.036	65.422	11.684	63.510
19	19.0	12.352	68.622	12.027	66.814
20	20.0	12.905	69.156	12.597	67.505
21	21.0	13.300	69.422	13.011	67.914
22	22.0	13.827	71.733	13.553	70.309
23	23.0	14.222	71.733	13.963	70.427
24	24.0	14.775	73.600	14.528	72.367
25	25.0	14.854	75.704	14.624	74.532
26	26.0	15.724	76.000	15.498	74.911
27	27.0	16.013	76.533	15.800	75.515
28	28.0	16.566	77.600	16.361	76.638
29	29.0	16.724	77.867	16.531	76.966
30	30.0	17.040	80.178	16.856	79.310

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2120
PROFILO TEMPI DI ARRIVO - PROFONDITA'

Primi arrivi



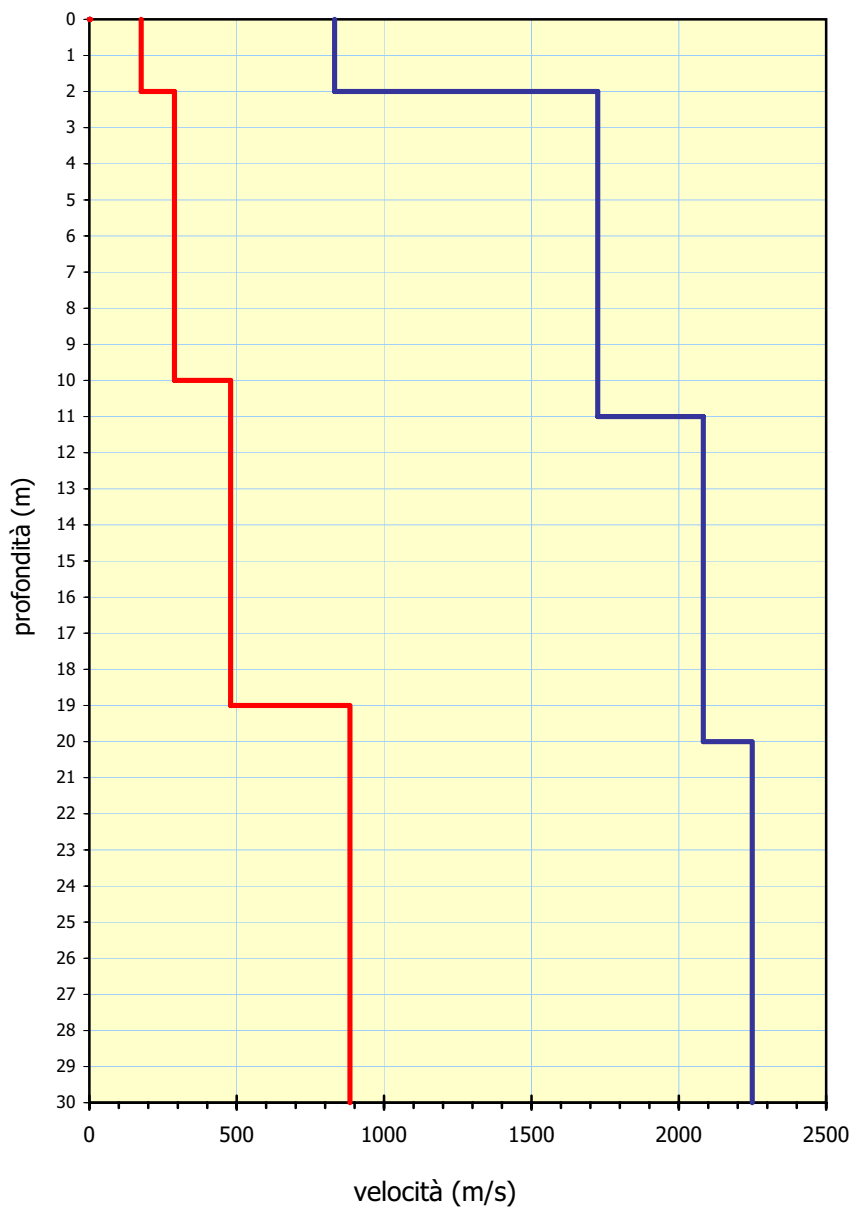
Secondi arrivi



● punti scartati

**GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
"Pedemontana" LOTTO 2.2.1 * DH 2120**

PROFILO VELOCITA' - PROFONDITA'



Vs

Vp

INDAGINE DOWN-HOLE - PROSPETTO RIEPILOGATIVO DEI MODULI ELASTICI

sismostrati		V_p (m/s)	V_s (m/s)	γ (KN/m ³)	ν	G_0 (MN/m ²)	M (MN/m ²)	E (MN/m ²)	R_p (MPa/m*s)	R_s (MPa/m*s)
da	a									
0	2	832	176	18.00	0.477	5.689.E+02	1.271.E+04	1.680.E+03	1.528.E+01	3.233.E+00
2	10	1725	289	19.00	0.486	1.619.E+03	5.769.E+04	4.811.E+03	3.344.E+01	5.603.E+00
10	11	1725	479	20.00	0.458	4.682.E+03	6.073.E+04	1.366.E+04	3.520.E+01	9.776.E+00
11	19	2083	479	20.00	0.472	4.682.E+03	8.855.E+04	1.379.E+04	4.251.E+01	9.776.E+00
19	20	2083	884	20.00	0.390	1.595.E+04	8.855.E+04	4.434.E+04	4.251.E+01	1.804.E+01
20	30	2249	884	20.00	0.409	1.595.E+04	1.032.E+05	4.493.E+04	4.590.E+01	1.804.E+01



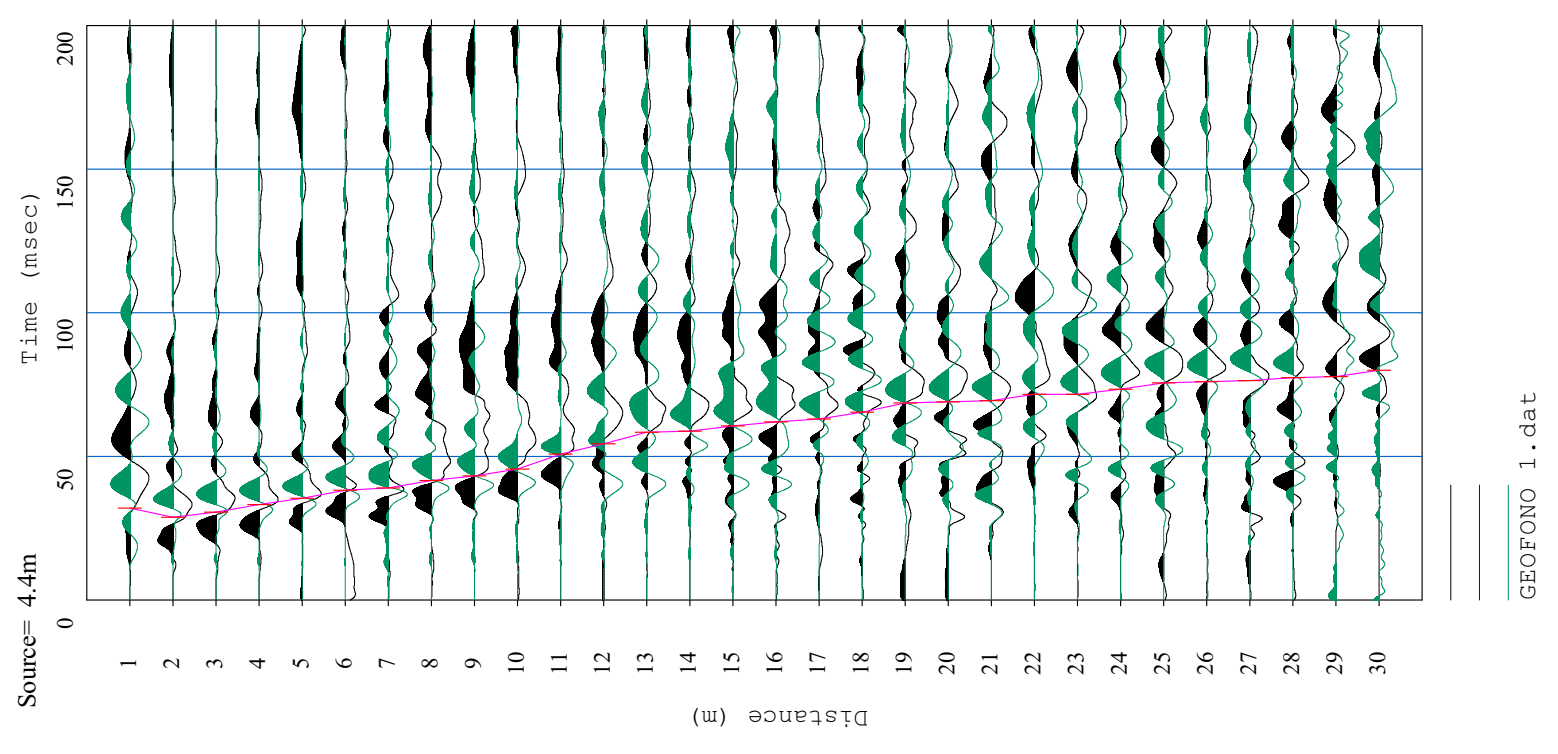
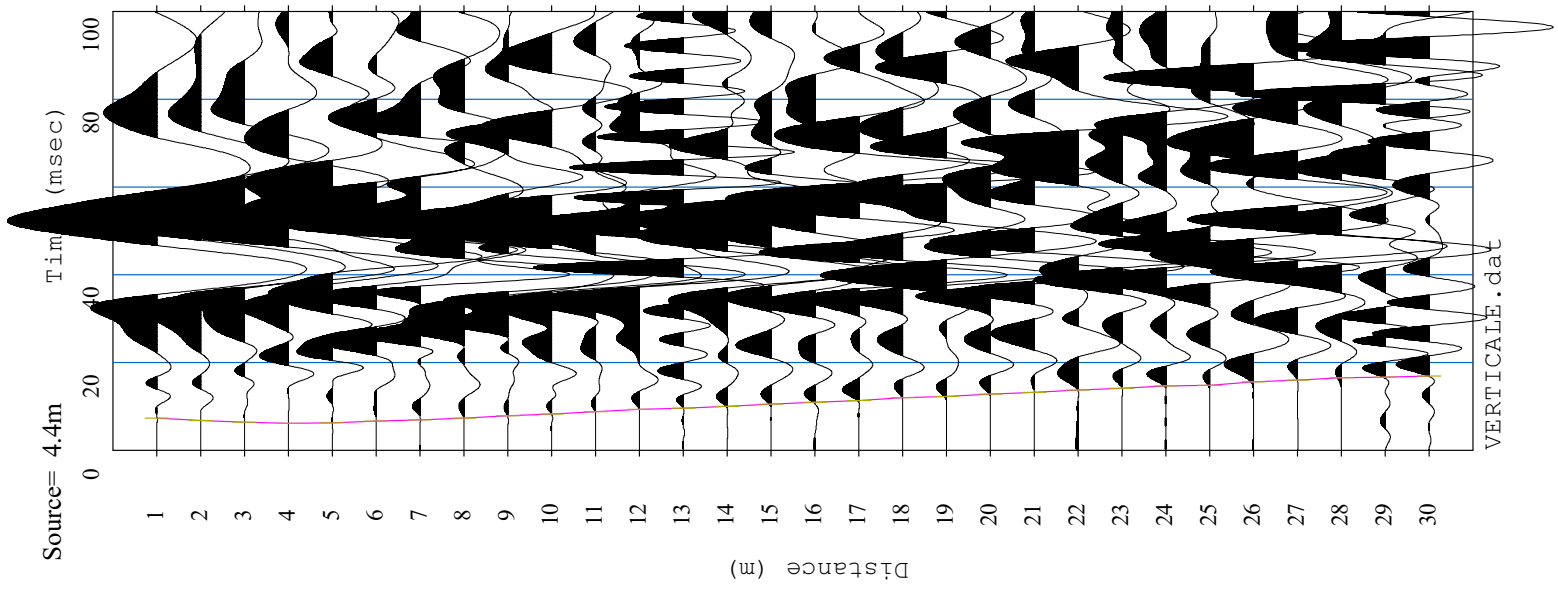
ν coefficiente di Poisson
 G_0 Modulo di Taglio iniziale
 M Modulo di Compressibilità
 E Modulo di Young
 R_p, R_s Rigidity sismiche

$$V_{S30} = 426.88 \text{ m/s}$$

$$V_{S28} = 475.27 \text{ m/s}^{(*)}$$

(*) calcolato escludendo i primi 2 metri dal p.c.

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
 "Pedemontana" LOTTO 2.2.1 * DH 2120



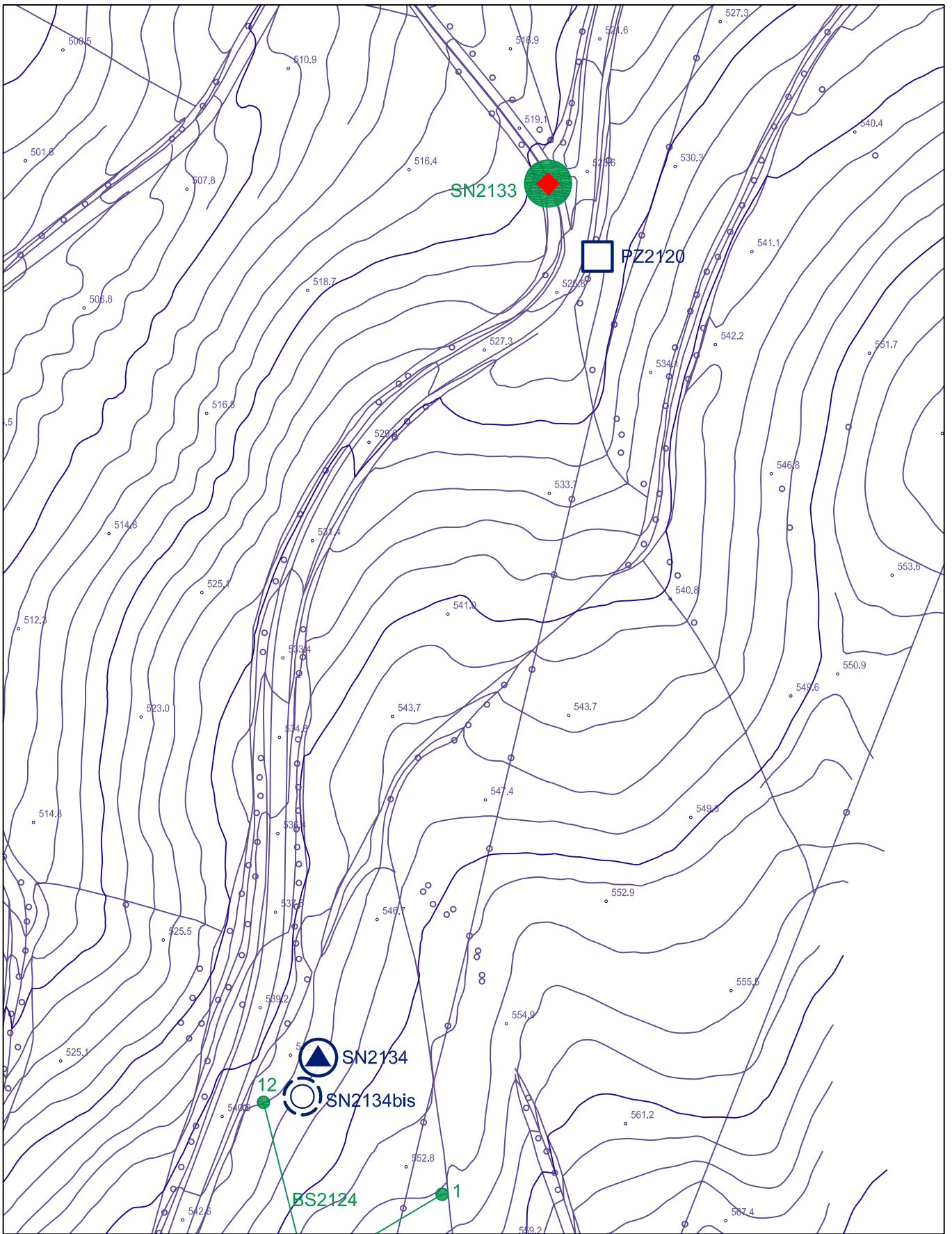
DOWN HOLE 2133



dispositivo di battuta



veduta d'insieme della stazione di misura



Misure sismiche in foro

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2133

orientamento:

Offset dal foro (Vs): 3.90 metri

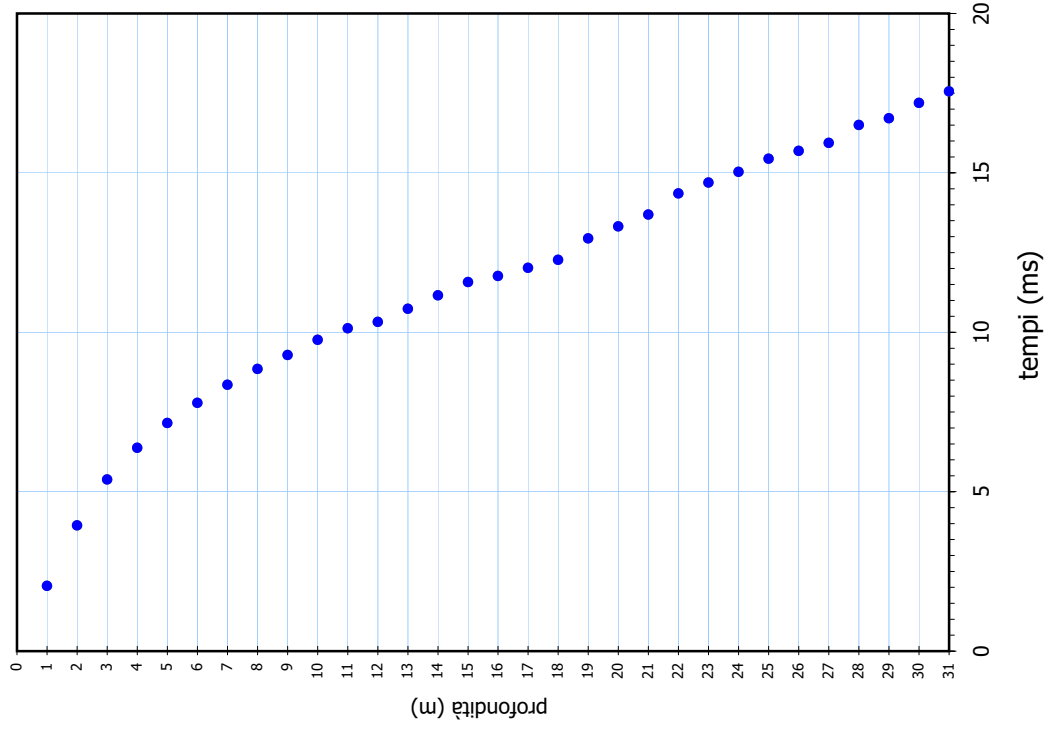
Offset dal foro (Vp): 3.90 metri

Numero di misure: 31

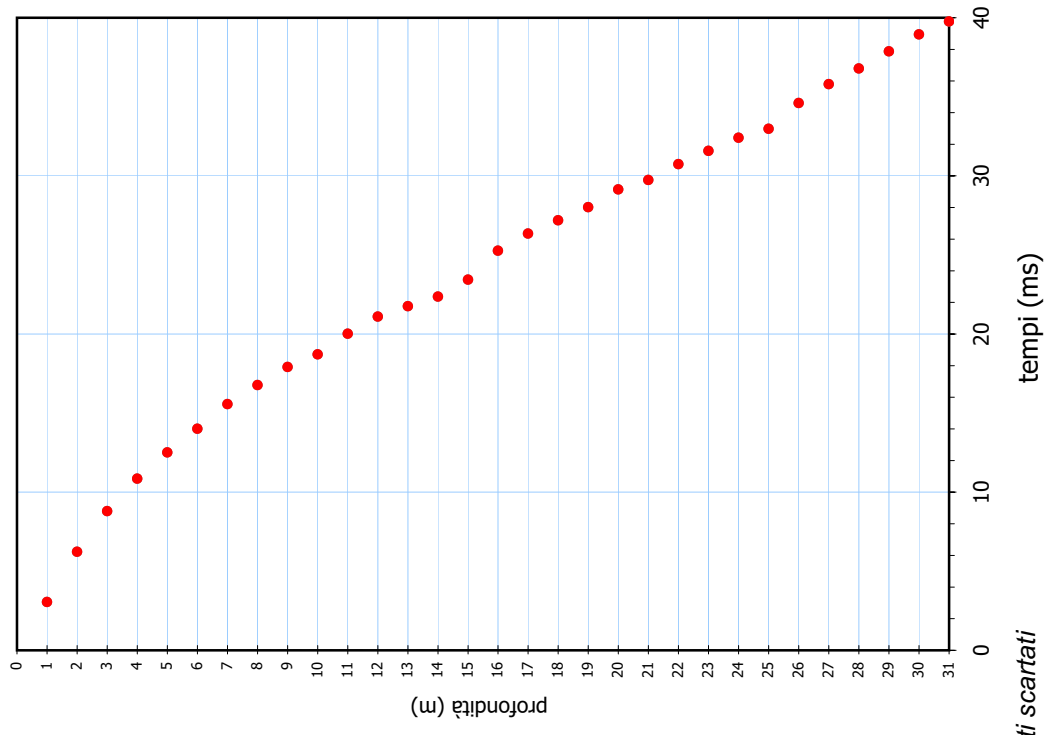
Misure in foro	Profondità (metri)	Tempi Sperimentali		Tempi Reali	
		Onda P (ms)	Onda S (ms)	Onda P (ms)	Onda S (ms)
1	1.0	8.257	12.352	2.051	3.068
2	2.0	8.652	13.669	3.948	6.237
3	3.0	8.841	14.459	5.391	8.816
4	4.0	8.913	15.170	6.381	10.862
5	5.0	9.079	15.881	7.158	12.523
6	6.0	9.292	16.724	7.791	14.022
7	7.0	9.568	17.830	8.359	15.576
8	8.0	9.853	18.673	8.856	16.785
9	9.0	10.129	19.542	9.294	17.931
10	10.0	10.485	20.095	9.768	18.722
11	11.0	10.746	21.254	10.128	20.032
12	12.0	10.862	22.202	10.330	21.115
13	13.0	11.217	22.731	10.744	21.772
14	14.0	11.591	23.230	11.166	22.378
15	15.0	11.964	24.230	11.579	23.451
16	16.0	12.113	26.021	11.769	25.281
17	17.0	12.338	27.048	12.026	26.364
18	18.0	12.563	27.839	12.278	27.207
19	19.0	13.221	28.620	12.951	28.035
20	20.0	13.578	29.709	13.327	29.159
21	21.0	13.934	30.262	13.700	29.753
22	22.0	14.583	31.230	14.359	30.751
23	23.0	14.909	32.040	14.700	31.589
24	24.0	15.236	32.850	15.039	32.425
25	25.0	15.634	33.390	15.447	32.991
26	26.0	15.872	35.010	15.697	34.623
27	27.0	16.110	36.180	15.945	35.808
28	28.0	16.667	37.156	16.507	36.800
29	29.0	16.869	38.222	16.719	37.881
30	30.0	17.343	39.289	17.198	38.961
31	31.0	17.699	40.089	17.560	39.775

GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2133
PROFILO TEMPI DI ARRIVO - PROFONDITA'

Primi arrivi



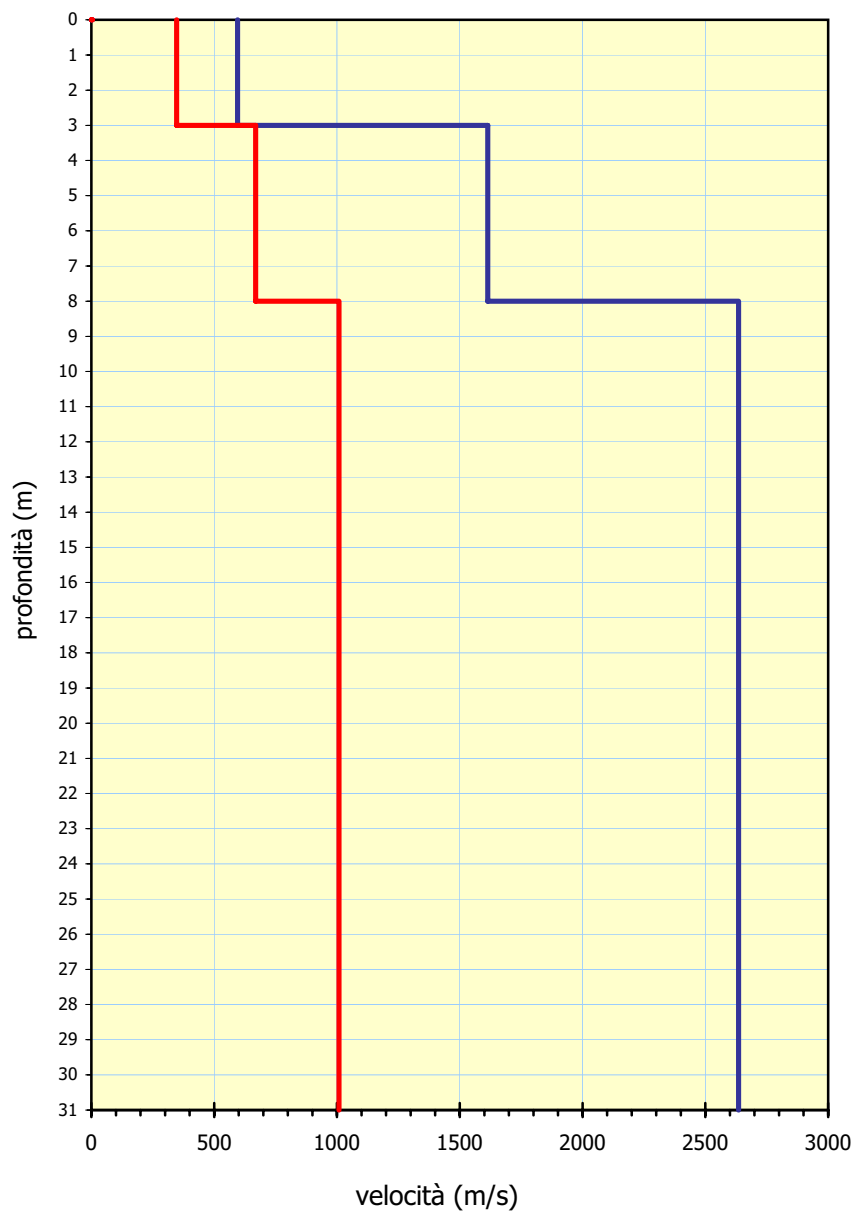
Secondi arrivi



● punti scartati

**GEOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione
"Pedemontana" LOTTO 2.2.1 * DH 2133**

PROFILO VELOCITA' - PROFONDITA'



Vs

Vp

INDAGINE DOWN-HOLE - PROSPETTO RIEPILOGATIVO DEI MODULI ELASTICI

sismostrati		Vp (m/s)	Vs (m/s)	γ (KN/m ³)	ν	G ₀ (MN/m ²)	M (MN/m ²)	E (MN/m ²)	Rp (MPa/m*s)	Rs (MPa/m*s)
da m	a m									
0	3	595	347	19.00	0.242	2.334.E+03	6.864.E+03	5.800.E+03	1.154.E+01	6.728.E+00
3	8	1614	669	20.00	0.396	9.134.E+03	5.316.E+04	2.551.E+04	3.294.E+01	1.365.E+01
8	31	2635	1008	21.00	0.414	2.177.E+04	1.488.E+05	6.159.E+04	5.646.E+01	2.160.E+01



ν coefficiente di Poisson
 G_0 Modulo di Taglio iniziale
 M Modulo di Compressibilità
 E Modulo di Young
 R_p, R_s Rigidità sismiche

$$V_{S30} = 832.06 \text{ m/s}^{(*)}$$

$$V_{S28} = 883.62 \text{ m/s}^{(*)}$$

calcolati escludendo:

^(*) il primo metro da

^(*) i primi 3 metri da

GOTRIVELL - Asse Viario Marche - Umbria e quadrilatero di penetrazione "Pedemontana" LOTTO 2.2.1 * DH 2133

