



Middle Palaeolithic Sites in Russia and Ukraine: Results Summary



Contents

Summary & Protocols

Figure 1: - Summary of work completed for each site.....	1
Figure 2 – Summary protocol for sedimentary analysis.....	1
Tephra extraction protocol	4

Kabazi II

Figure 3 - Kabazi II Sedimentary data.....	1
Figure 4 - Kabazi II Luminescence profiling data.....	1
Figure 5 - Kabazi II Coulter PSD data	1
Figure 6 - Kabazi II Malvern II PSD data	1
Figure 7 - Kabazi II tephra data compared with European tephra data.....	1
Figure 8 - Kabazi II tephra data compared to European tephra data	1
Figure 9 - Kabazi II tephra data compared to Hellenic tephra data.....	1
Figure 10 - Kabazi II tephra data compared to Hellenic tephra data.....	1
Figure 11 - Kabazi II tephra data compared to Hellenic tephra data, plotted on a TAS diagram.....	1

Biriuchaya Balka 2

Figure 12 – Biriuchaya Balka 2 Sedimentary data	1
Figure 13 – Biriuchaya Balka 2 Luminescence profiling data (770-1240 cm)	1
Figure 14 - Biriuchaya Balka 2 Coulter PSD data	1
Figure 15 - Biriuchaya Balka 2 PSD data	1

Biriuchaya Balka 1a

Figure 16 – Biriuchaya Balka 1a Sedimentary data.....	1
Figure 17 – Biriuchaya Balka 1a Luminescence profiling data (905-1055 cm)	1
Figure 18 - Biriuchaya Balka 1a Coulter PSD data.....	1
Figure 19 - Biriuchaya Balka 1a Malvern PSD data	1

Kostenki 14

Figure 20 – Kostenki 14 Sedimentary data	1
Figure 21 – Kostenki 14 Luminescence profiling data	1
Figure 21 – Kostenki 14 Coulter PSD data	1
Figure 22 – Kostenki 14 Malvern PSD data	1

Malaya Vorontsovskaya

Figure 23 – Malaya Vorontsovskaya Sedimentary data.....	1
Figure 24 – Malaya Vorontsovskaya Luminescence profiling data (0-62 cm).....	1
Figure 25 - Malaya Vorontsovskaya Coulter PSD data.....	1
Figure 26 - Malaya Vorontsovskaya Malvern PSD data	1

Monasheskaya

Figure 27 - Monasheskaya Sedimentary data	1
Figure 28 - Monasheskaya luminescence profiling data	1
Figure 29 - Monasheskaya Coulter PSD data	1
Figure 30 - Monasheskaya Malvern PSD data	1

Gubs Rockshelter

Figure 31 - Gubs Sedimentary data	1
Figure 32 - Gubs luminescence profiling data	1
Figure 33 - Gubs Coulter PSD data	1
Figure 34 - Gubs Malvern PSD data	1

Navalishinskaya

Figure 35 - Navalishinskaya Sedimentary data	1
Figure 36 - Navalishinskaya luminescence profiling data (1-122 cm)	1
Figure 37 - Navalishinskaya Coulter PSD data	1
Figure 38 - Navalishinskaya Malvern PSD data	1

Summary & Protocols

Site	14C	% sand of CF	% carb	Particle size		Mag sus	OSL profile	OSL quant	Tephra
				malvern	coulter				
Kabazi II	(+)	+	+	+	+	+	+	+	+
Biriuchya Balka 2	(+)	+	+	+	+	+	+	+	~
Biriuchya Balka 1a	(+)	+	+	+	+	+	+		~
Monasheskaya		+	+	+	+	+	+	+	~
Malaya Vorontsovskaya	+	+	+	+	+	+	+ (&TL)	+	~
Kabazi V							+		
Kostenki 12	(+)	+	+	+	+	+	+	+	(+)
Kostenki 14	+		+						(+)
Navalishinskaya	(~)	+	+	+	+	+	+		
Gubs Rockshelter		+	+	+	+	+	+	+	
Akhshtyr	(+)						+		
Weasel Cave	(+)								+
Karabai							+ (&TL)		
Barakaevskaya							+		
Kepshinskaya									
Sary-Kaya									
Kalitvenka									

Key	
(+)	Positive result (secondary data)
+	Positive result
(~)	Negative result / result not applicable (secondary data)
~	Negative result
Denotes High Priority	
Denotes Low Priority	

Figure 1: - Summary of work completed for each site

EFCHED sample processing

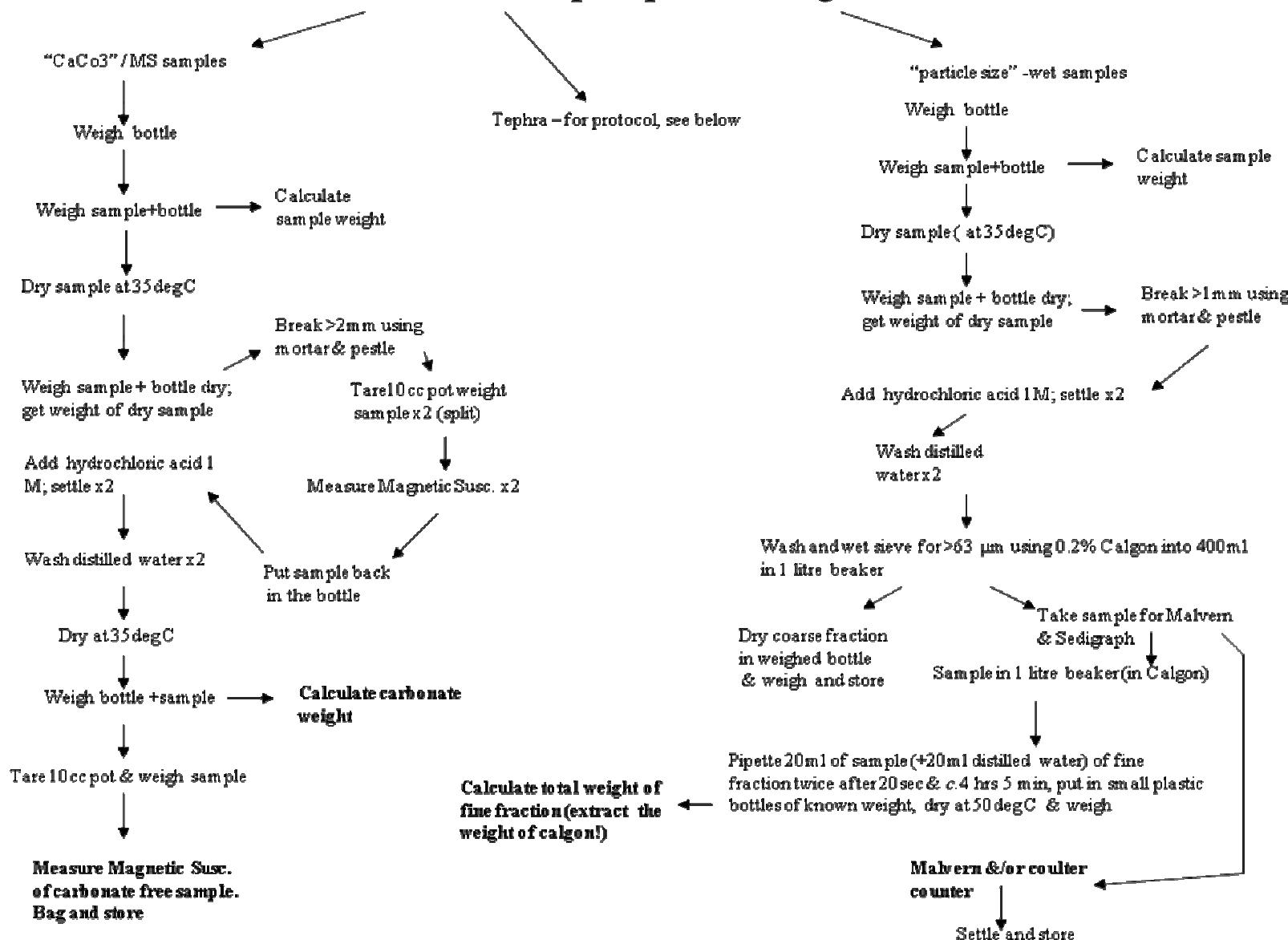


Figure 2 – Summary protocol for sedimentary analysis

Tephra extraction protocol

The aim of the method is to extract tephra from a sample of sediment. The protocol is designed to extracting tephra from a variety of sediments without altering the tephra chemistry. This technique can be applied to both discreet contiguous samples for high-resolution tephra analysis and scrape samples to enable faster core prospecting.

For Batches of up to 25 samples

1. Sample preparation – sub-samples must be representative of the whole sample. Homogenisation and splitting may be required. 10g is the recommended minimum sample size, depending on the material.
2. Removal of carbonates:
Samples are placed in a 500 ml Nalgene beaker. 7-20% HCl is added. Large carbonaceous clasts may need to be removed by hand.
3. Water wash to remove dissolved carbonates. Supernatant fluid is removed with a Venturi pump to ensure no sample is lost.
4. Disaggregation:
homogenised sample is placed in a jar with 30-50ml 4.4% sodium pyrophosphate and placed on a sediment wheel for >6 hr.
5. 25 µm sieving:
sample is transferred to 25 µm polyester mesh and washed with 4.4% sodium pyrophosphate until fine particles are removed.
6. Sample is washed into a suitable drying vessel and placed in a warm (~35°C) oven to dry.
7. Density separation:
dried sample is mixed with sodium polytungstate (density 2.5 ml / g) and centrifuged (5min @ 3000 rpm). Floating fraction will contain any tephra present. Sodium polytungstate should be recycled to minimise cost and waste.
8. Any located tephra should be mounted in an epoxy stub and geochemically finger-printed to determine source event.

Kabazi II

Notes

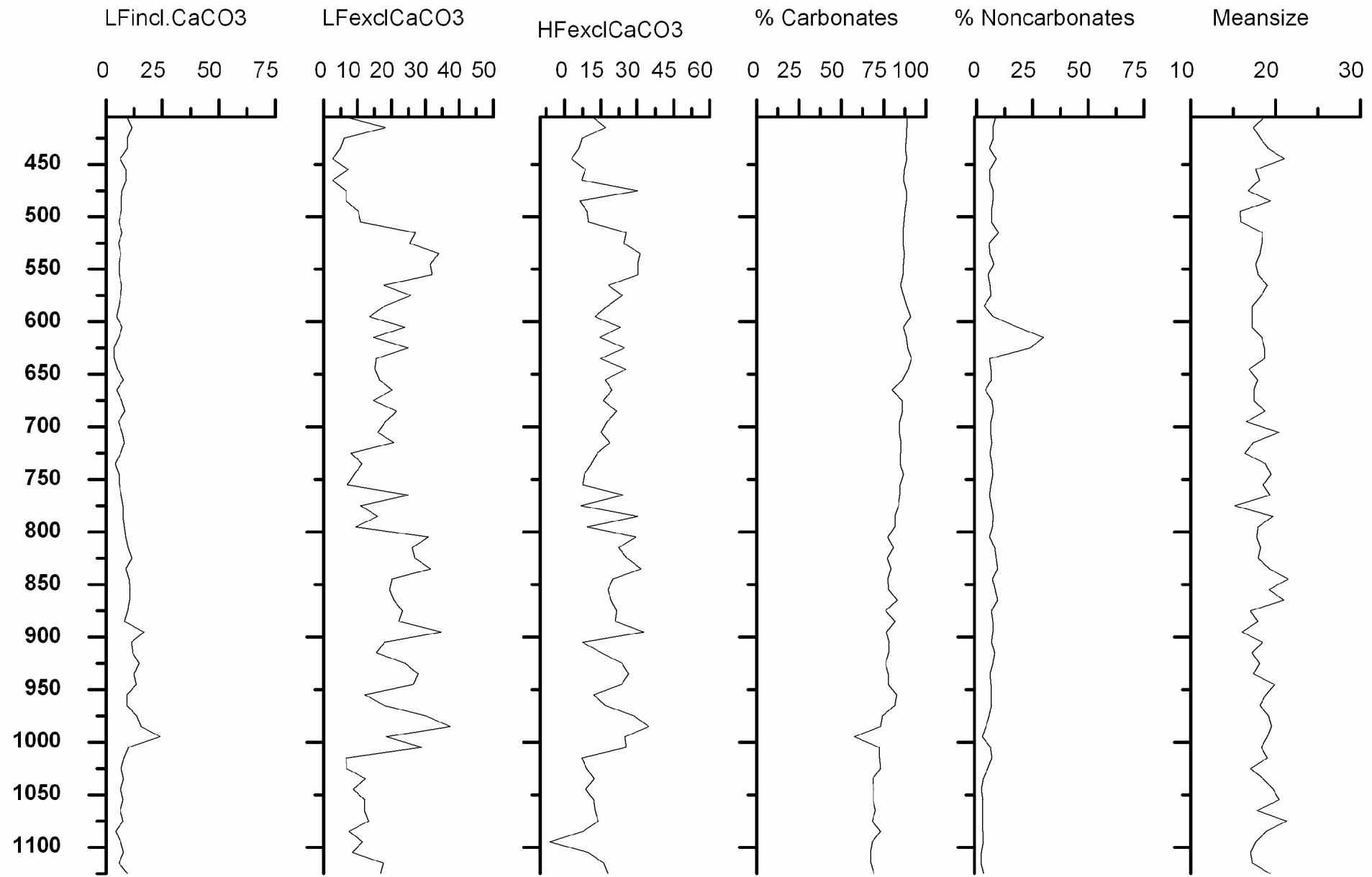


Figure 3 - Kabazi II Sedimentary data

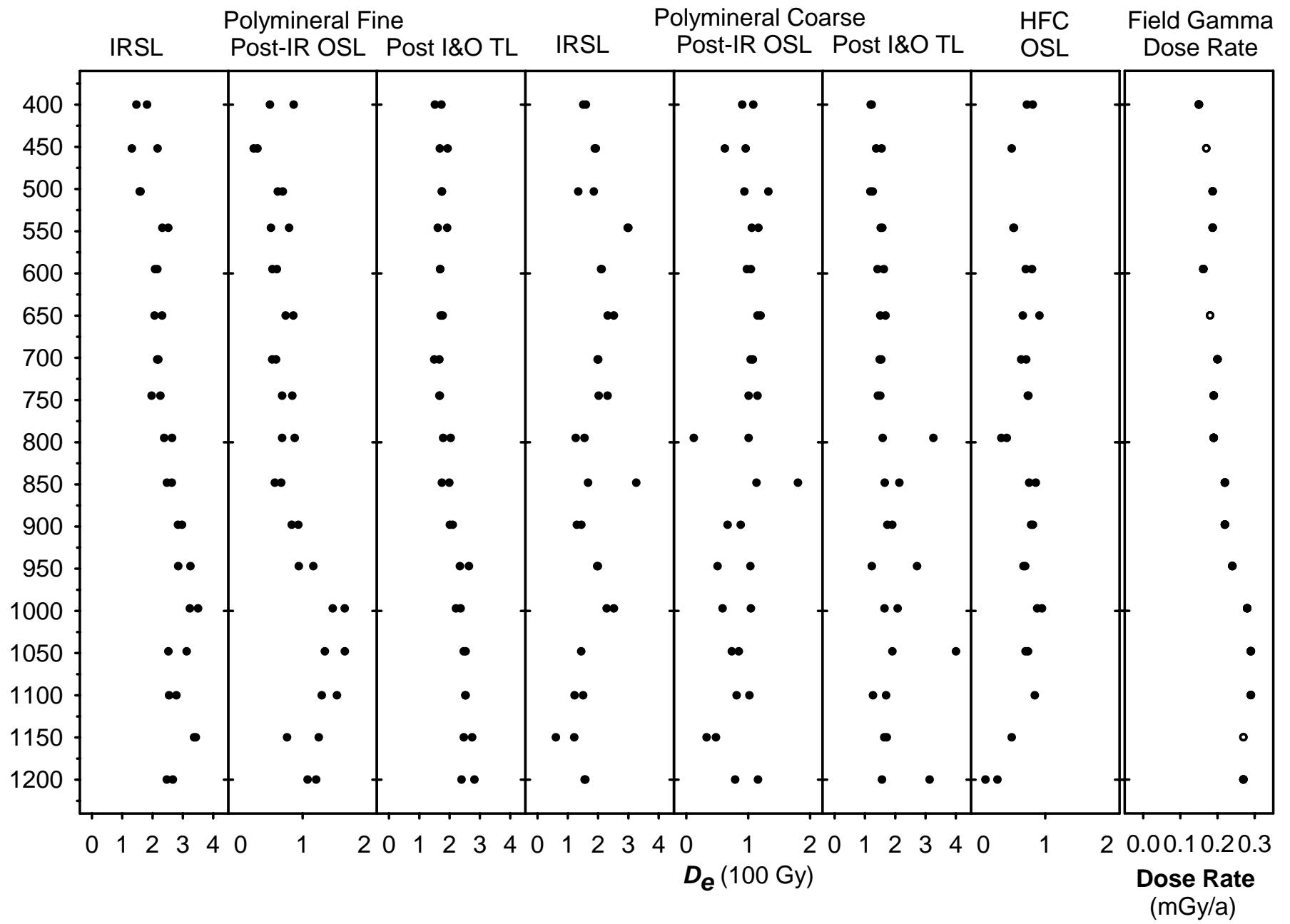


Figure 4 - Kabazi II Luminescence profiling data

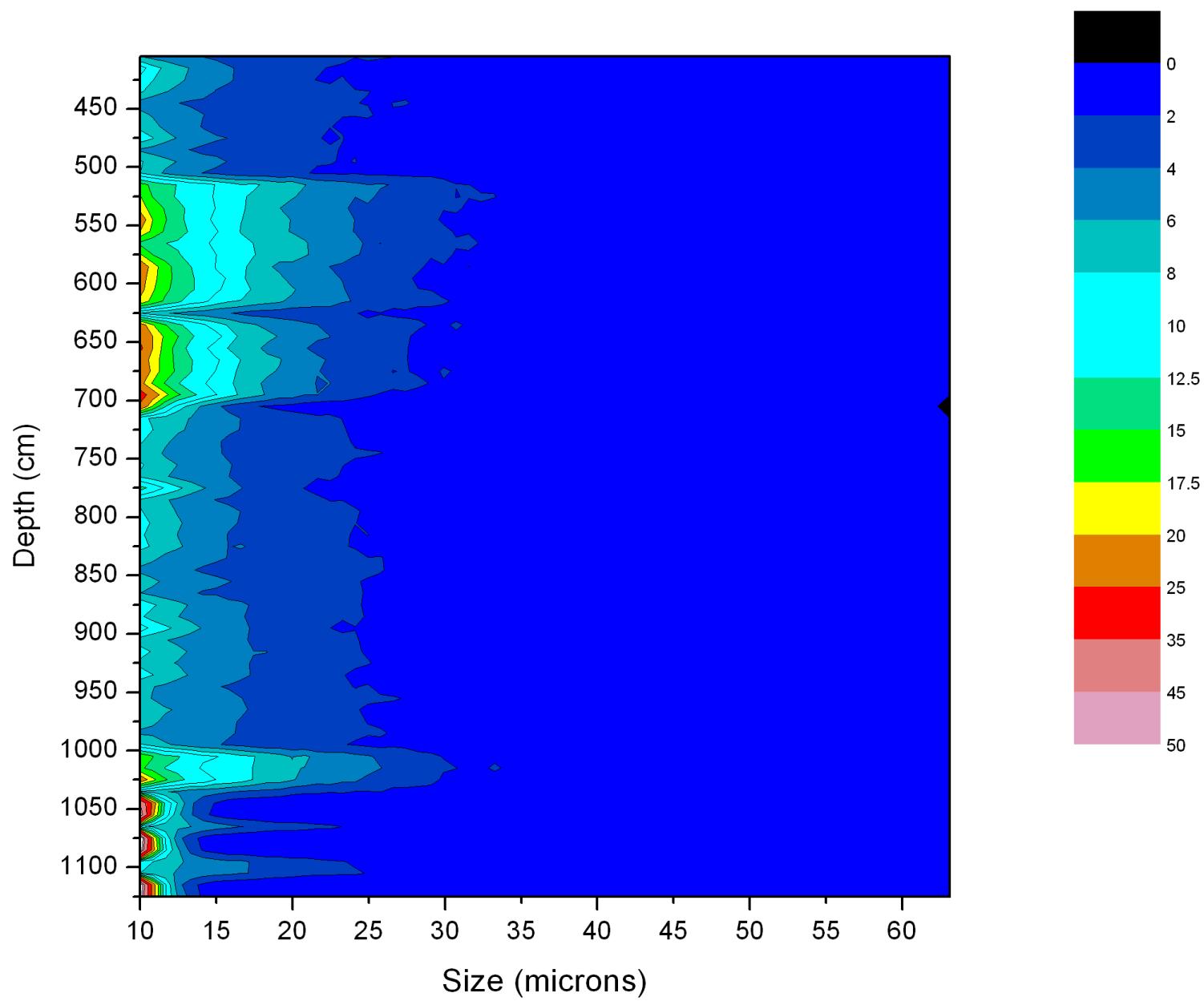


Figure 5 - Kabazi II Coulter PSD data

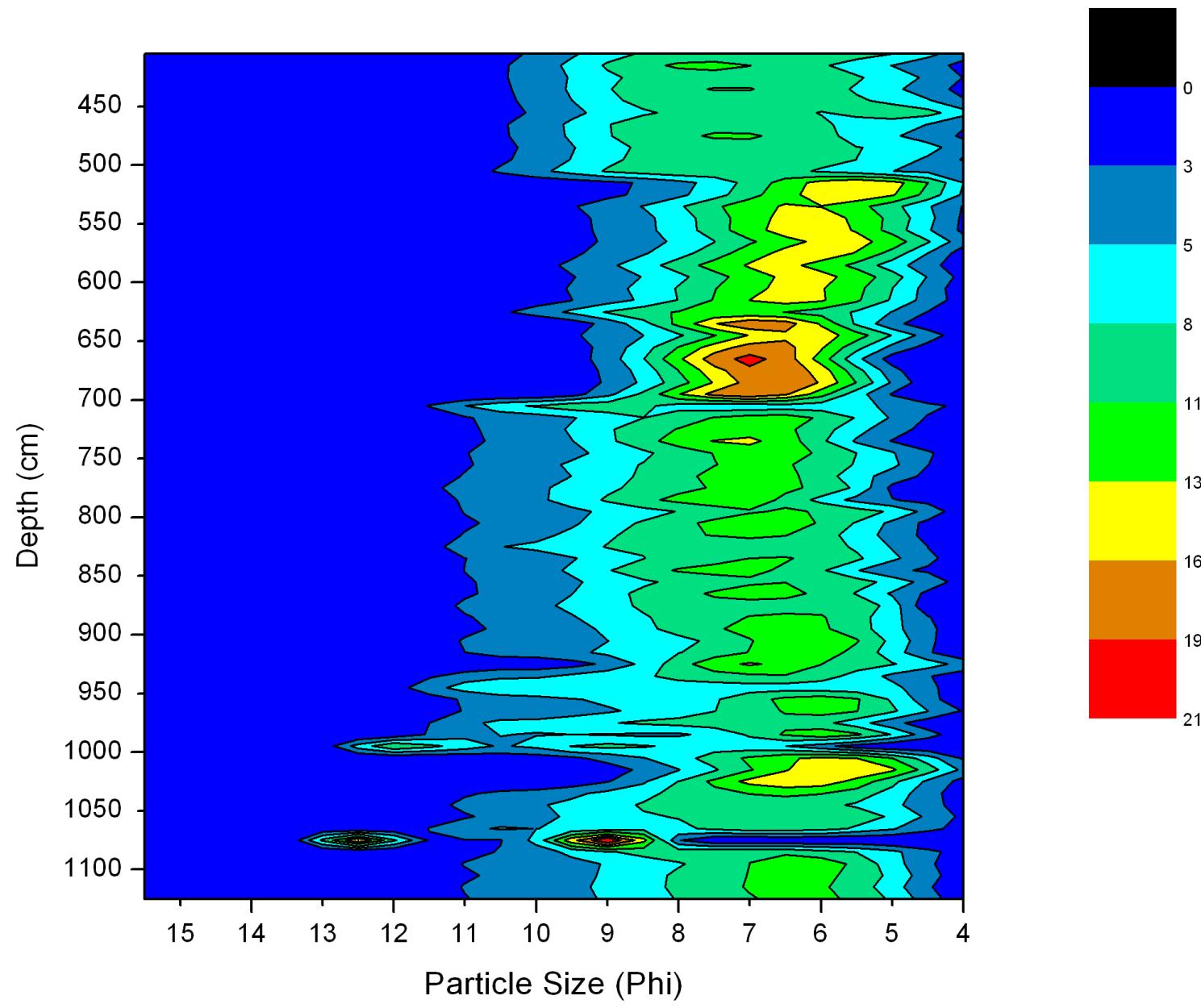


Figure 6 - Kabazi II Malvern II PSD data

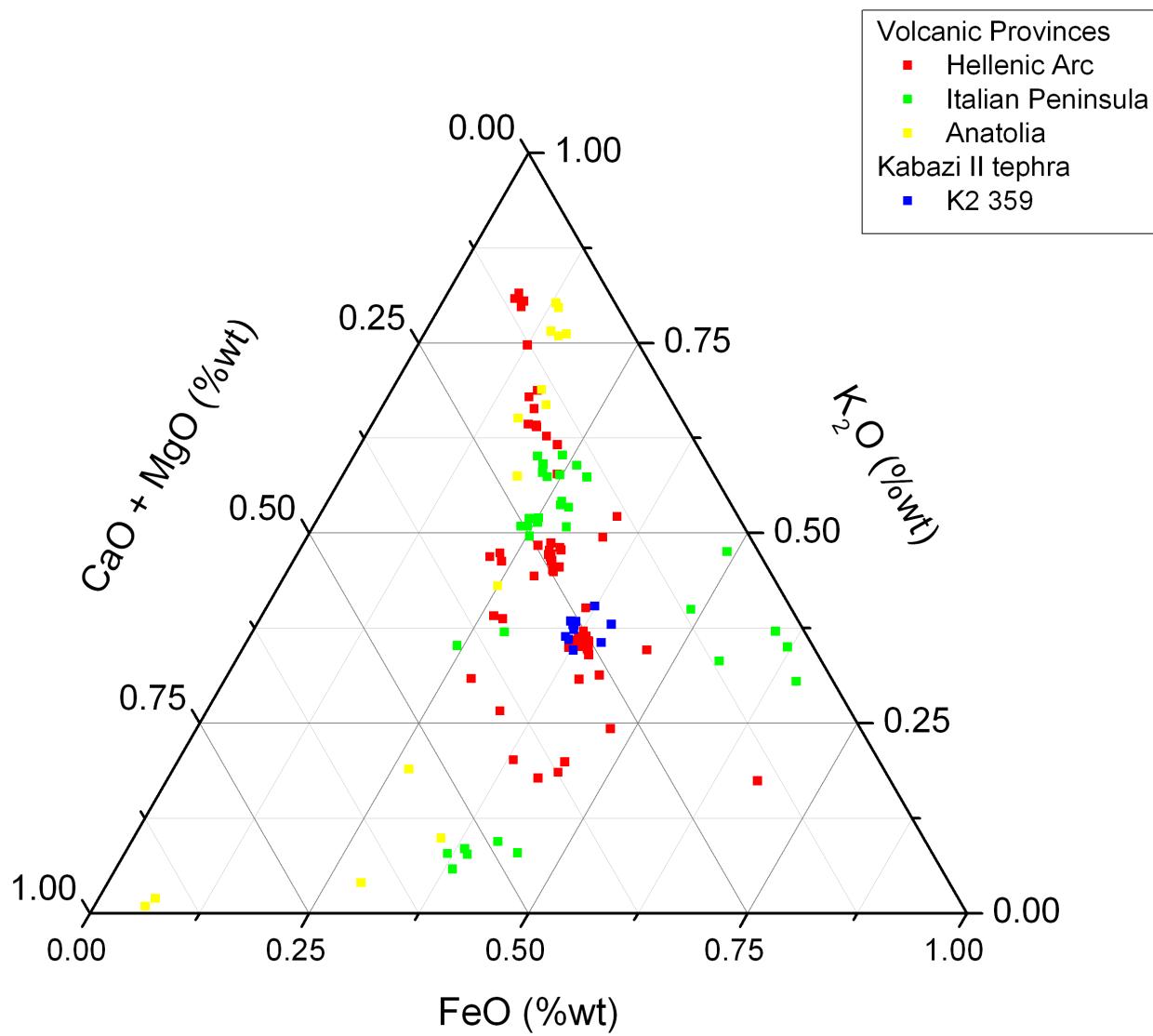


Figure 7 - Kabazi II tephra data
compared with European tephra data

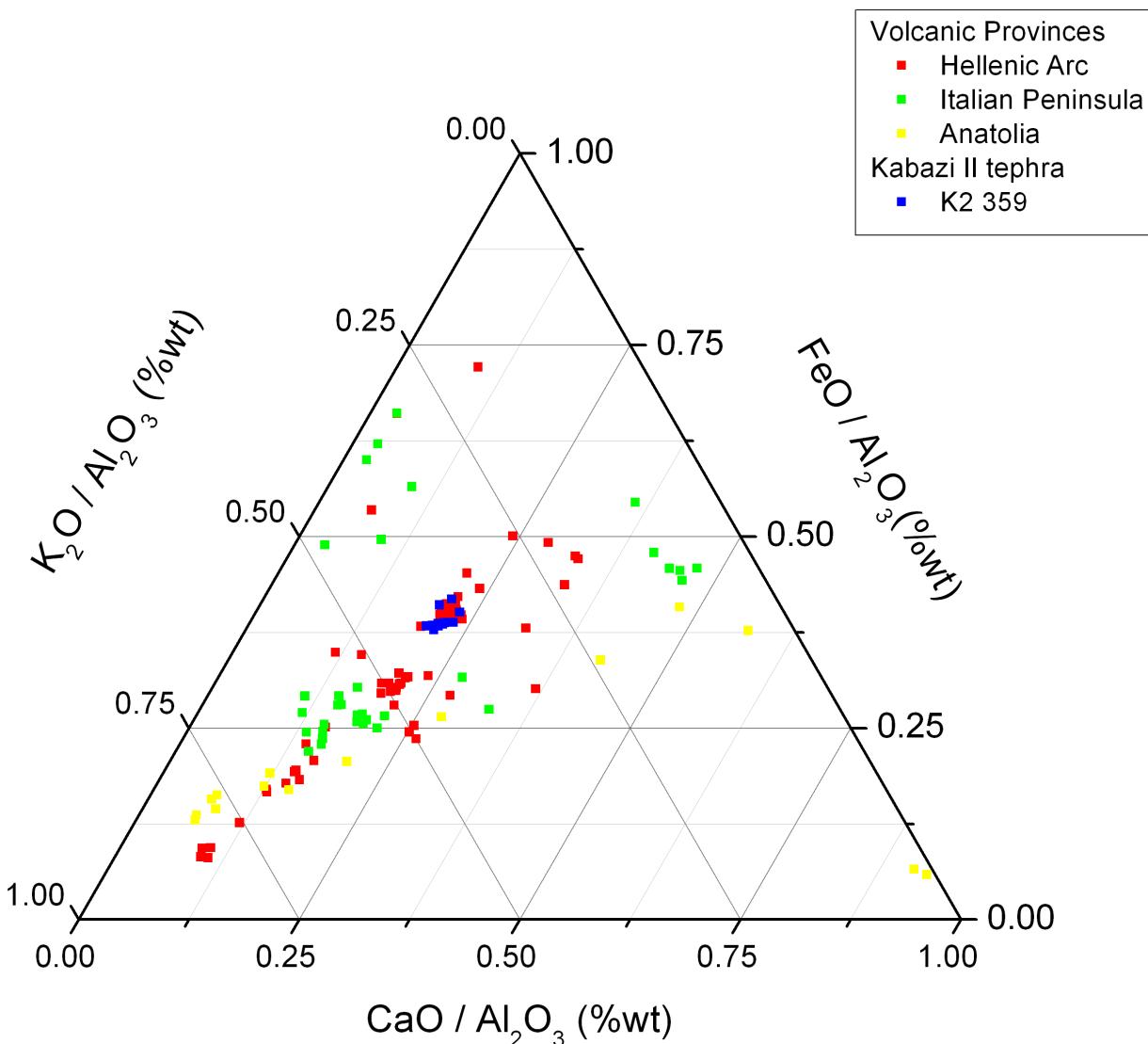


Figure 8 - Kabazi II tephra data
compared to European tephra data

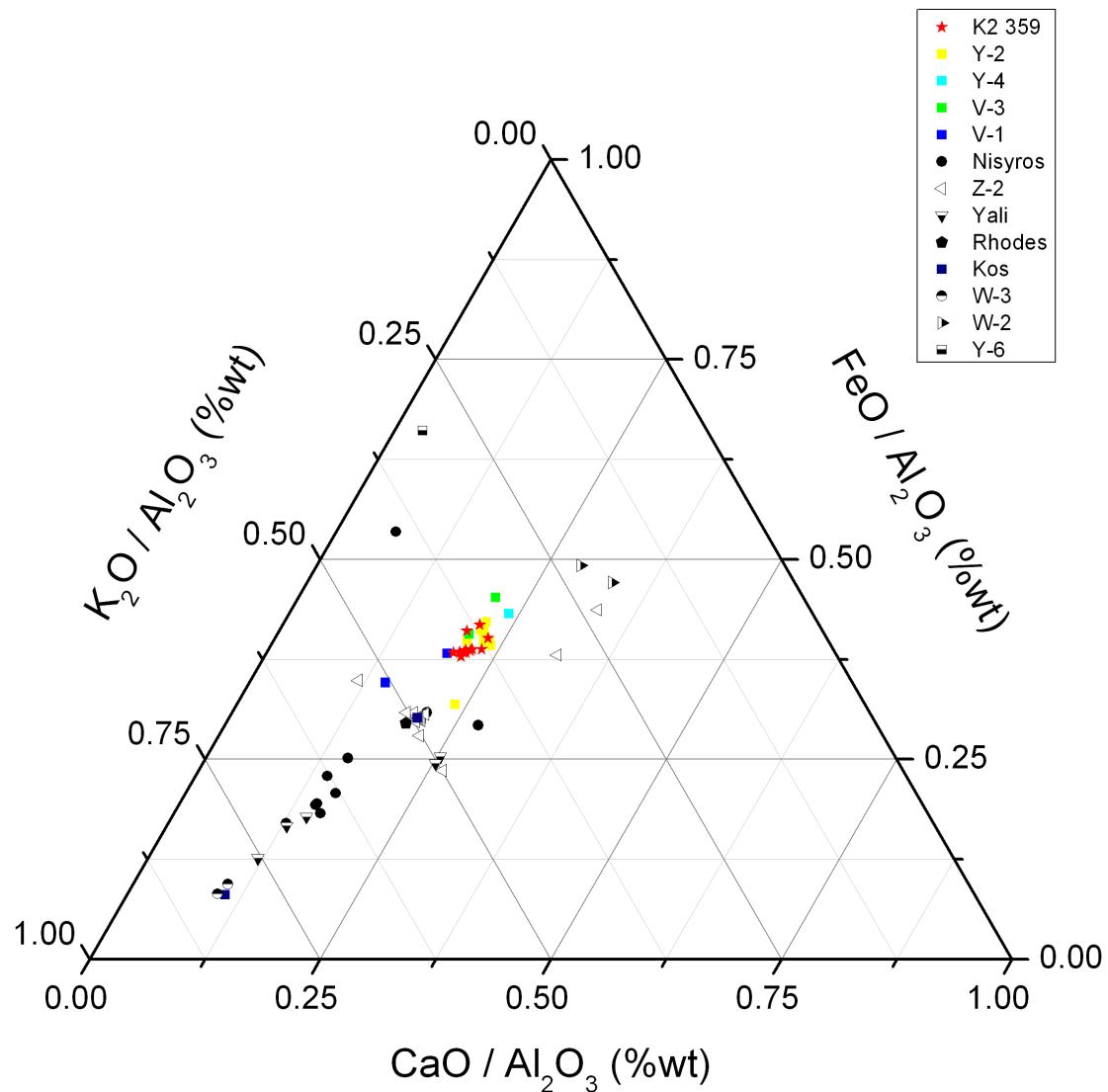


Figure 9 - Kabazi II tephra data
compared to Hellenic tephra data

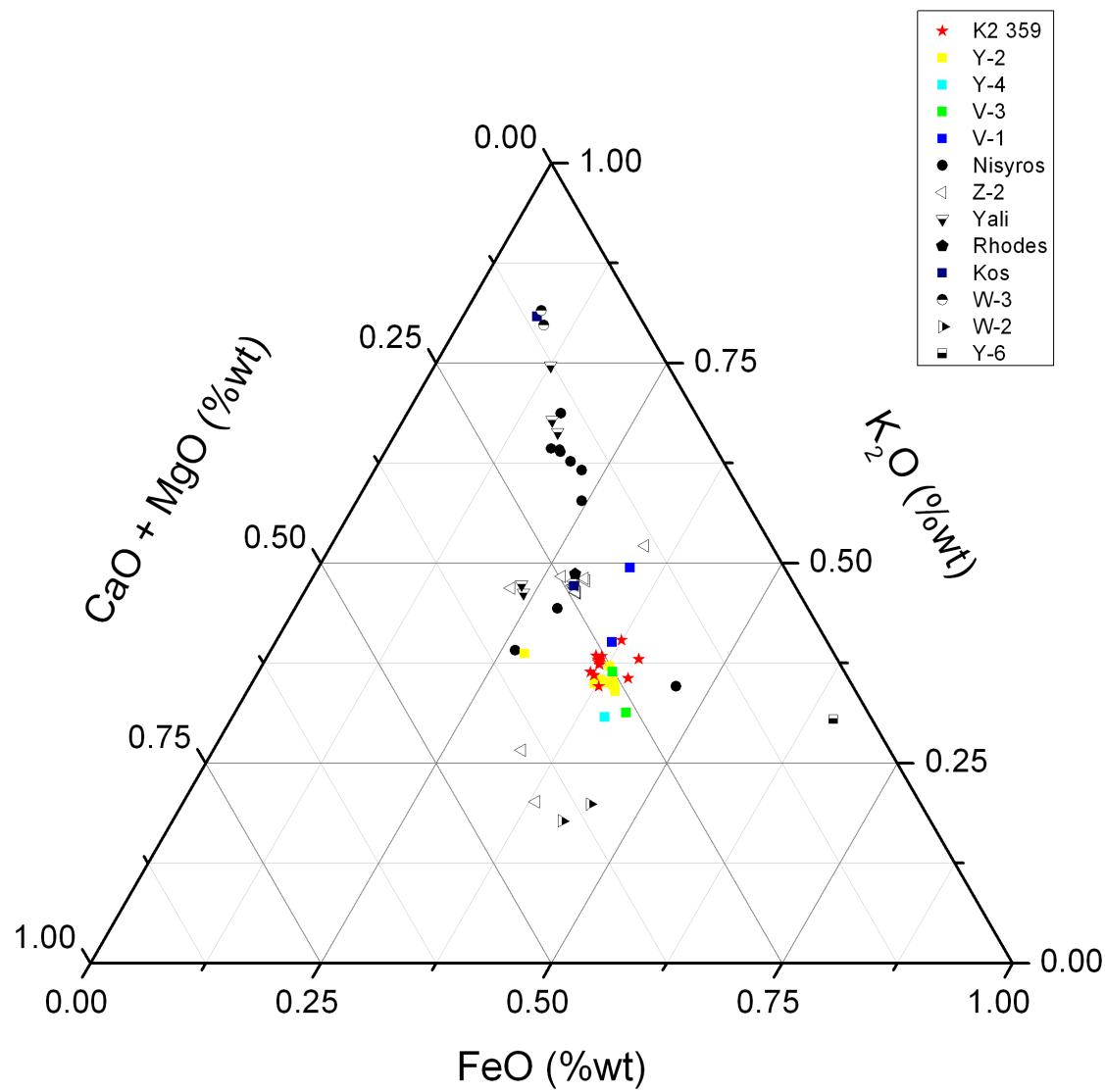


Figure 10 - Kabazi II tephra data compared to Hellenic tephra data

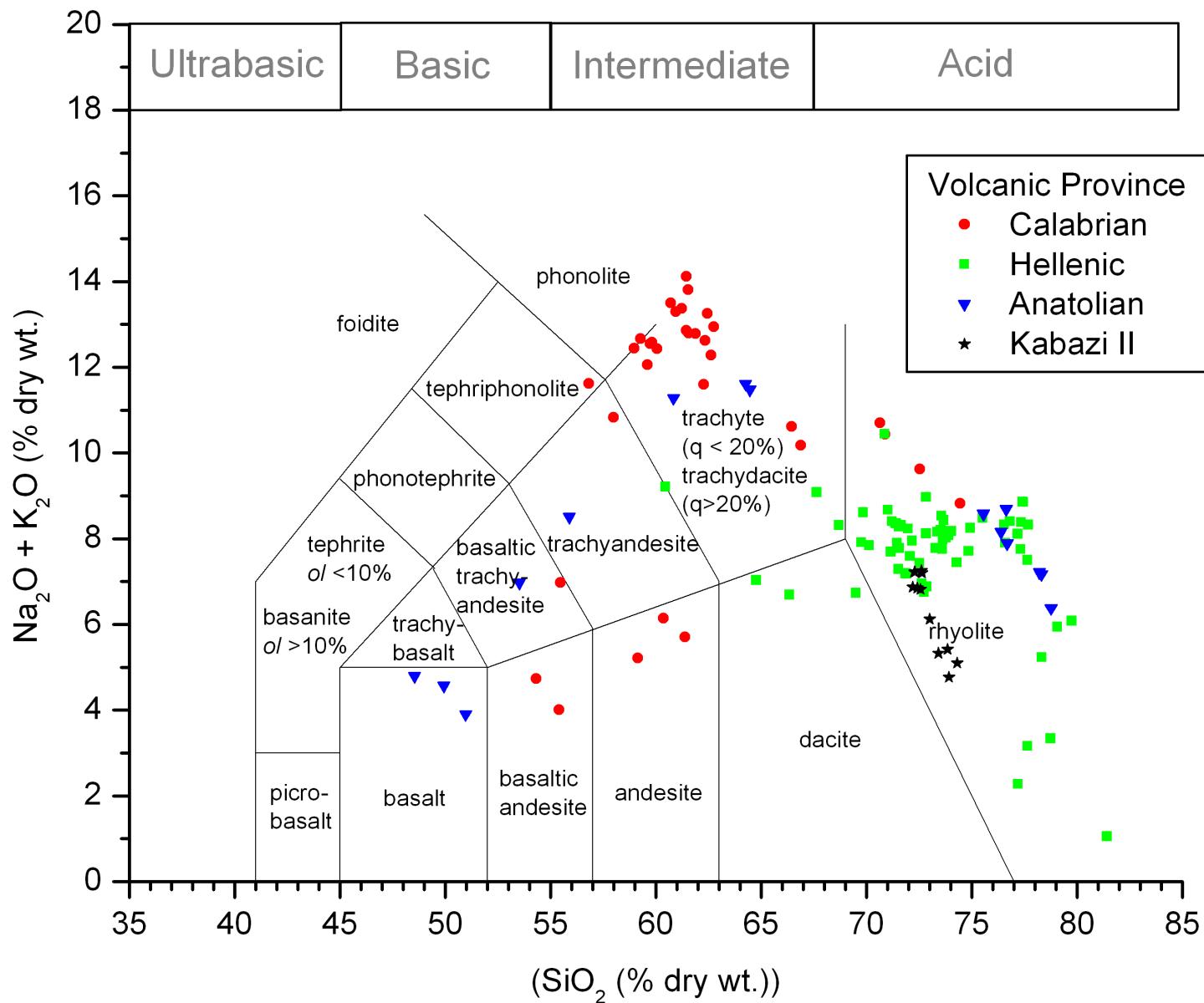


Figure 11 - Kabazi II tephra data compared to Hellenic tephra data, plotted on a TAS diagram

Biriuchaya Balka 2

Notes

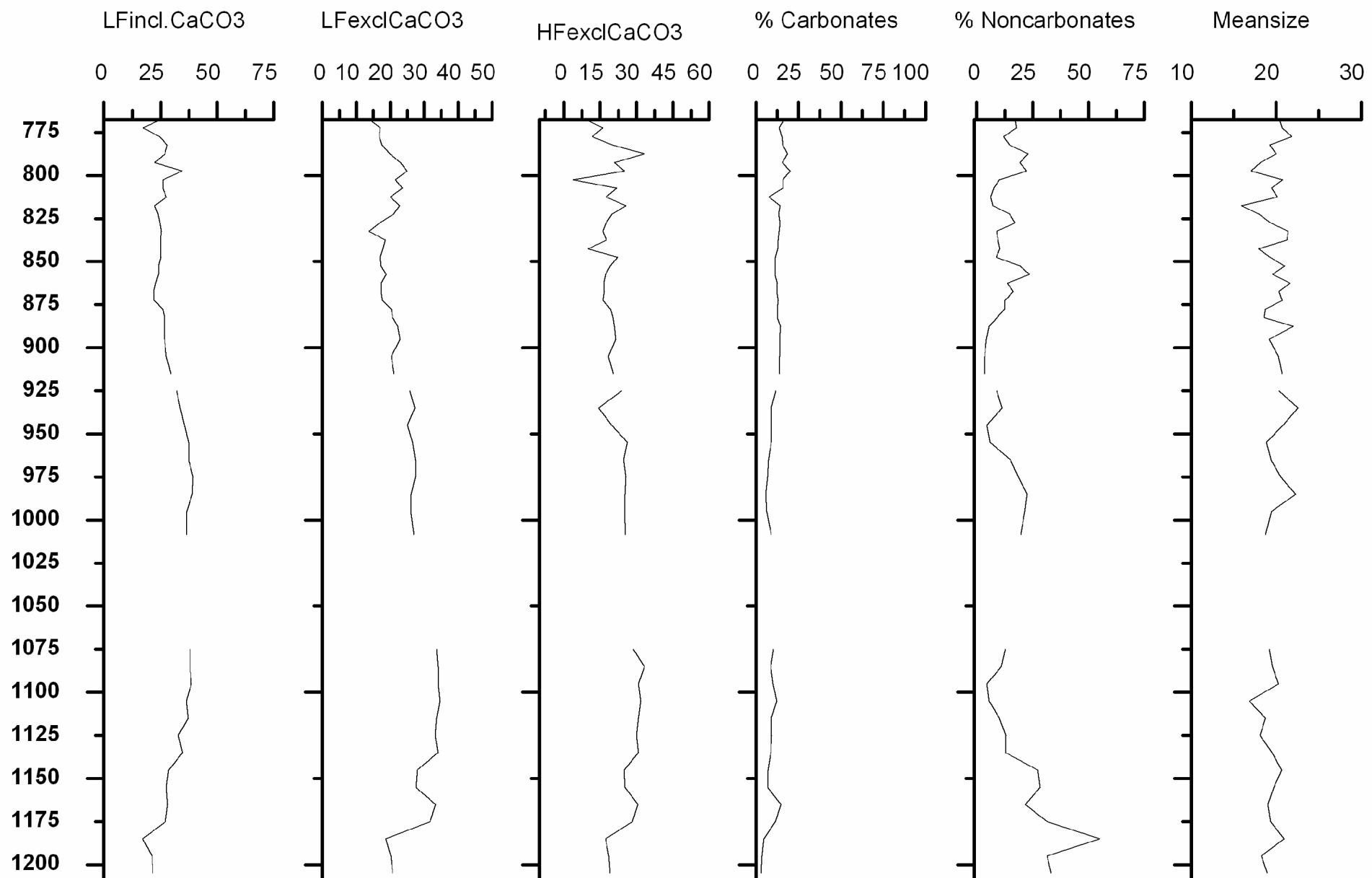


Figure 12 – Biriuchaya Balka 2
Sedimentary data

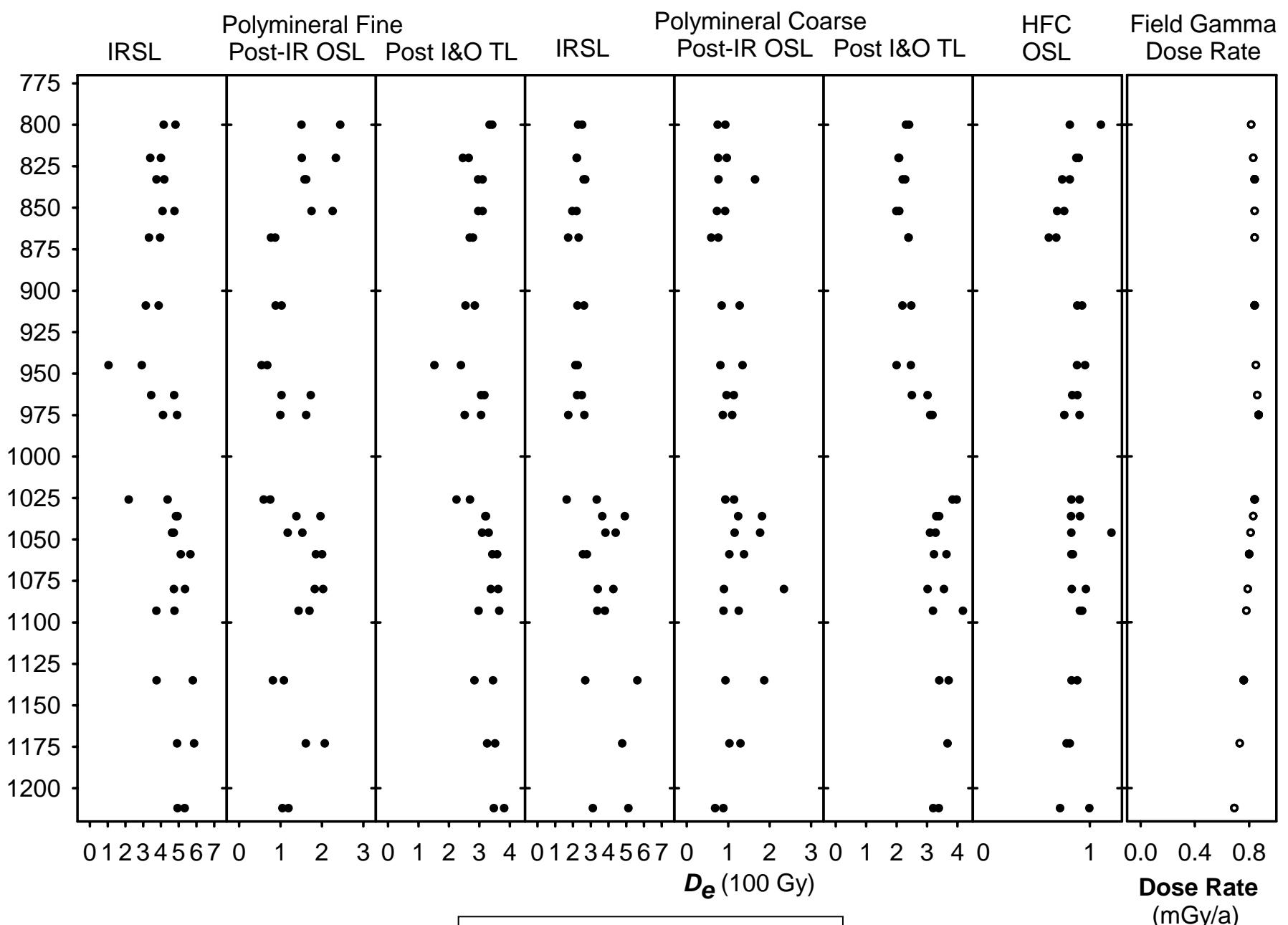
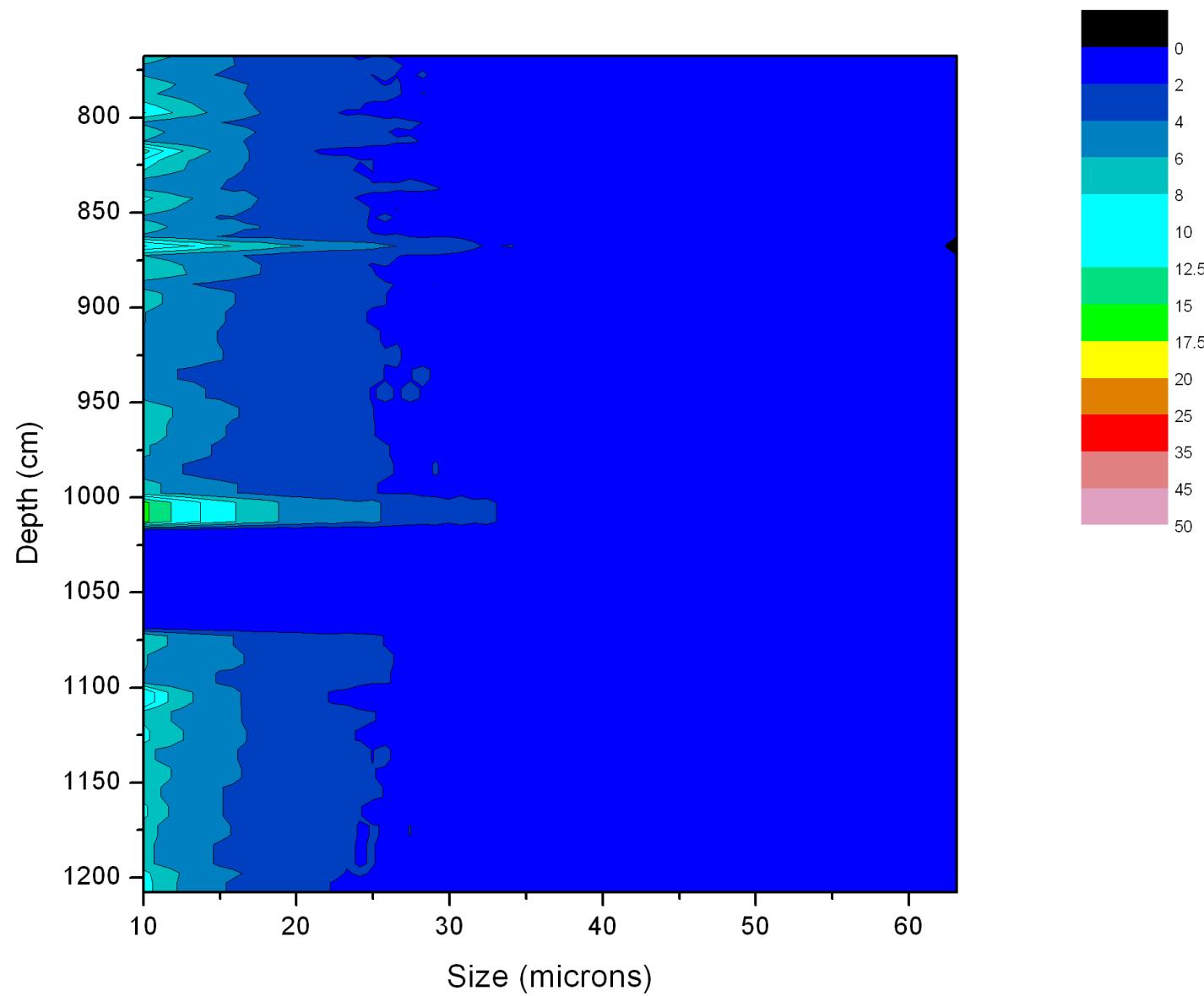


Figure 13 – Biriu chaya Balka 2
Luminescence profiling data (770-1240
cm)



**Figure 14 - Biriuchaya Balka 2 Coulter
PSD data**

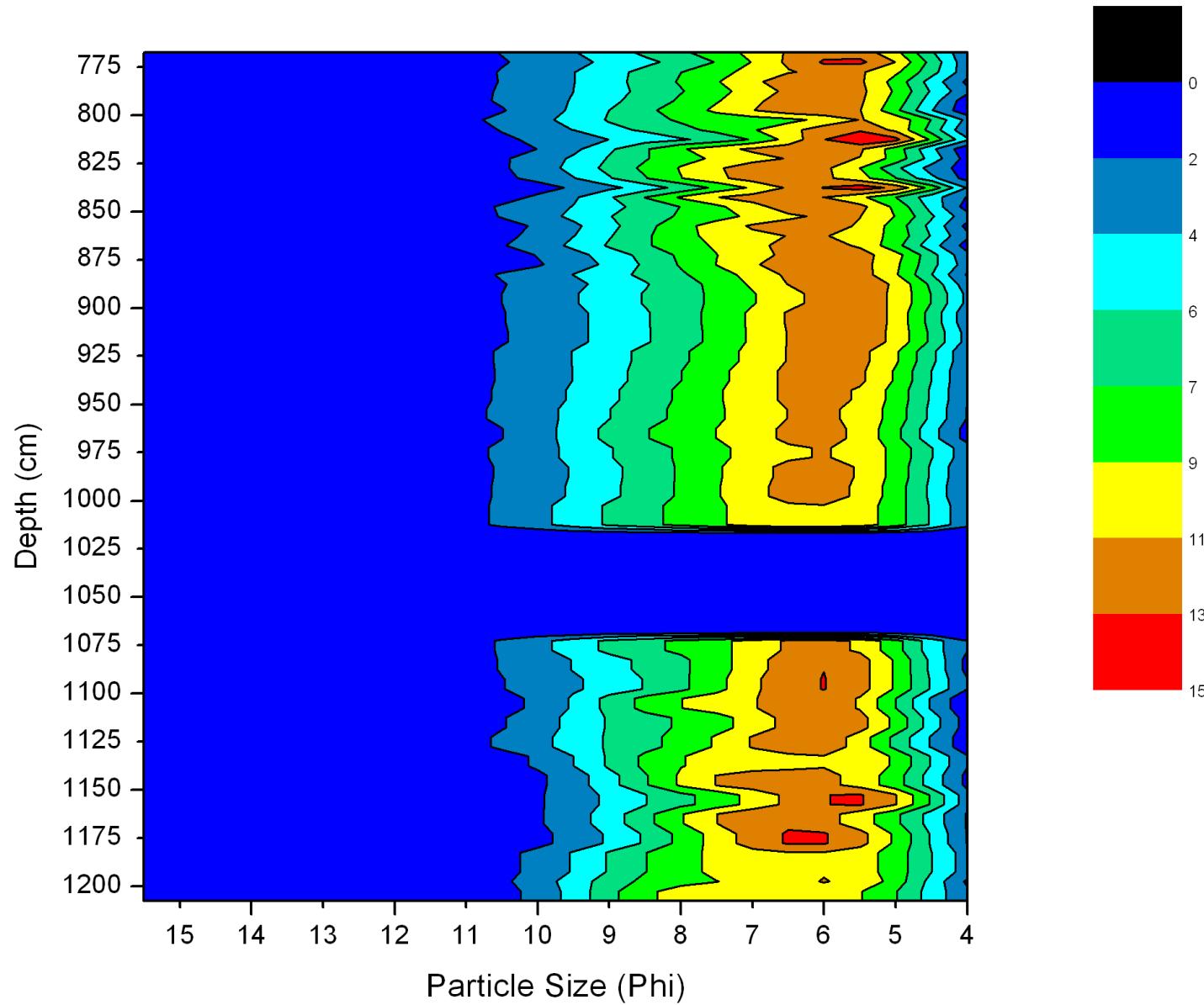


Figure 15 - Biriuchaya Balka 2 PSD
data

Biriuchaya Balka Ia

Notes

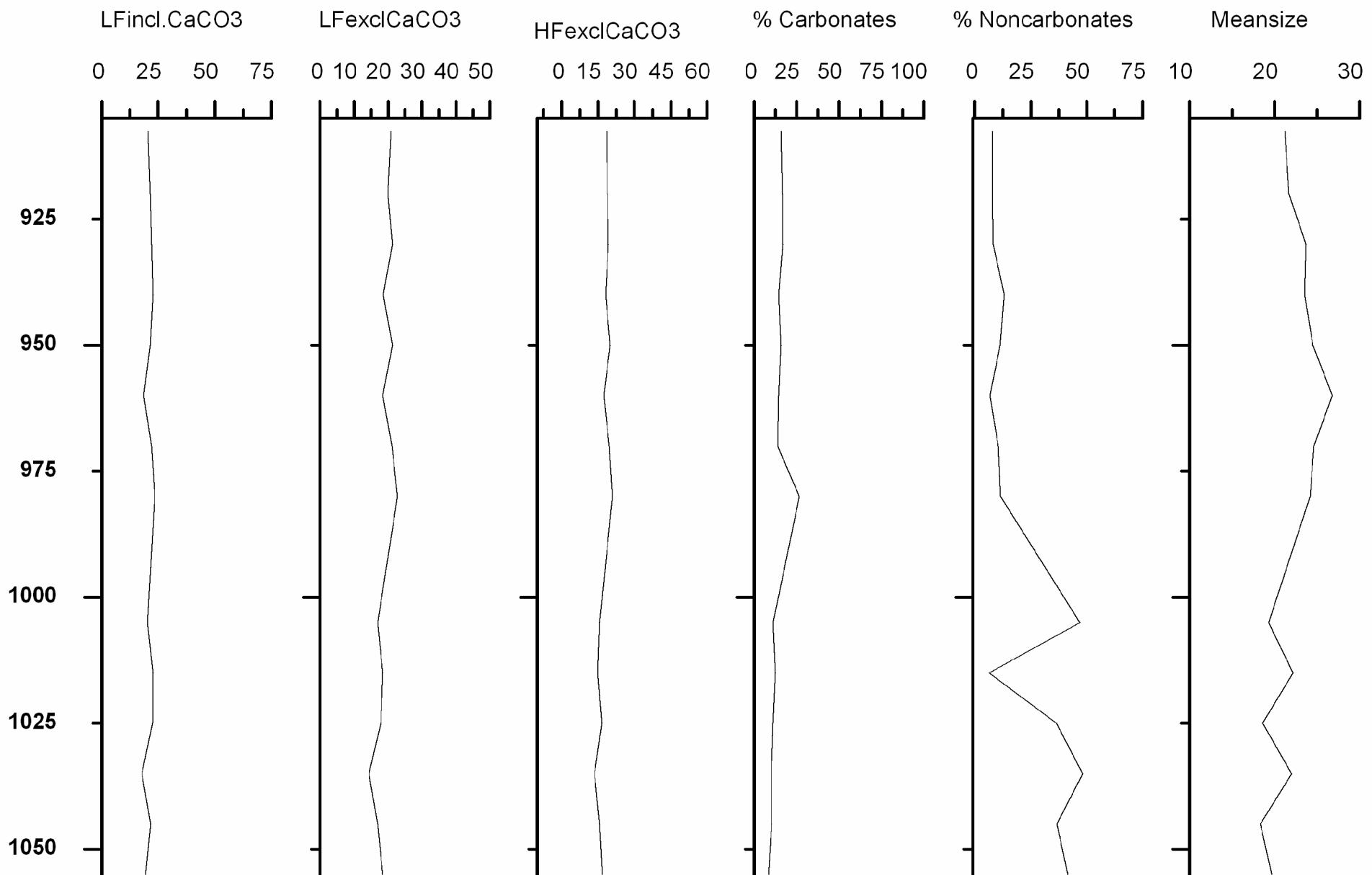


Figure 16 – Biriuchaya Balka 1a
Sedimentary data

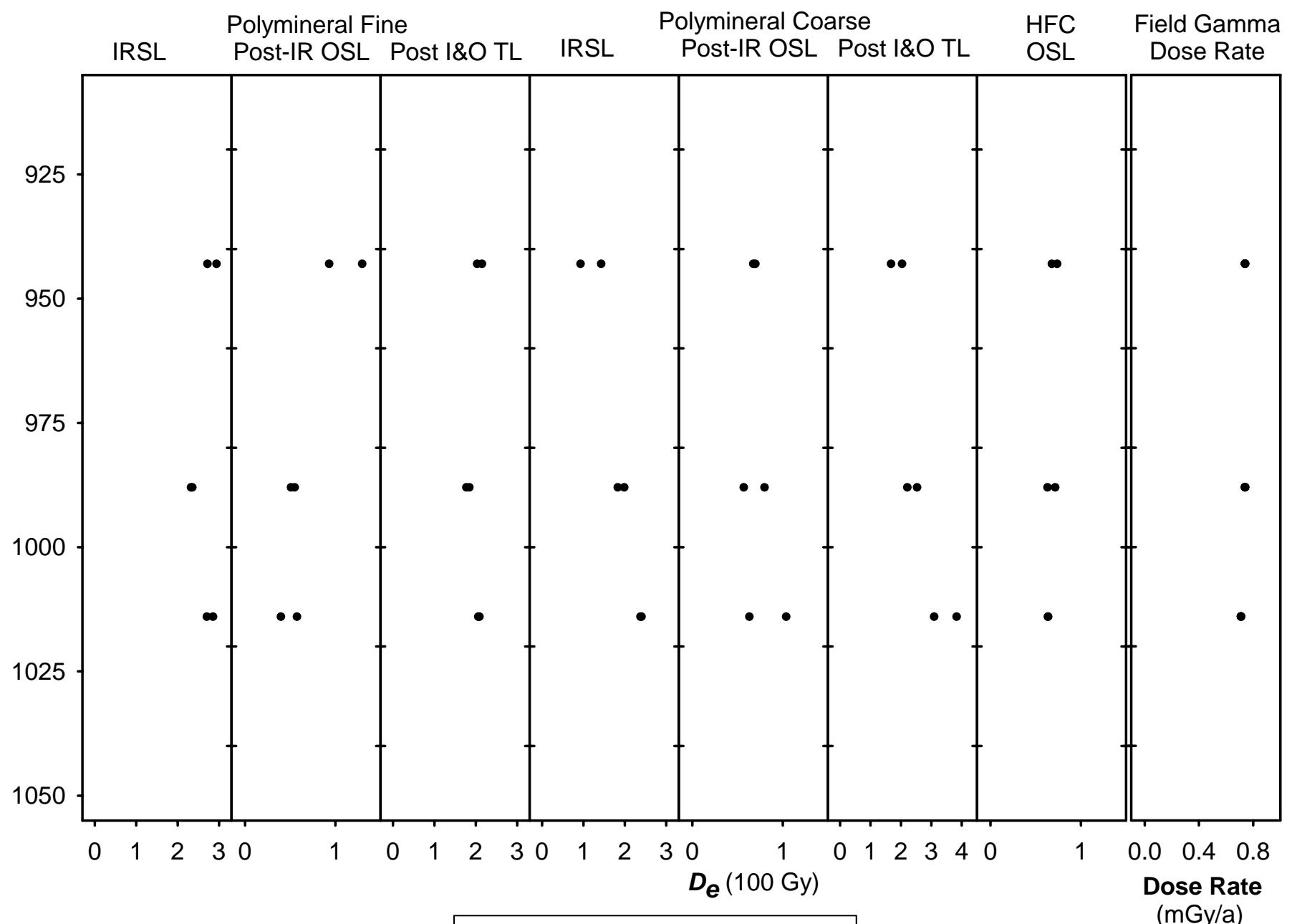


Figure 17 – Biriuchaya Balka 1a
Luminescence profiling data (905-1055
cm)

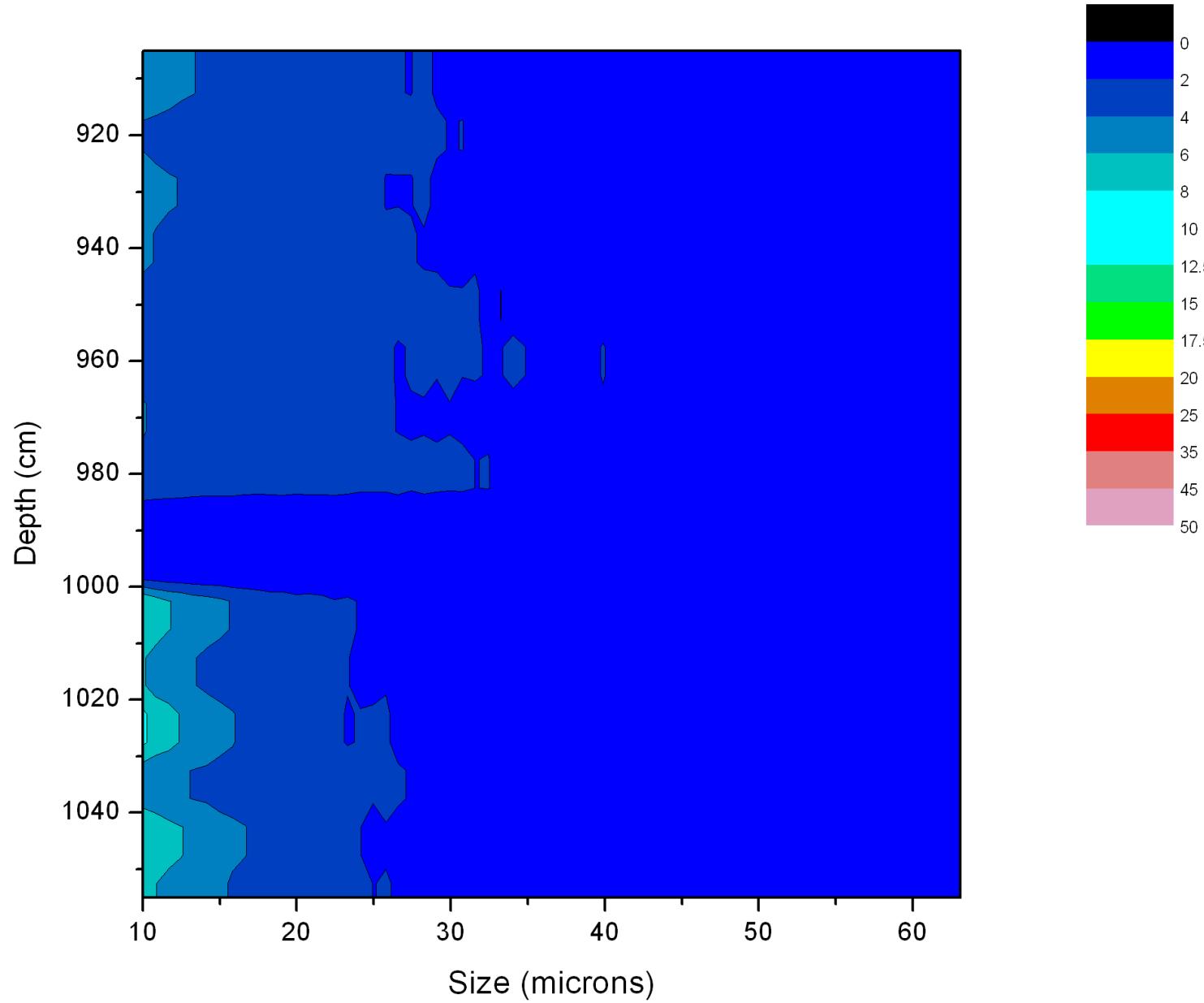


Figure 18 - Biriuchaya Balka 1a
Coulter PSD data

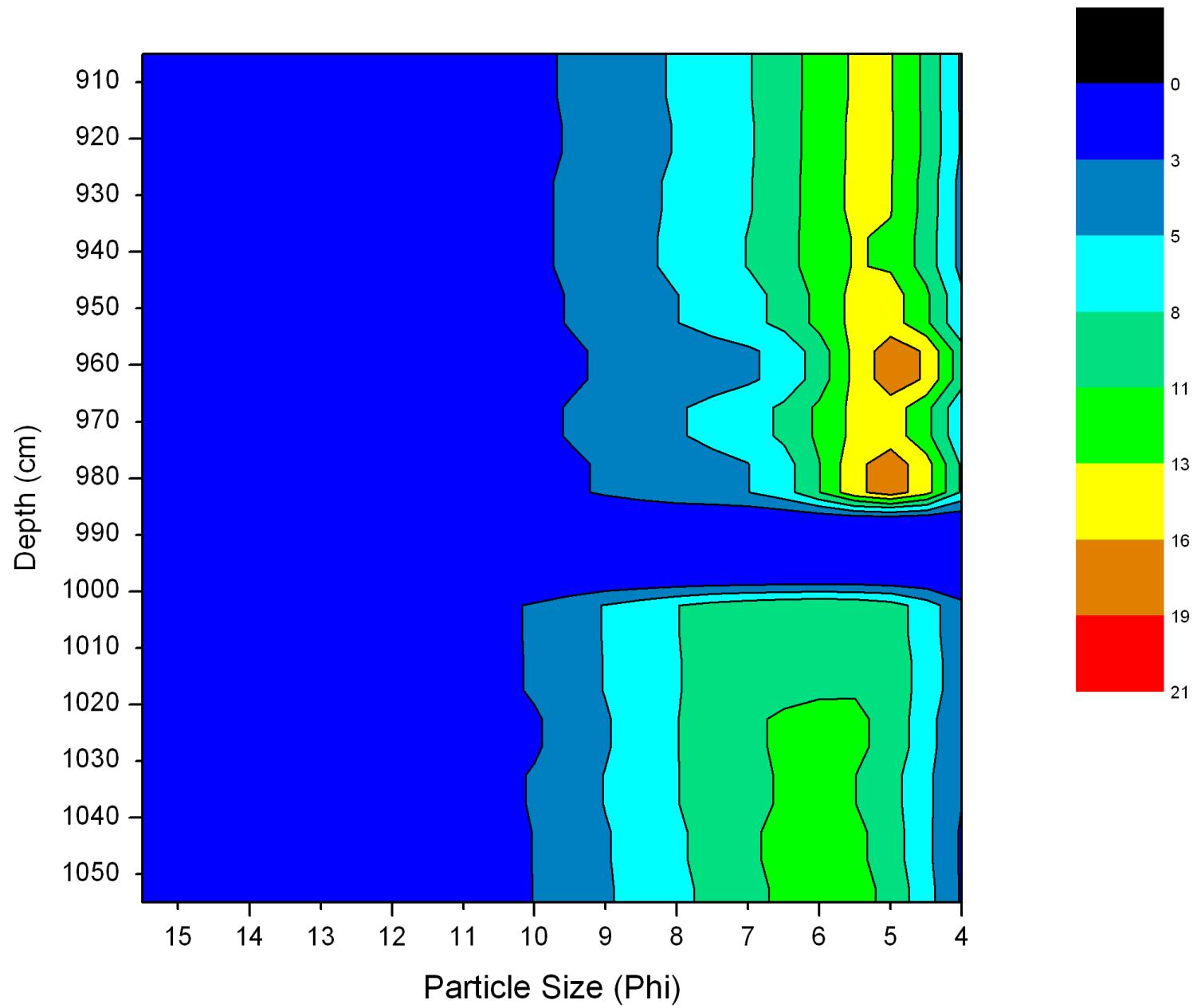


Figure 19 - Biriuchaya Balka 1a
Malvern PSD data

Kostenki 14

Notes

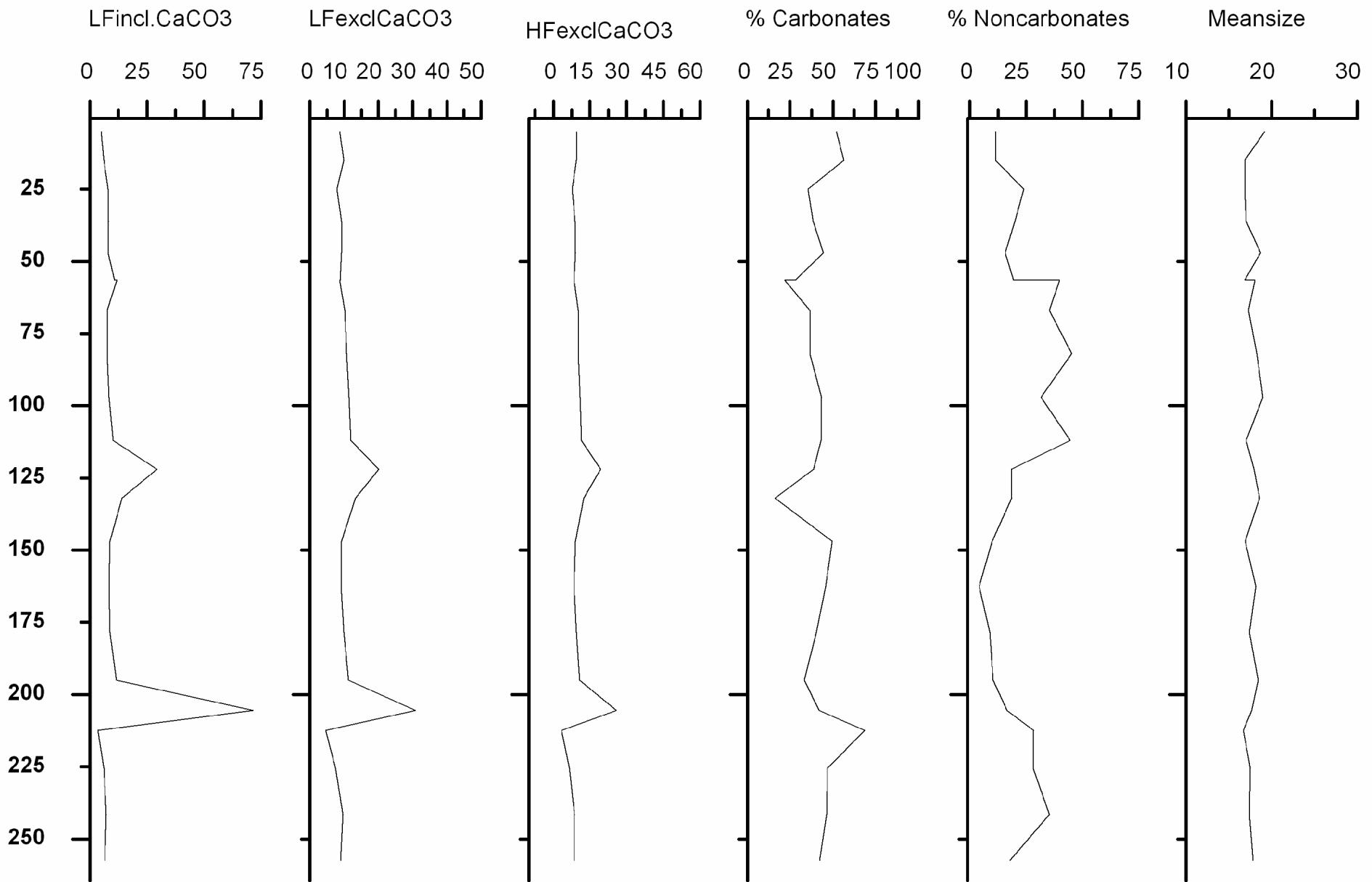


Figure 20 – Kostenki 14 Sedimentary data

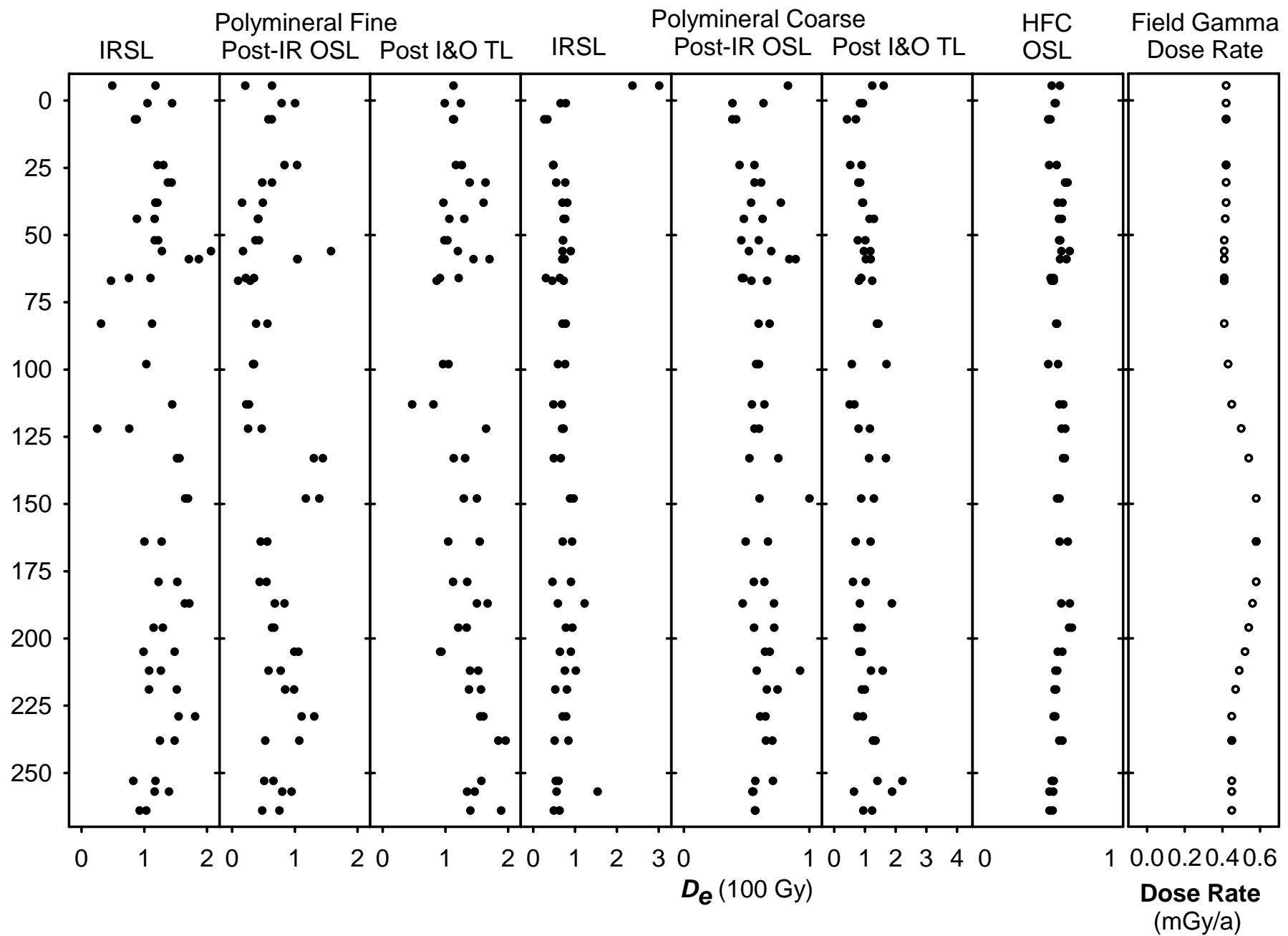
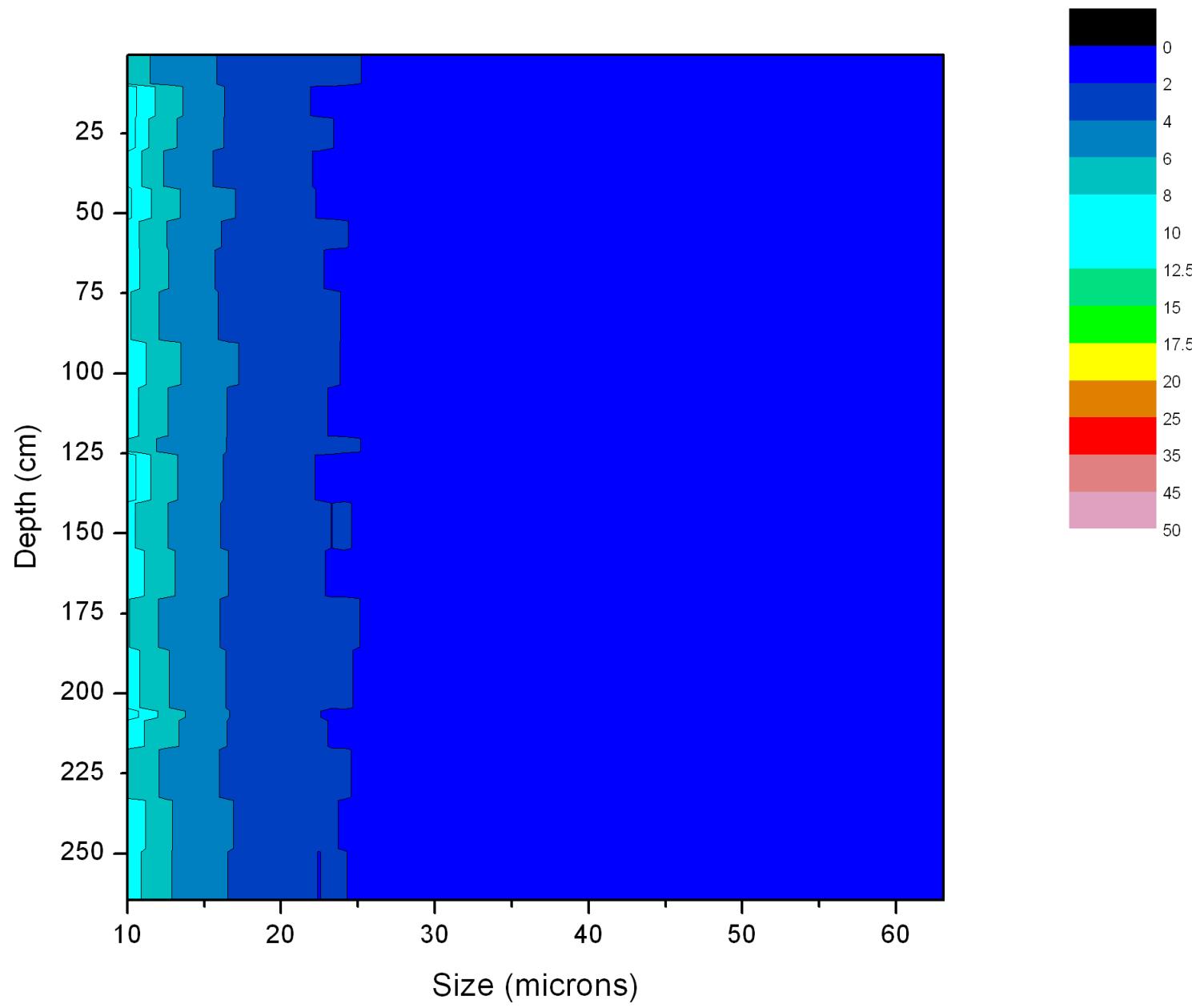


Figure 21 – Kostenki 14 Luminescence profiling data



**Figure 21 – Kostenki 14 Coulter PSD
data**

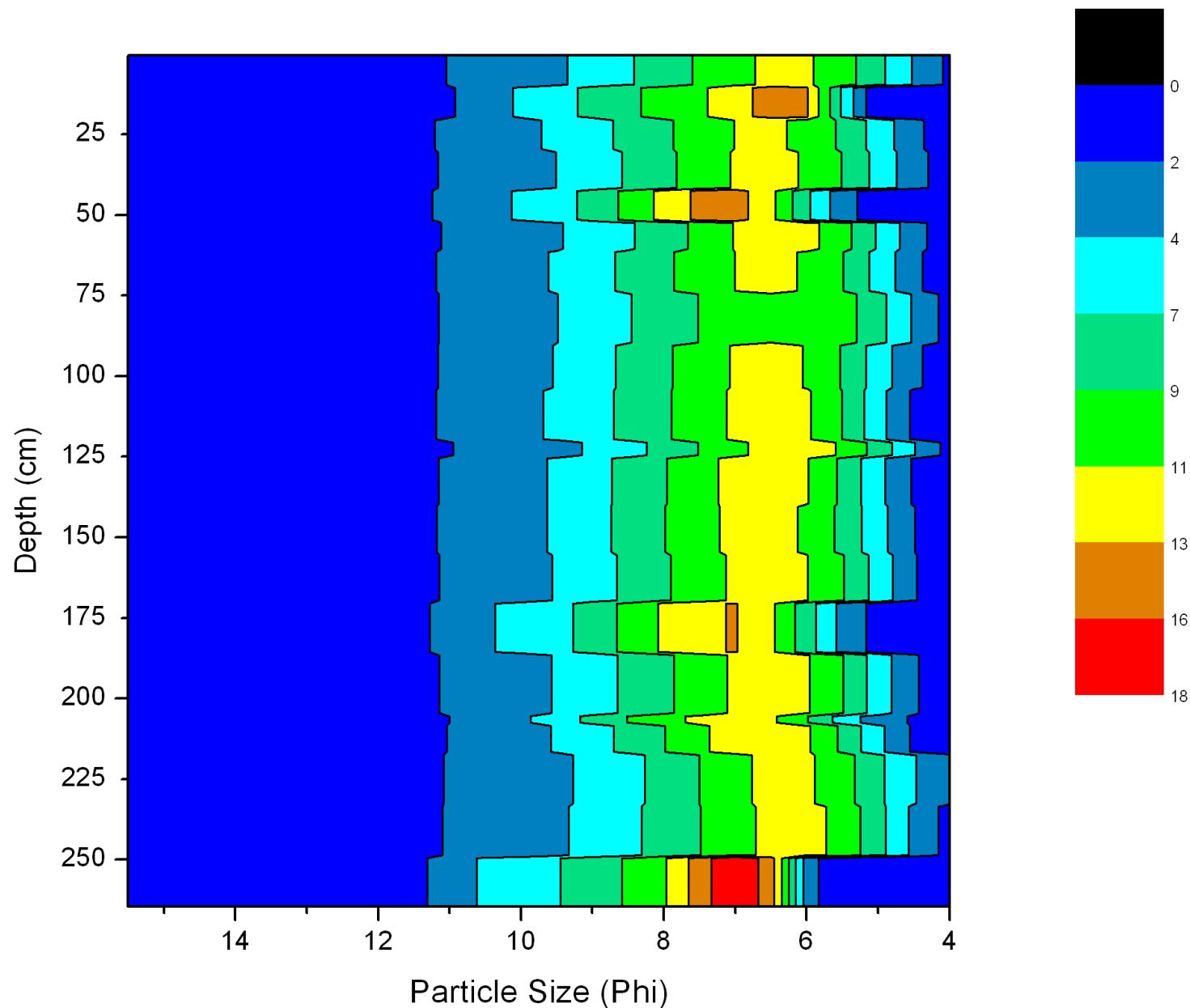


Figure 22 – Kostenki 14 Malvern PSD
data

Malaya Vorontsovskaya

Notes

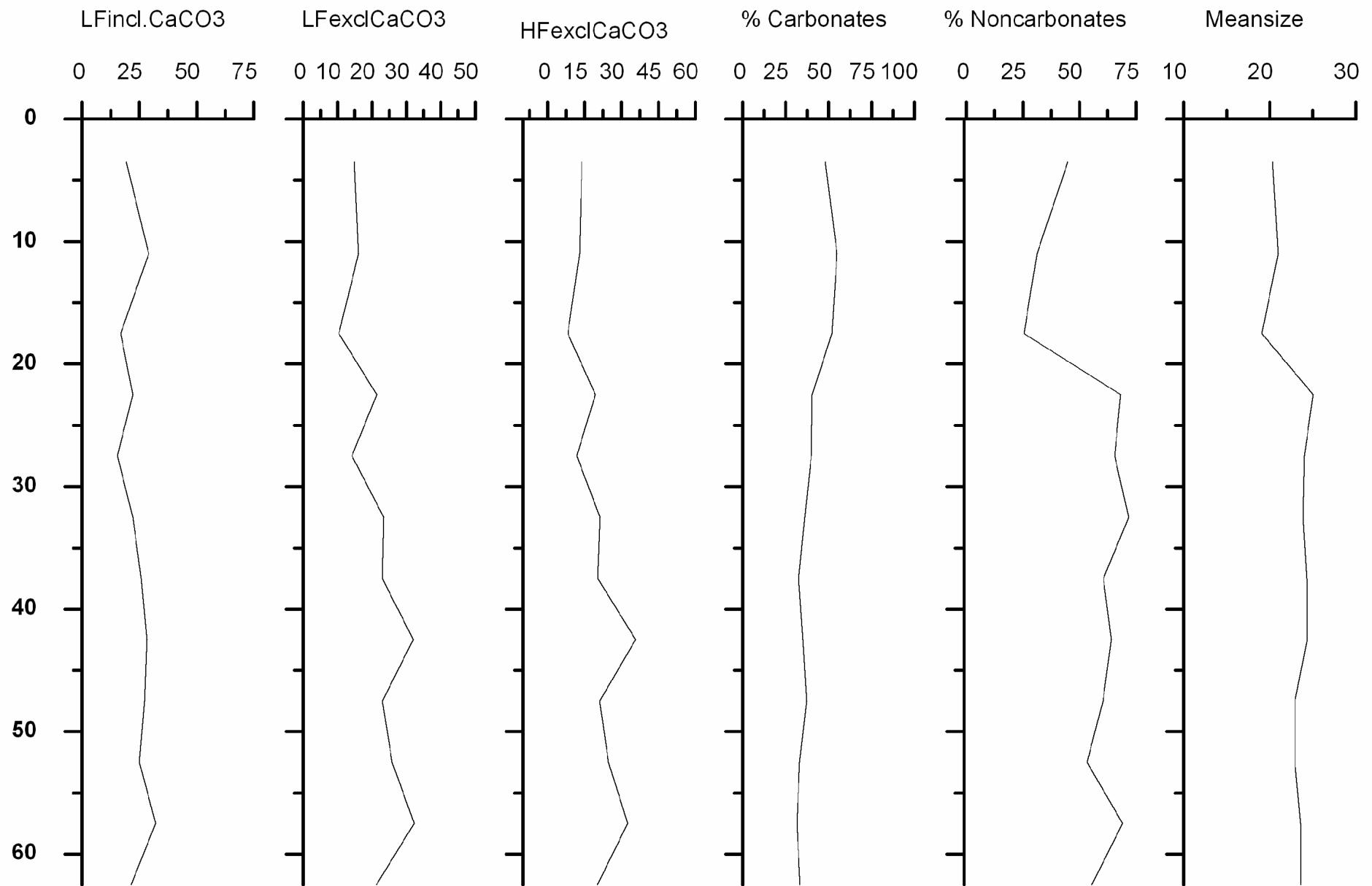


Figure 23 – Malaya Vorontsovskaya
Sedimentary data

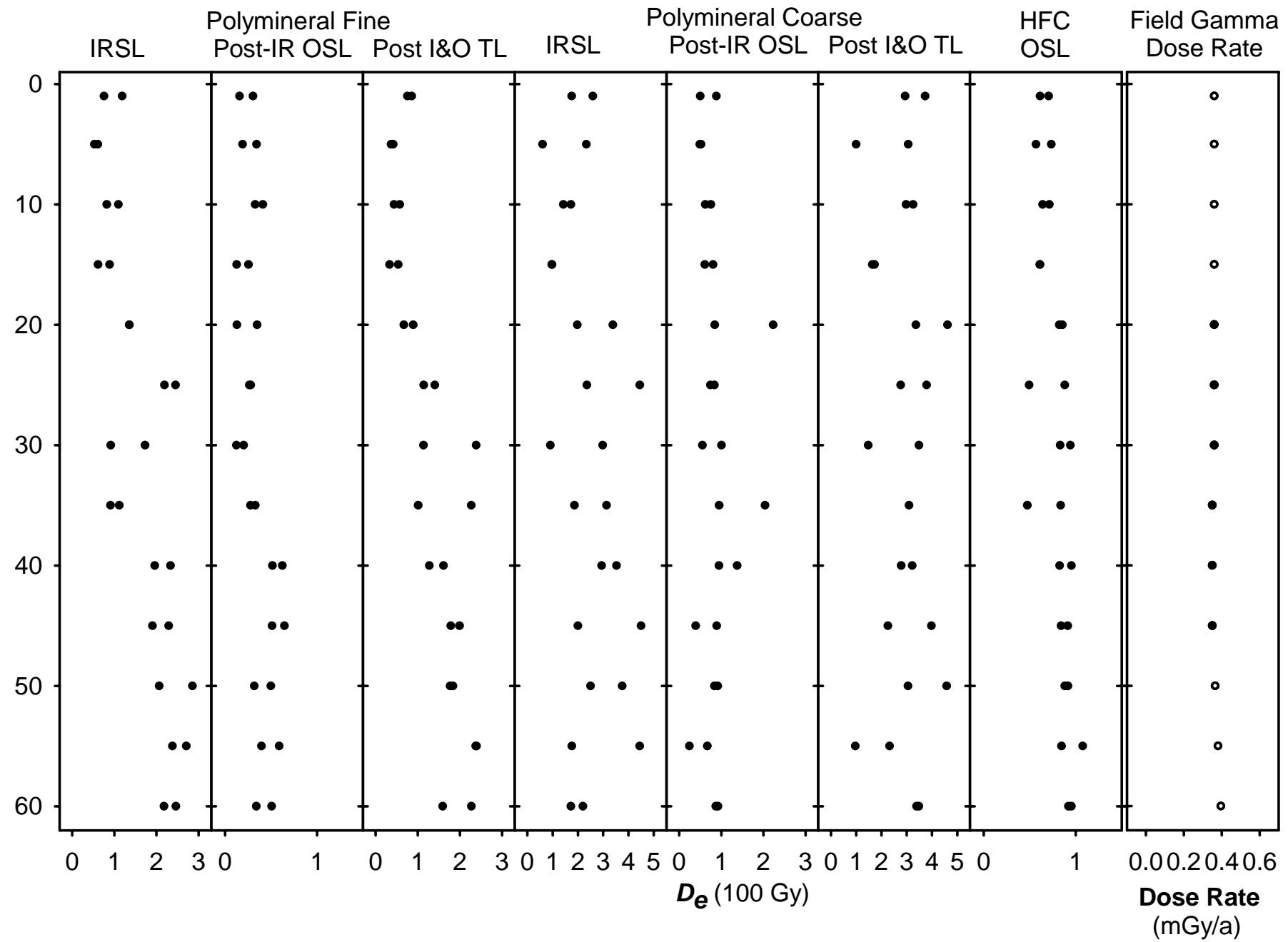


Figure 24 – Malaya Vorontsovskaya
Luminescence profiling data (0-62 cm)

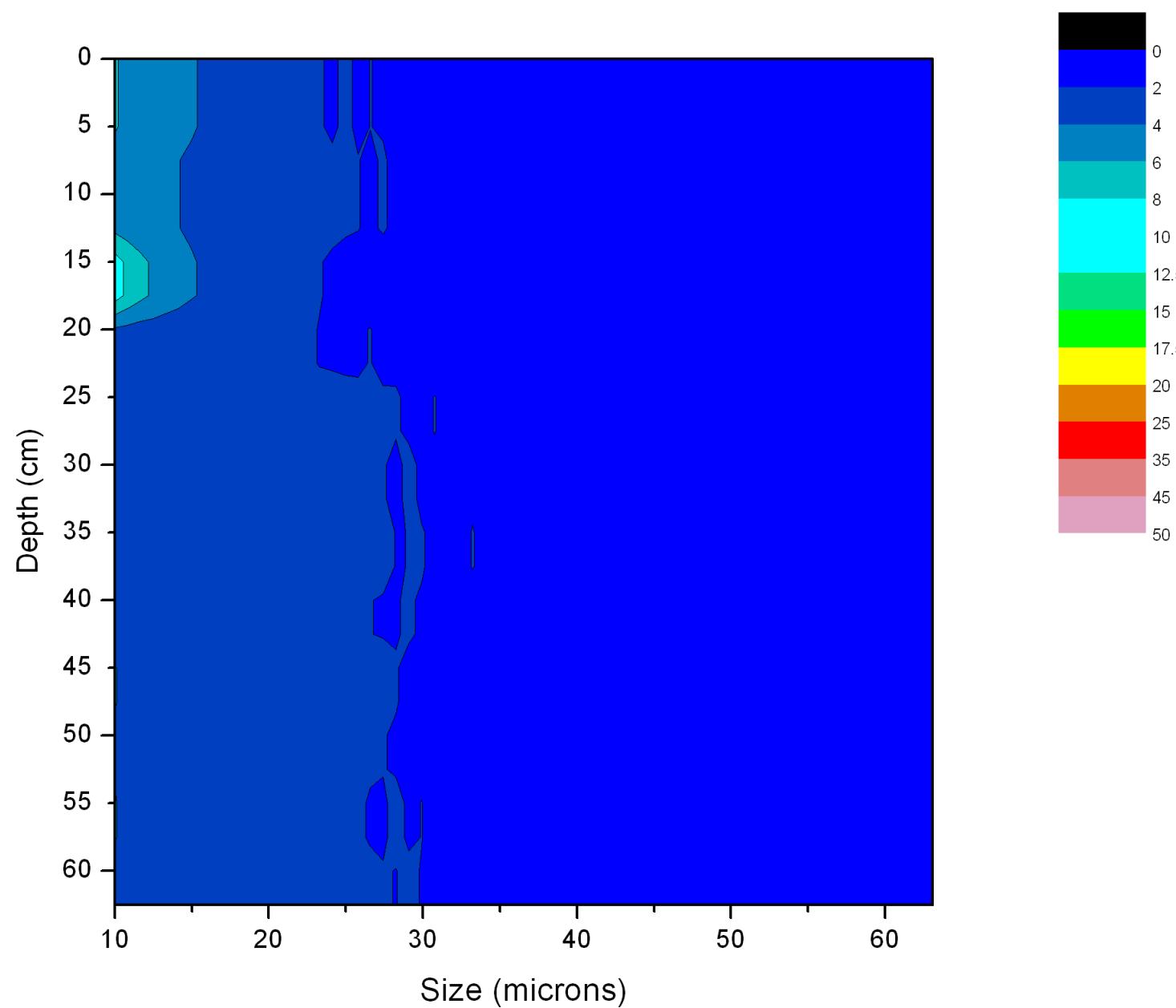


Figure 25 - Malaya Vorontsovskaya
Coulter PSD data

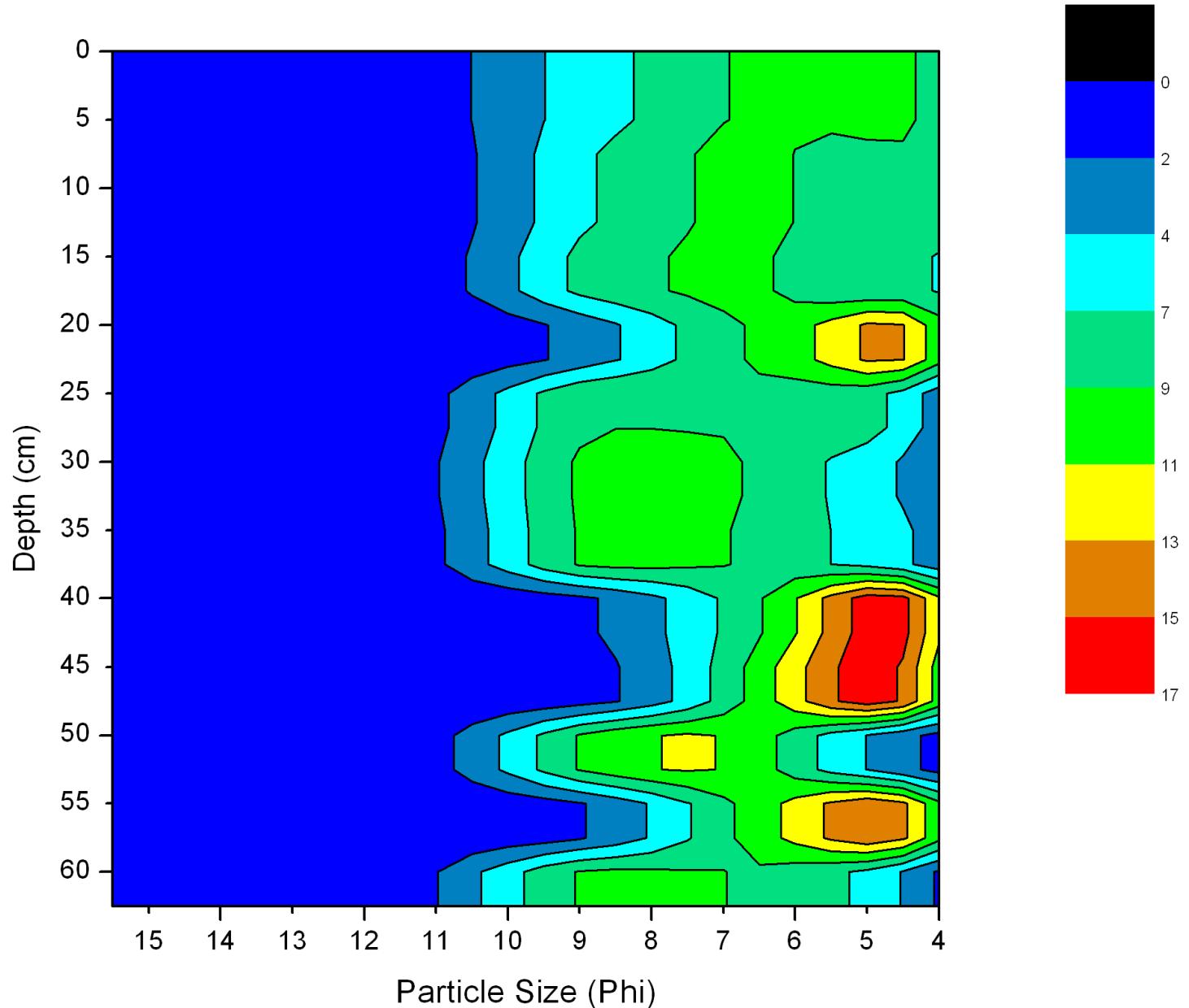


Figure 26 - Malaya Vorontsovskaya
Malvern PSD data

Monasheskaya

Notes

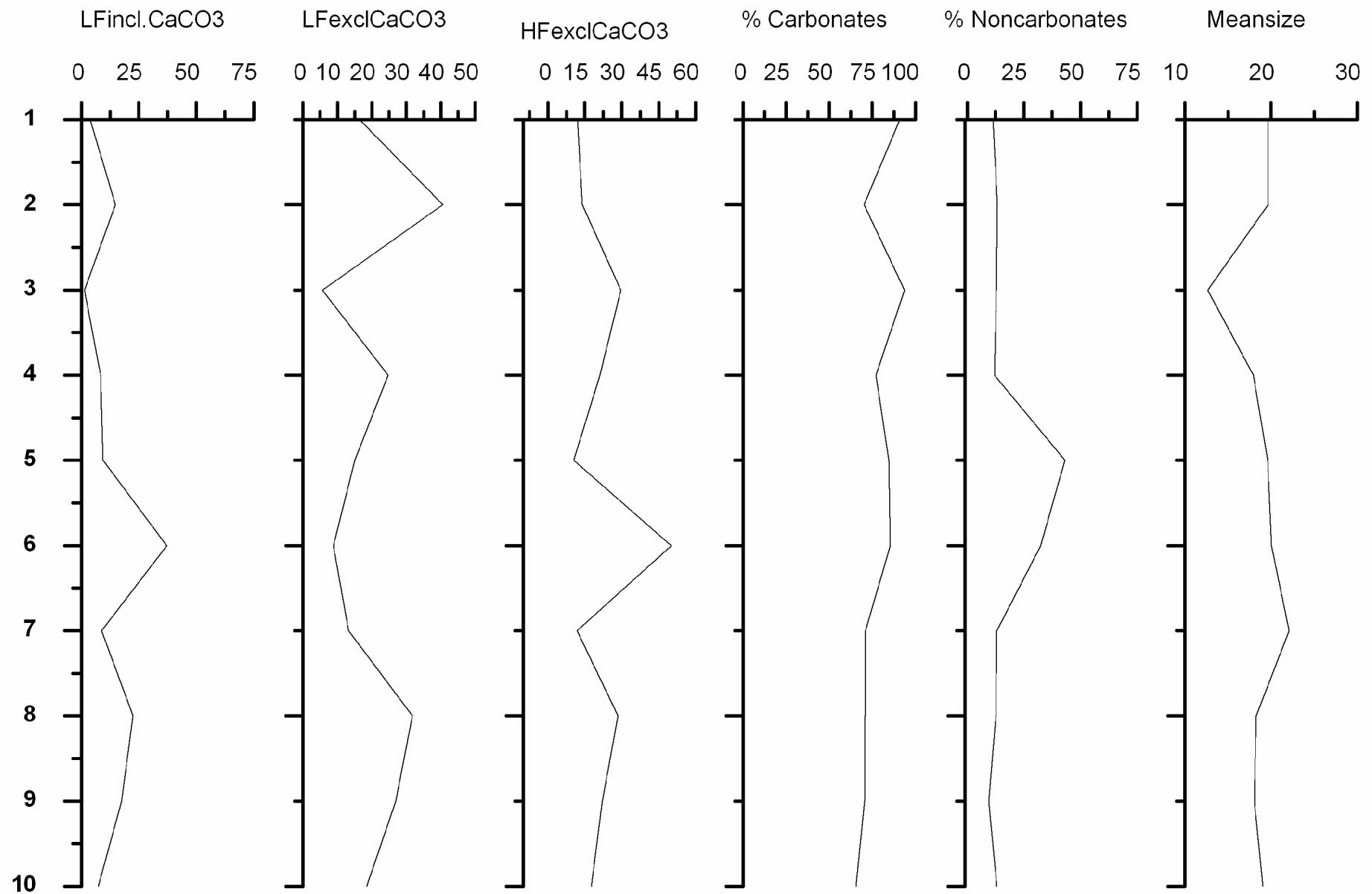


Figure 27 - Monasheskaya Sedimentary data

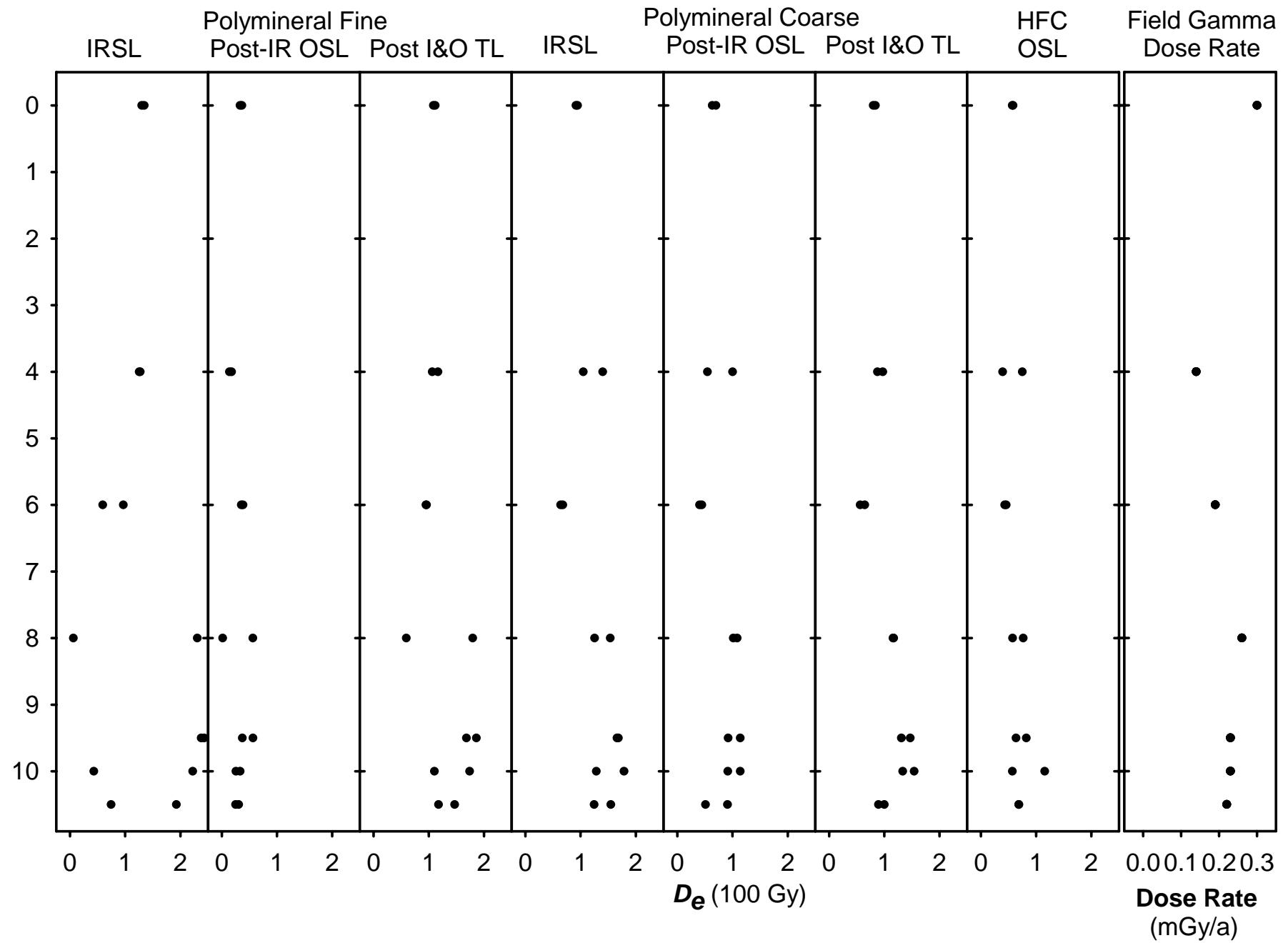


Figure 28 - Monasheskaya
luminescence profiling data

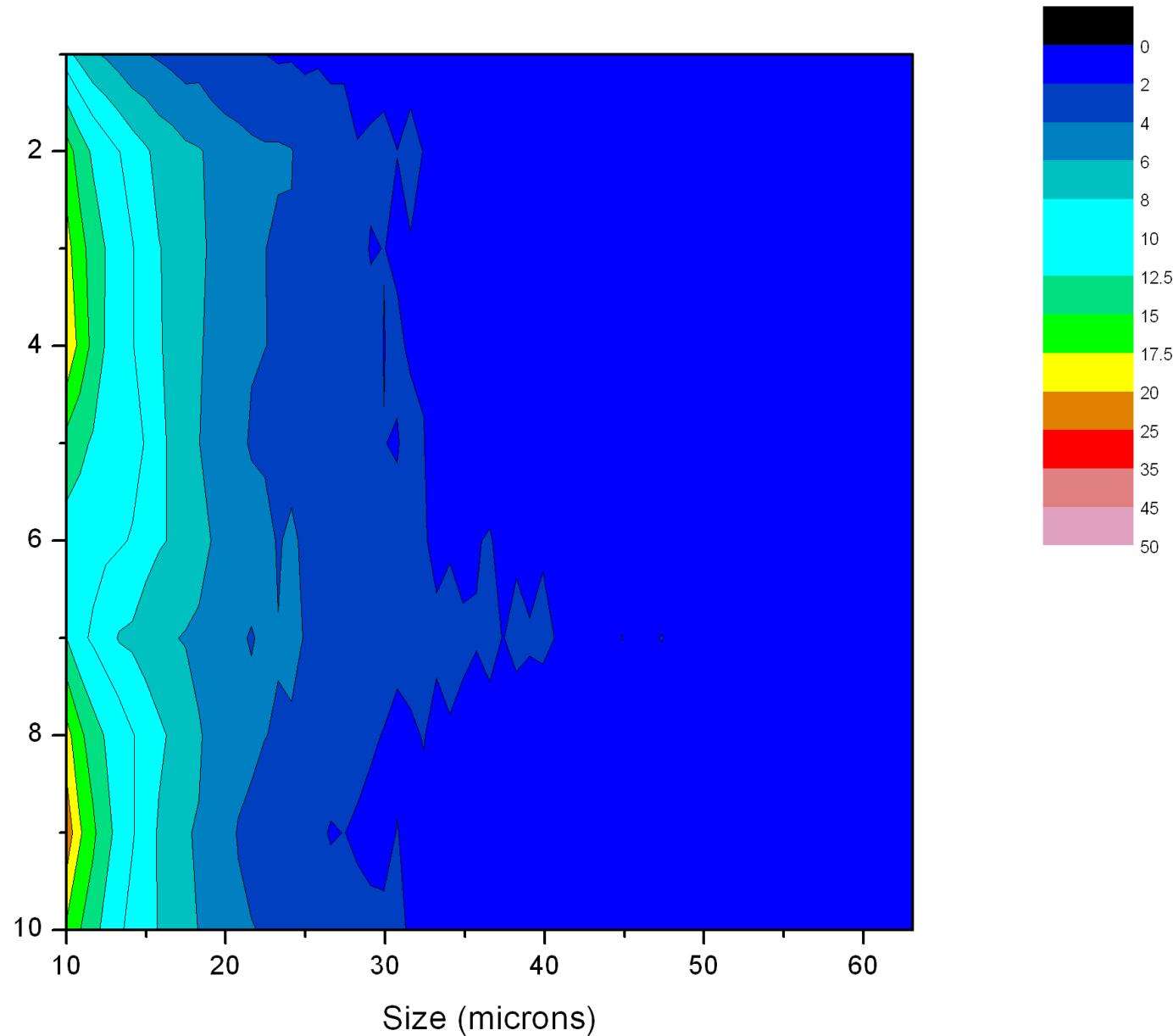


Figure 29 - Monasheskaya Coulter PSD
data

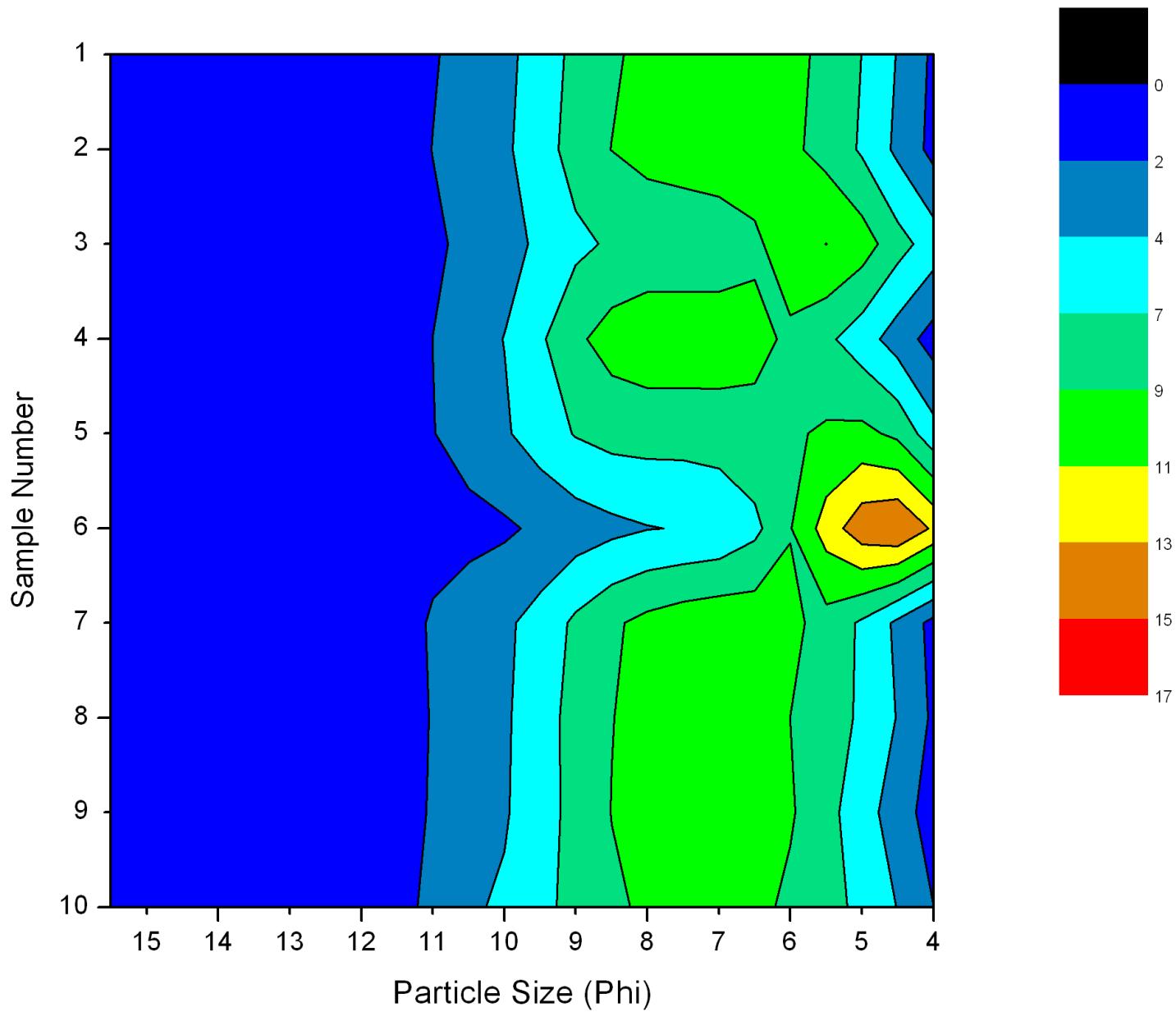


Figure 30 - Monasheskaya Malvern
PSD data

Gubs Rockshelter

Notes

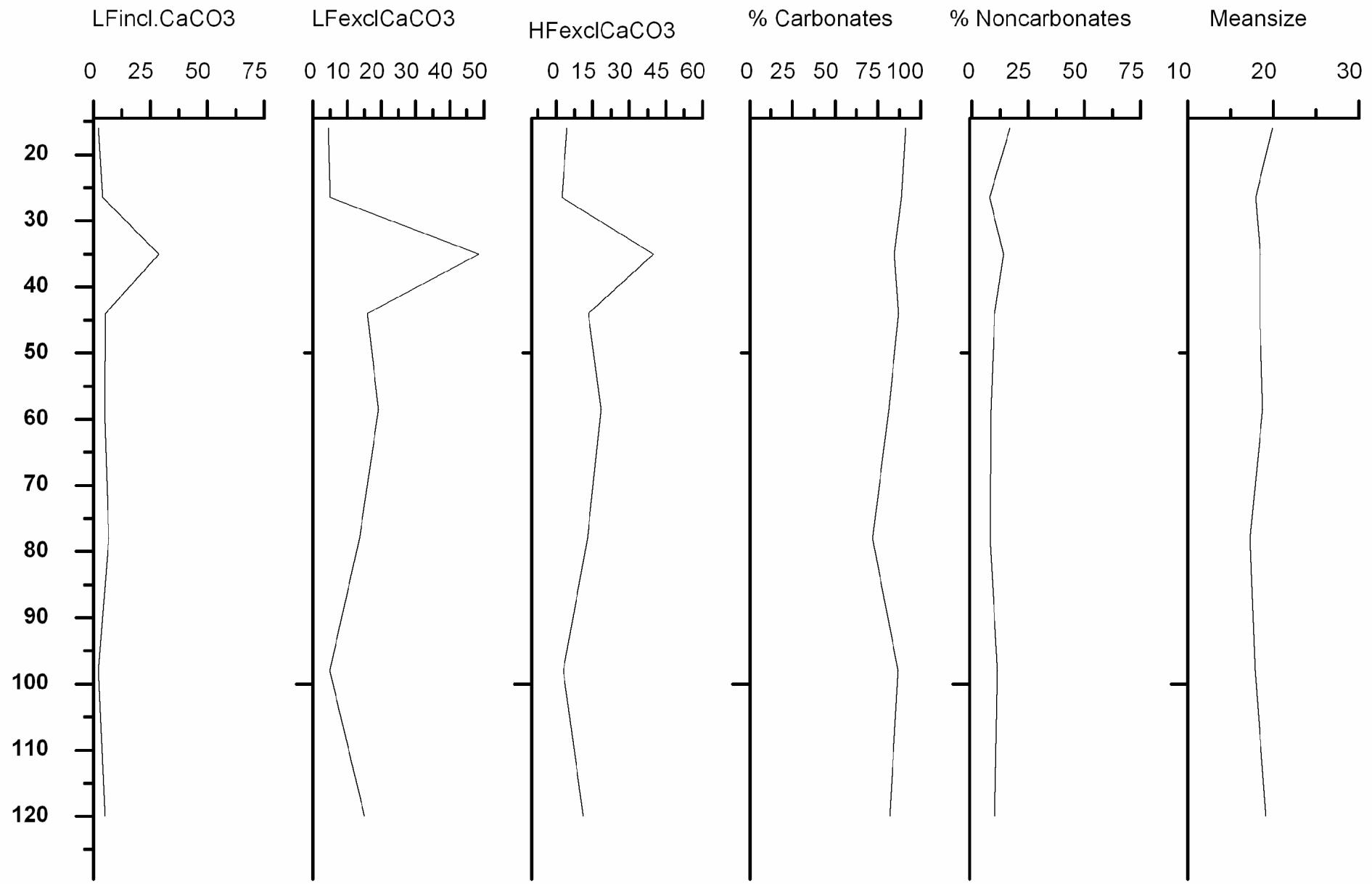


Figure 31 - Gubs Sedimentary data

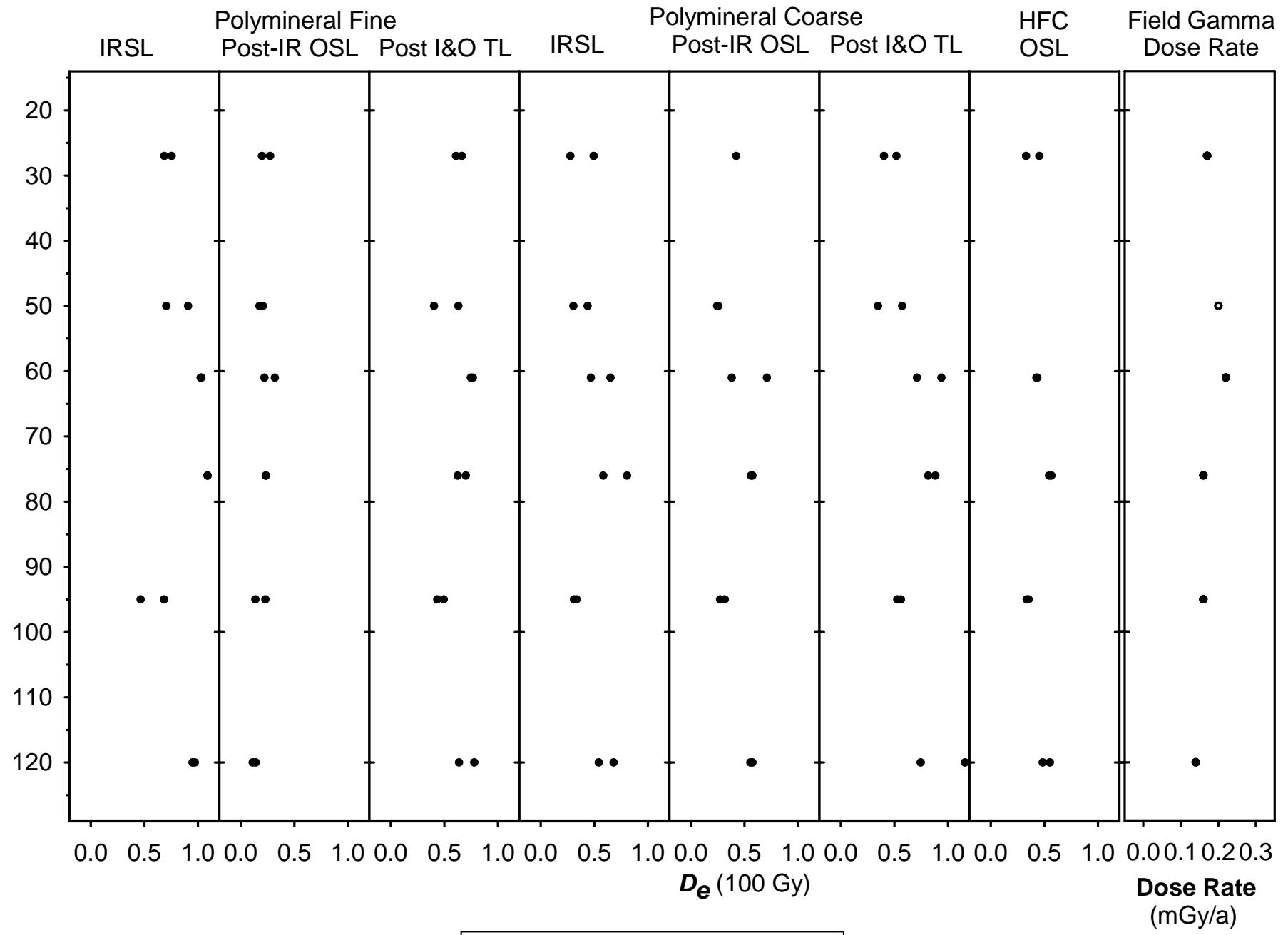


Figure 32 - Gubs luminescence profiling data

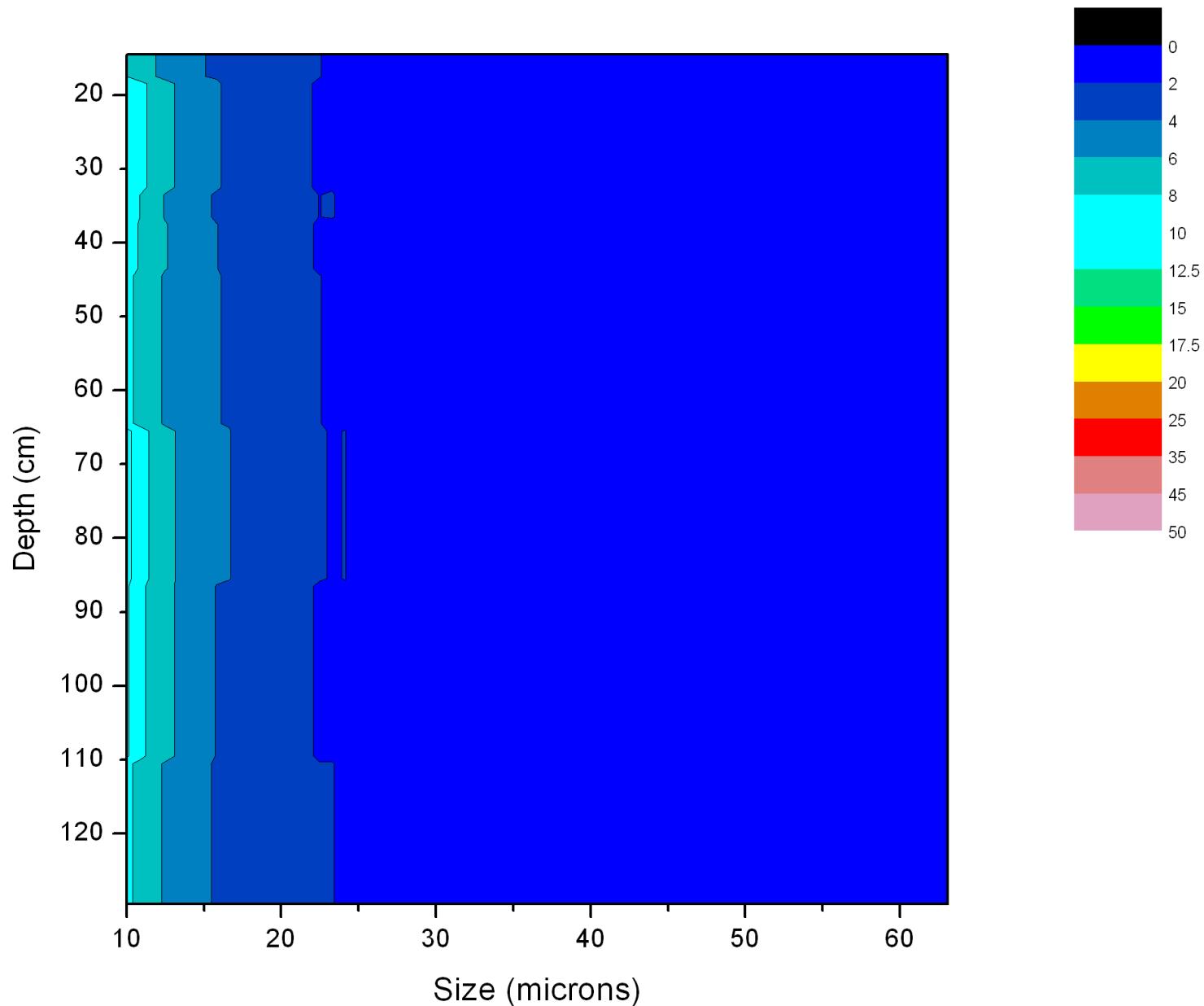


Figure 33 - Gubs Coulter PSD data

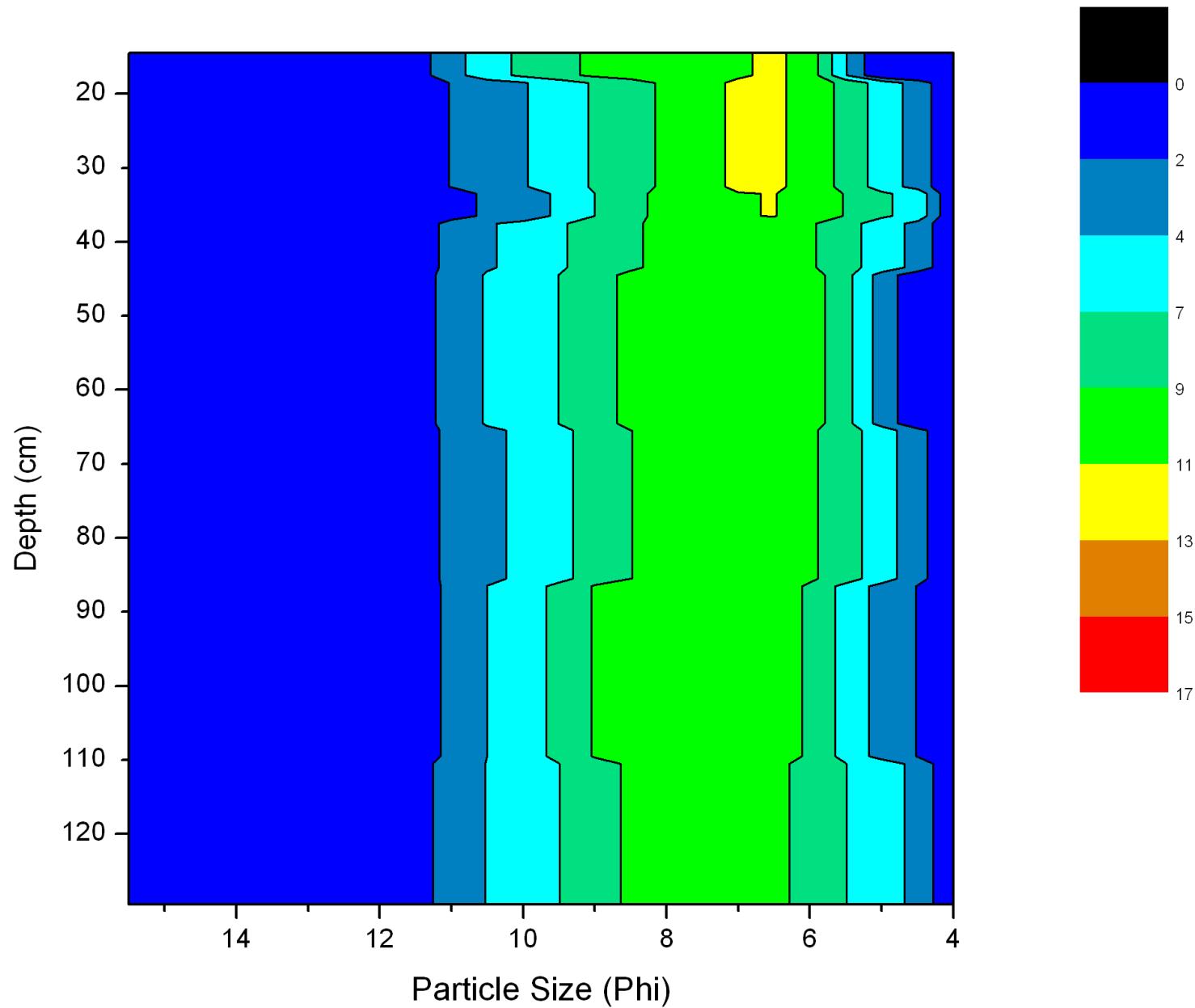


Figure 34 - Gubs Malvern PSD data

Navalishinskaya

Notes

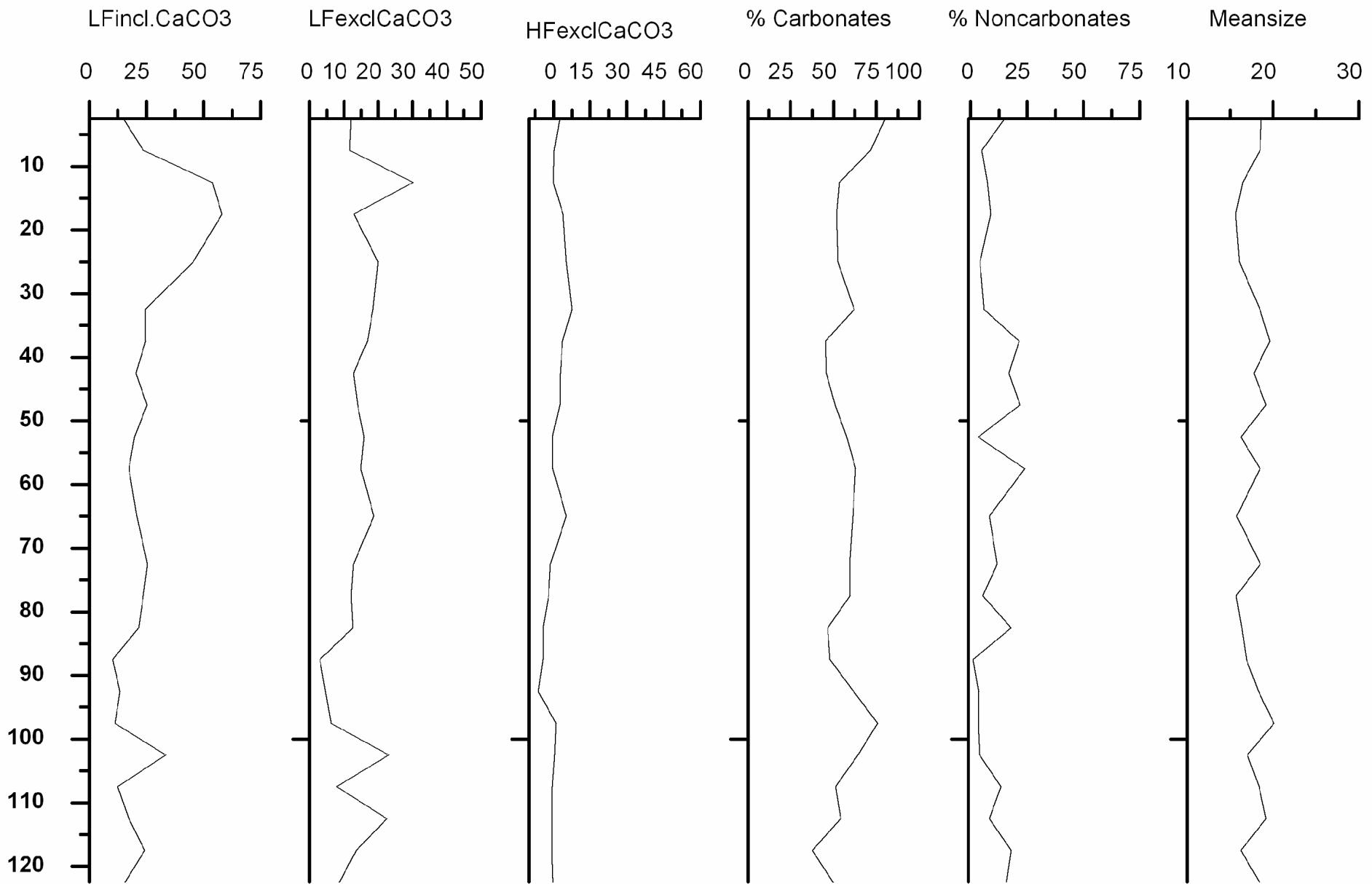


Figure 35 - Navalishinskaya
Sedimentary data

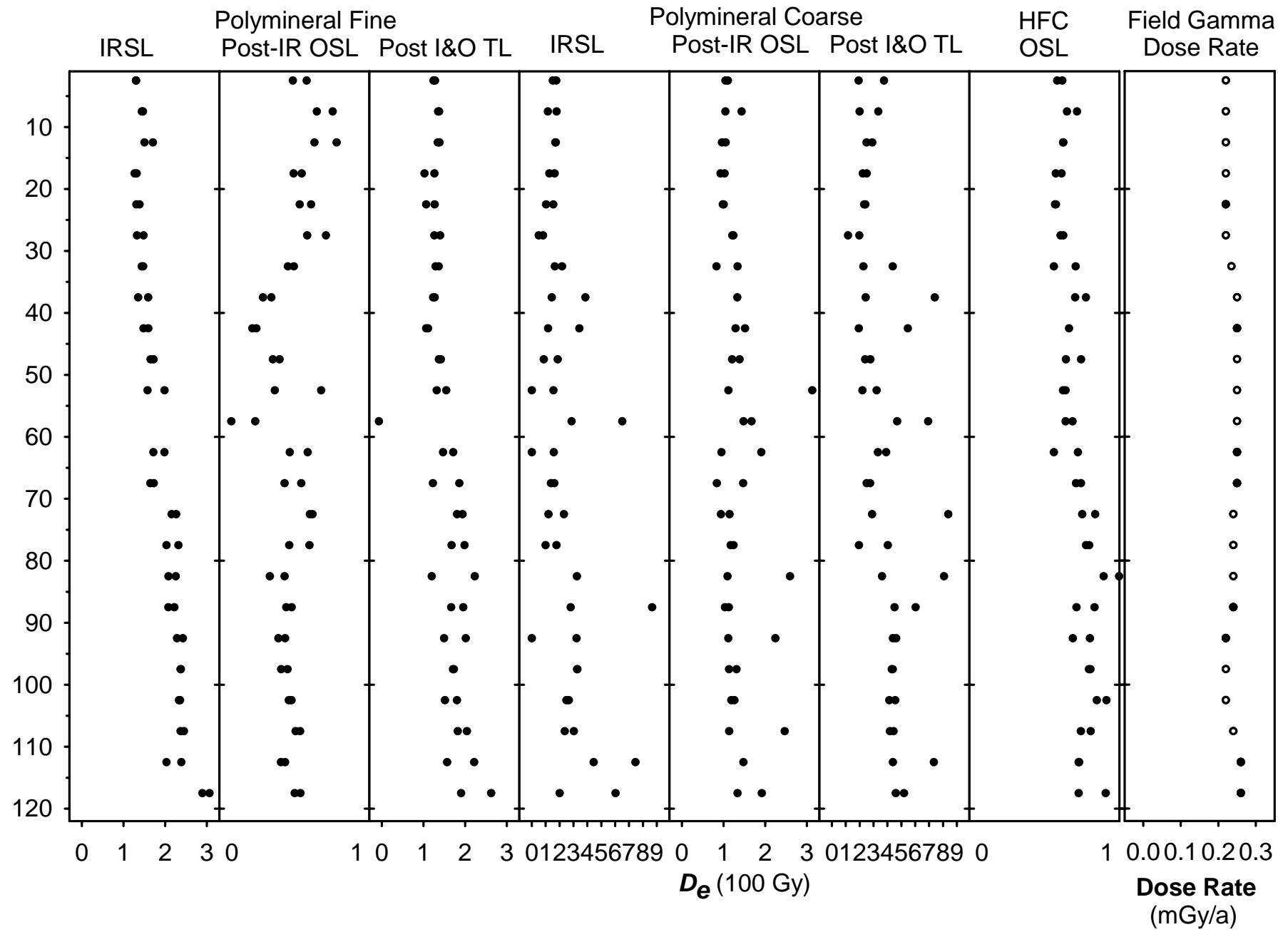


Figure 36 - Navalishinskaya
luminescence profiling data (1-122 cm)

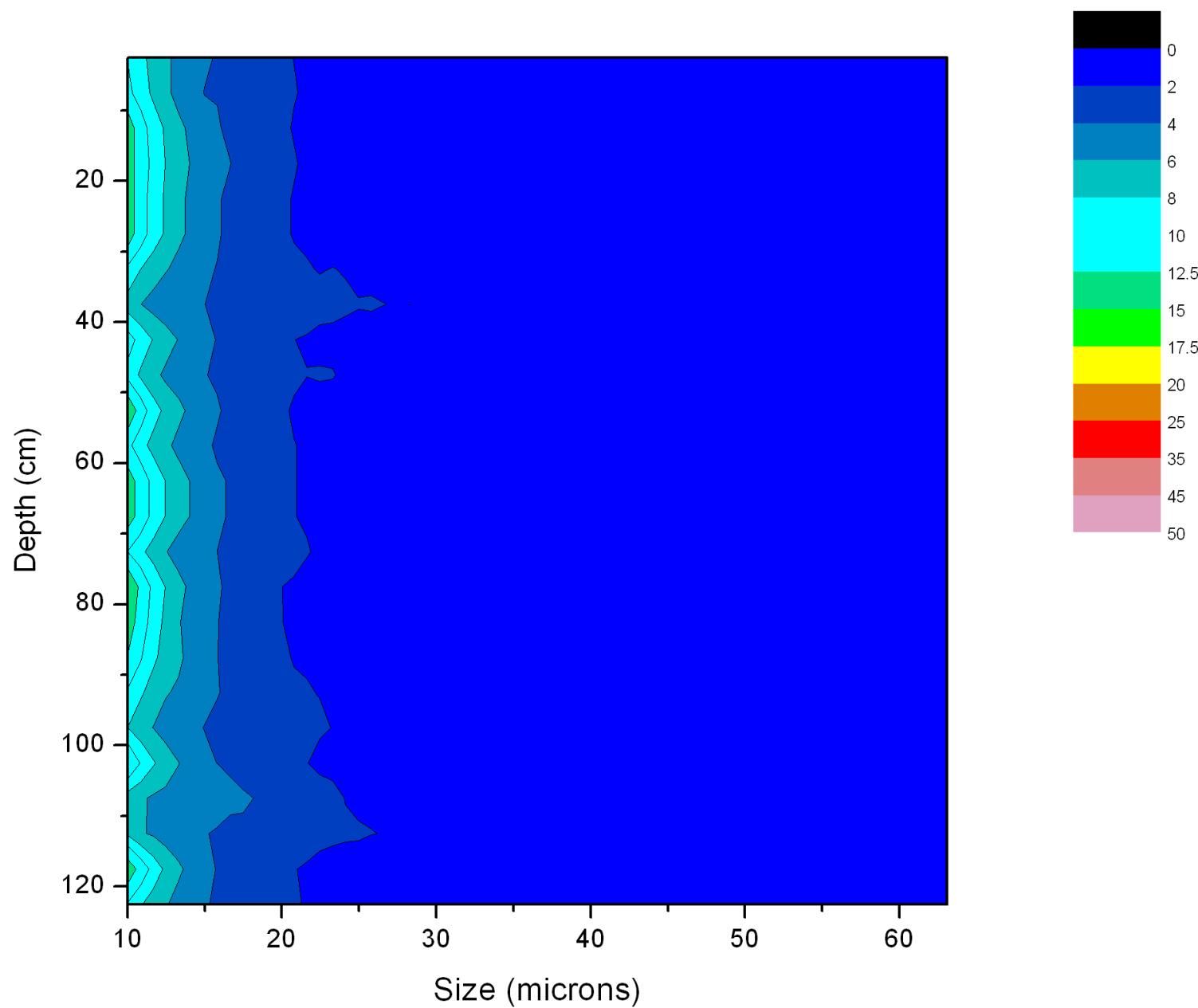


Figure 37 - Navalishinskaya Coulter
PSD data

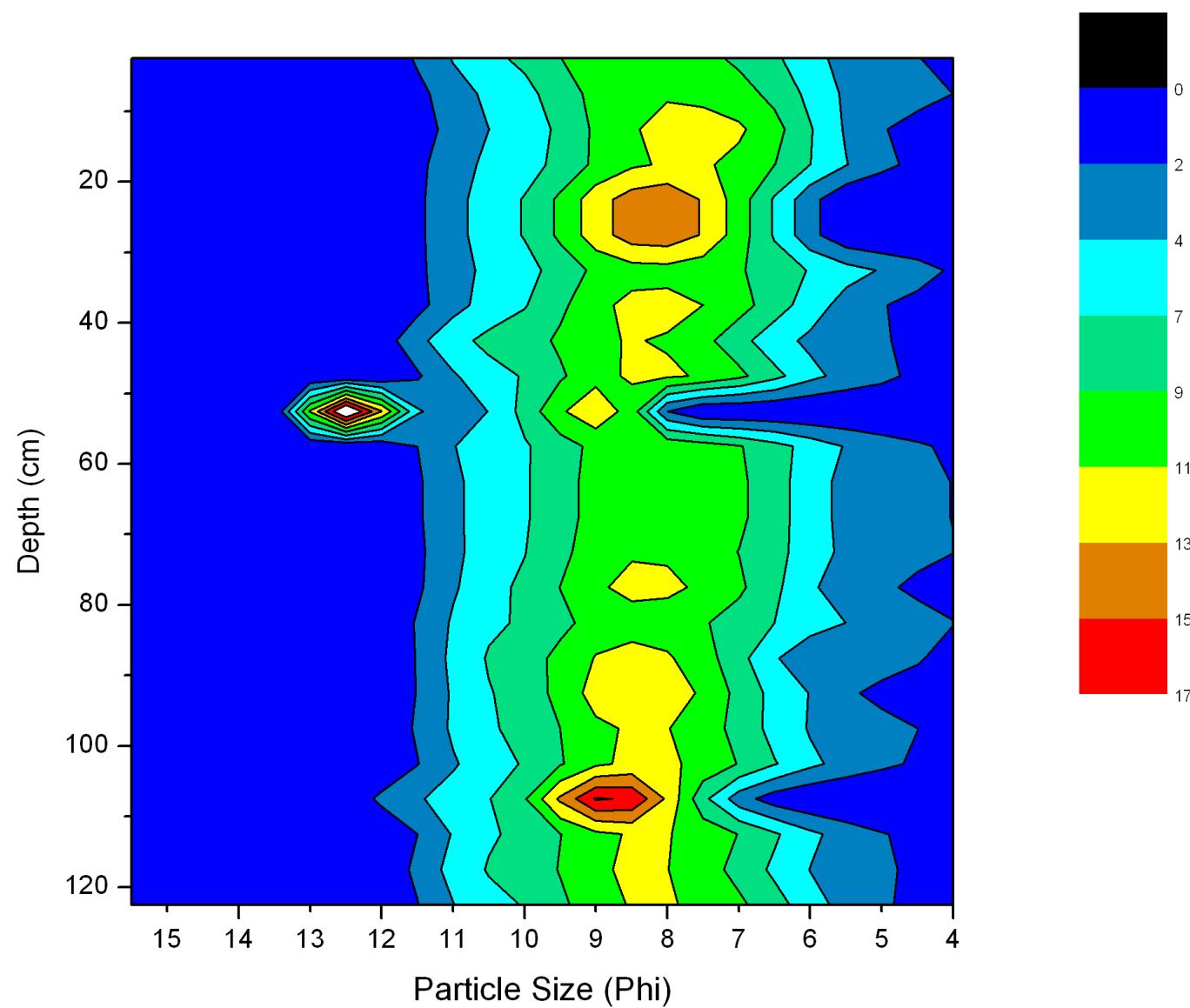


Figure 38 - Navalishinskaya Malvern
PSD data