Reflection seismic 1
script

Exercise for Reflection seismic 1 - Excercise 2 (19.11.2000)

(1) Determine the parameters for a seismic measurement. Some information is obtained from test measurements.

(a) The interesting Frequencies are between 30 Hz and 400 Hz.
Which sampling interval should be used for this measurement?
What is the Nyquist frequency for the used sampling interval

(b) The target of the measurements is present at about 300 m depth. We assume that the seismic velocities are between 1000 m/s and 2000 m/s (obtained from e.g. Refraction measurements). How long should the time window be?

(c) The measurements, for the parameters determined in (1) und (2), are measured with a 120-channel-System. The system stores the data using 4-Bytes per value. How much space on a harddrive is needed for 800 shots?

(d) The Geophones have a separation of 5m. Every 20m a shot is fired. What is the fold using a 120 channel system?

(2) Try to distinguish the differentnm seismic events in the picture shown on the next page (direct wave, reflected wave, refracted wave. Try to obtain the velocity of the different layers.

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Questions:
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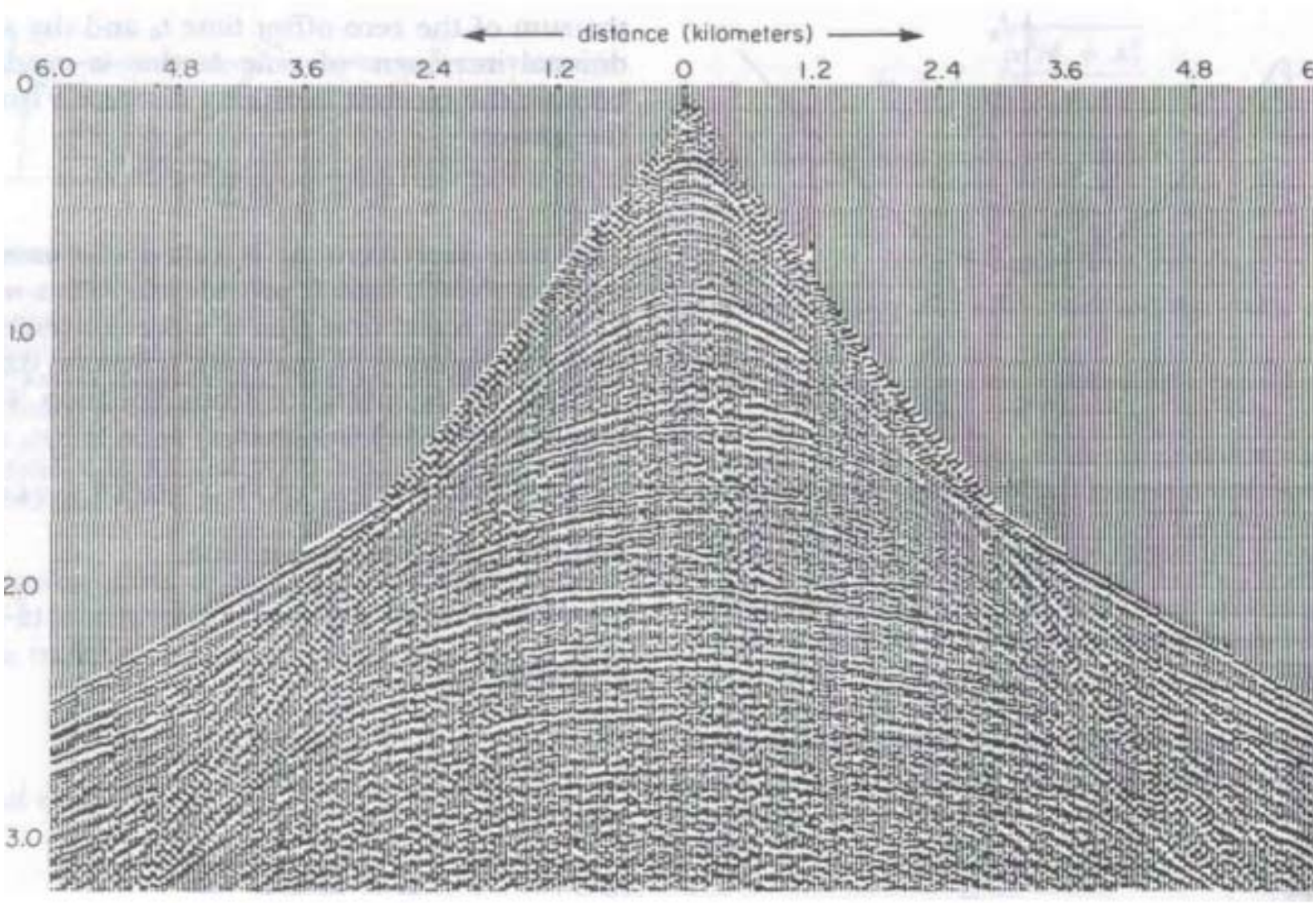
distance (kilometers)
6.0
4.8
3.6
2.4
1.2
0
1.2
2.4
3.6
4.8
0
1.0
2.0
3.0