# Reflection seismic 1
## script

# Exercise for Reflection seismic 1 - Exercise 3 (03.12.2001)

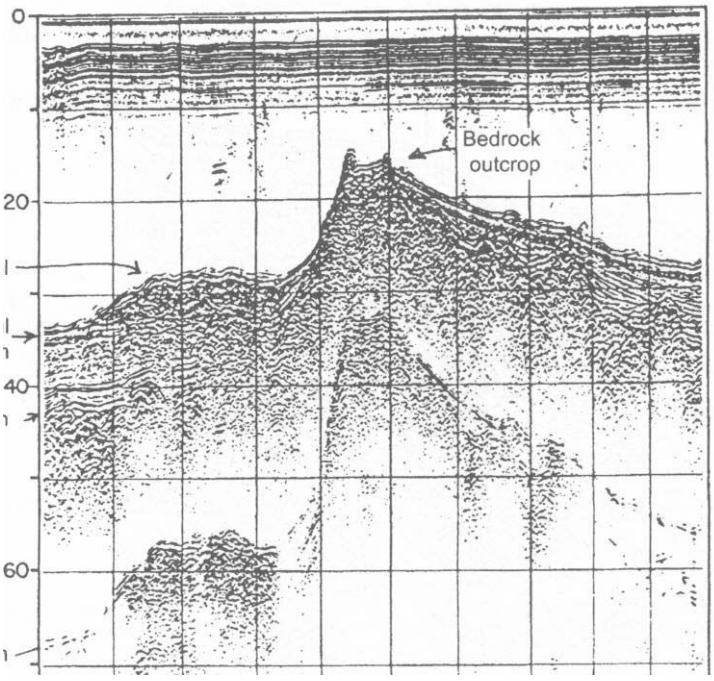
(1) Determine the vertical and horizontal resolution for a seismic measurement at a depth z for a maximum frequency f and a seismic velocity v:

(a) f = 3.5 kHz; z = 50 m; v = 1600 m/s
(b) f = 30 Hz; z = 3000 m; v = 3500 m/s
(c) f = 100 Hz; z = 100 m; v = 1800 m/s
(d) Suggest a typical application for the resolution and parameters of (a), (b) und (c). Which seismic source is appropriate for (a), (b) und (c)?

(2) Calculate the following convolution $x_k = g_k * f_k$
with g = 0, 1, 0, 3, 4, 5
and f = 1, 4, 4, 1

(3)Calculate the Autocorrelation $\phi_{xx}$ for the following function:
$x_k$ = 1, 0, 2, 0, 1, 2, 1, 0, 0, 1, 2, 1
with a shift from -5 till +5
(without normalisation)

(2) Identify the reflection and the accompanying multiple in the following figure:

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**Questions:**
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