F-K Analysis (1B)

Young Won Lim
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Please send corrections (or suggestions) to youngwlim@hotmail.com.

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Dispersive Rayleigh Waves

Geometrical and mechanical characterization of the Earth's crust

Shallow geophysics – to estimate soil stiffness

Identification process

Experimental dispersion curve

Inversion process to estimate soil stiffness profile

Numerical simulation of surface waves propagation
in layered linear elastic media

Unidimensional model – a regular horizontally stratified soil deposit
Different modes of propagation – soil heterogeneity

Assumption: distinct experimental dispersion curves
for the fundamental and for the higher modes

SASW (Spectral Analysis of Surface Waves)
using a single pair of geophones - cost and time effective
Mode superposition effect requires
forward problem of surface wave propagation

References

[1] http://en.wikipedia.org/
[2] S. Foti, et. al, "Notes on fk analysis of surface waves", 2000