

Geop480: Lectures (18)

Engineering Seismology-1

**The Refraction Microtremor
(ReMi) Method**

Mid-Term Exam 2

• January 7, 2007

Outline

- Remi
- Equipment
- Data Acquisition
- Remi Method
- Case Works

Previous Presentations

The image shows three presentation slides. The top-left slide is titled "Faster, Better: Shear-Wave Velocity to 100 Meters Depth From Refraction Microtremor Arrays" by John N. Louie, presented for GEOP 480. The top-right slide is titled "Comparative Study of the Refraction Microtremor (ReMi) Method" by Satish Pullammanappalli and Bill Honjas. The bottom slide is titled "DETERMINATION OF 1-D SHEAR WAVE VELOCITIES USING THE REFRACTION MICROTREMOR METHOD" by Hassan Al Ramadhan.

Refraction Microtremor (ReMi) Technique

- Based on two fundamental ideas
 - 1) Standard refraction equipment deployed similar to a shallow P-wave refraction survey to record ambient "**background**" noise (**microtremor**)
 - *Depth of sampling is a function of the array length, natural frequency of the geophones used, and the subsurface velocities*
 - 2) Slowness-frequency (p-f) transformation of the recorded microtremor
 - *Separate **Rayleigh waves** from other seismic arrivals and allow identifying true phase velocity against apparent velocities*

A courtesy of Dr. Satish Pullammanappalli

Solution For Environmental Risk

Landslides in FAIFA, SW Saudi Arabia



From: Dr. Al-Shabani, Dec 19, 2006




