

Introduction to Reflection Seismology

One Day Course

The seismic display:

Axis

What it is good for

Time slice

What is seismic data?

Acoustic wave low frequency sound wave

Pressure wave displayed as a sine wave.

Elastic - the rock is not permanently changed.

Optics - reflection, refraction

Physics - acoustic properties, rock properties

Terminology : period, frequency, wavelength, velocity $v=f\lambda$

Where does seismic data come from?

Acquisition

Source - dynamite, vibroseis, air guns, etc.

Detector - geophone hydrophone

Data processing

Terms:

2D/3D/4D

Fold

CDP, CRP, CMP

Terms (continued):

Nyquist Frequency

Time to depth

Migration

Resolution

Precision

AVO - Amplitude Variation with Offset

Inversion

Tying seismic to wells/subsurface

VSP

Checkshot

Synthetic

Interpretation/Mapping

Faults

Horizons

Stratigraphy