DISPLAY VA Stacked Geophone Data at one-way time

This display indicates the quality of data used in the VSP processing.

The edited data is aligned accurately, using cross correlation methods, prior to summation of common depth traces.

Unless otherwise stated, source signature deconvolution is applied to marine data using the source monitor signal as source signature in order to remove the source bubble and to account for any slight variation in source output.

A broad band (preliminary) filter is applied in order to remove noise without compromising the usable bandwidth of the data.

DISPLAY VA(FK) F-K Transformation of Stacked Geophone data at one-way time

This display is used for analysis of the frequency bandwidth of the data, to aid design of the preliminary filter.

The stacked geophone data (after source signature deconvolution, if appropriate) at one-way time, is transformed into F-K space. It is displayed as wavenumber (K) against frequency, with colour variation indicating amplitude in dB below peak amplitude.

A velocity alignment in T-X space transforms to an alignment in F-K space, rotated through 90° ; the various wavefields (velocity alignments) commonly observed in T-X space transform into F-K space as illustrated in Figure 1.

The strongest wavefield will normally be the downgoing wavefield and this transforms into an alignment from zero wave number, zero frequency, sloping in the positive wavenumber direction.

Significant velocity changes in a wavefield will result in multiple alignments in F-K space; it may not be possible to differentiate between the different alignments and the resulting event may be smeared.