

MULTI-DIMENSIONAL SEISMIC INVERSION FOR REFLECTION COEFFICIENTS
AND ELASTIC PARAMETERS (C-32)

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Multi-dimensional seismic inversion methods can be subdivided into migration techniques and inverse scattering techniques. In seismic migration the output consists of reflectivity information; in inverse scattering the acoustic or elastic parameters are aimed for. In this paper the principles of pre-stack migration and inverse scattering are reviewed and both methods are compared. It is concluded that in multi-dimensional seismic inversion it is recommended to compute the elastic parameters of the subsurface by a two-step approach. First angle-dependent reflection coefficients are computed by pre-stack migration, followed by a separate inversion process to compute the elastic parameters from the reflectivity information. It is shown that shot record migration defines an attractive tool to obtain angle-dependent reflectivity from seismic data. It is also shown that constrained parametric inversion, taking into account a priori information is an attractive tool to obtain elastic parameters from the shot record migration output.

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