

DMO AND NMO AS APPLIED IN SEISMIC DATA PROCESSING

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DMO (dip move-out) is recognized as the technique to image the steep dip events which are indiscriminately smeared when the data are processed with the conventional seismic imaging method, which includes NMO, CMP stacking and zero offset migration. From those published papers, we may find many ways to do DMO, such as prestack partial migration, DMO by Fourier transform, offset continuation, single channel DMO ... etc, and the improvements of these techniques are widely recognized. But every technique is available only in two-dimensional case.

To extend DMO to 3D (three dimensional) case, those techniques operating on constant offset section are generally available only when the feathering angle can be constrained in a very small value, but this condition is really hard to achieve when the sea current is rough. In this paper the author is going to extend the "Rocca's smile" operator into 3D cases, so that an easy way of doing DMO will be available to any 3D data.

A further consideration is also given to mixing the NMO with the DMO. The reason for doing this is not only to simplify the process and to save computer time, but also to search for more accurate velocity information for the NMO correction when the dip angle is large. This technique will be very effective comparing to sole DMO when the velocity changes very rapidly with depth.