

## COMMON-REFLECTION-POINT STACKING - A MODEL-DRIVEN APPROACH TO DMO (B-28)

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Dip moveout or DMO is known to be a valuable tool in today's processing schemes. DMO can be seen as an extension to the conventional processing of NMO correction, CMP stacking and post-stack migration. Processing with DMO approximates the result of migration before stack. DMO is generally based on the assumption that the formation velocity is constant, although approximate generalizations of DMO in the presence of depth-variable velocities have been proposed as well. All these efforts put into the development of the DMO algorithm are based on the concept of 'time-domain technology'. We could, however, start with the concept of 'depth technology' (compare e.g. time migration versus depth migration). In this paper a depth-oriented approach to DMO, which we call 'common-reflection-point stacking', is presented. In this approach, the DMO operator design is based on a macro-model of the subsurface, in which ray tracing is performed. Lateral as well as vertical velocity variations are therefore allowed. To obtain an exact DMO operator for the inhomogeneous media, offset ray tracing for all offsets should be done. We will show that the multi-offset ray tracing can be approximated by efficient zero-offset ray tracing, in combination with a simple mathematical relation. The principles of CRP processing are presented by illustrative examples. In particular a detailed comparison with the conventional DMO technique is given. The CRP technique is also illustrated on real data.

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