

Depth imaging of seismic data from structurally complex areas in Canada

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Recent geophysical research has made widespread use of depth migration and velocity analysis in our efforts to improve seismic images. Exploration problems include the imaging of salt intrusions and faulted structures from offshore Newfoundland and the imaging of thrust faulted structures from the Alberta foothills, which are similar to structural features in Western Newfoundland. We show that migration methods such as reverse-time migration and Kirchhoff depth

migration can lead to significant improvements in our knowledge of geological formations. Two characteristics of migration which make a substantial difference in our results include "prestack migration from topography" and the use of "iterative interactive image interpretation". The definition of an accurate seismic velocity model for complex geological formations is the key to obtaining useful seismic depth images.