

### **Modelling and migration of Hibernia seismic data**

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Seismic migration is a valuable processing tool in the accurate imaging of complex subsurface features. Reverse-time depth migration offers particular advantages due to its generality and lack of dip limitations. A successful migration is especially necessary in complex geological areas such as the Hibernia oil field, where the accurate location of complex faults and sedimentary boundaries is of particular importance. This paper compares the results from various 2-D and 3-D

migrations for both model data and seismic data from the Hibernia field. In this comparison, we use the Stolt and Gazdag algorithms in 2-D and the reverse-time algorithm in both 2-D and 3-D. We optimize reverse-time migrations by least-squares inversion of layer depths to formation tops. This use of migration and inversion also allows for velocity sensitivity analysis.