

The Wedge Model Revisited

Joanna K. Cooper and Don C. Lawton
University of Calgary, Calgary, AB, Canada
jkcooper@ucalgary.ca

Abstract/Excerpt

Several physical seismic models of simple wedges were built to assess amplitude and tuning effects commonly associated with the classic 'Widess' wedge. Rather than producing simple tuning at $\lambda/4$, 2D zero-offset seismic surveys over the physical models showed a surprising number of high amplitude dipping events corresponding to pure-mode, mixed-mode and doubly-converted wedge multiples. To examine these reflection events, finite-difference exploding reflector models using a numerical version of the same wedge velocity models were also produced. Migration of the physical model data was accomplished using 2D poststack Kirchhoff depth migration although the presence of these multiples and multi-mode events presented complications for migration. The study suggests that pure-mode and converted-wave multiples can be significant recorded events in the presence of high velocity rocks with a wedge-like geometry.