

Highly-optimized TWSM algorithm for diffraction modeling below salt overhangs

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1. Comparison of seismic modeling methods

<u>Approach</u>	<i>Computational speed</i>	<i>Complex models</i>	<i>Separate wave modes</i>	<i>Seismic frequencies</i>	<i>Modelling of layer matrices</i>
TWSM <i>(analytical 3D method)</i>	Model depended	+	+	+	+
<i>Analytical 1D methods (Reflectivity modelling)</i>	Fast	-	+	+	-
<i>Approximate analytical 3D methods (Ray method)</i>	Very fast	-	+	-	-
<i>Numerical methods (Finite differences)</i>	Slow	+	-	+	-

Carcione J.M., Herman G.C. and ten Kroode A.P.E. Seismic modeling. Geophysics, 2002, 67, 4, 1304-1325.

2. Poster plan

- 1) Basic idea of Tip-wave superposition method (TWSM);
- 2) Realization of TWSM for GPU-cluster;
- 3) Numerical tests for salt overhangs with complex concave-convex boundaries of three geometrical shapes;
- 4) Comparison TWSM with laboratory data.