Figure 6: (a) Remigration trajectories collapsing in the depth point where depth migration should be located if the correct velocity model had been used. (b) The average velocity model from interpolation of velocity values at each diffraction point.

The practical applicability of the method in more complex models and under more realistic conditions, e.g., regarding to coherent and incoherent noise, requires further research. It is expected that for complex models, iterative application will be necessary to achieve convergence at an acceptable velocity model.

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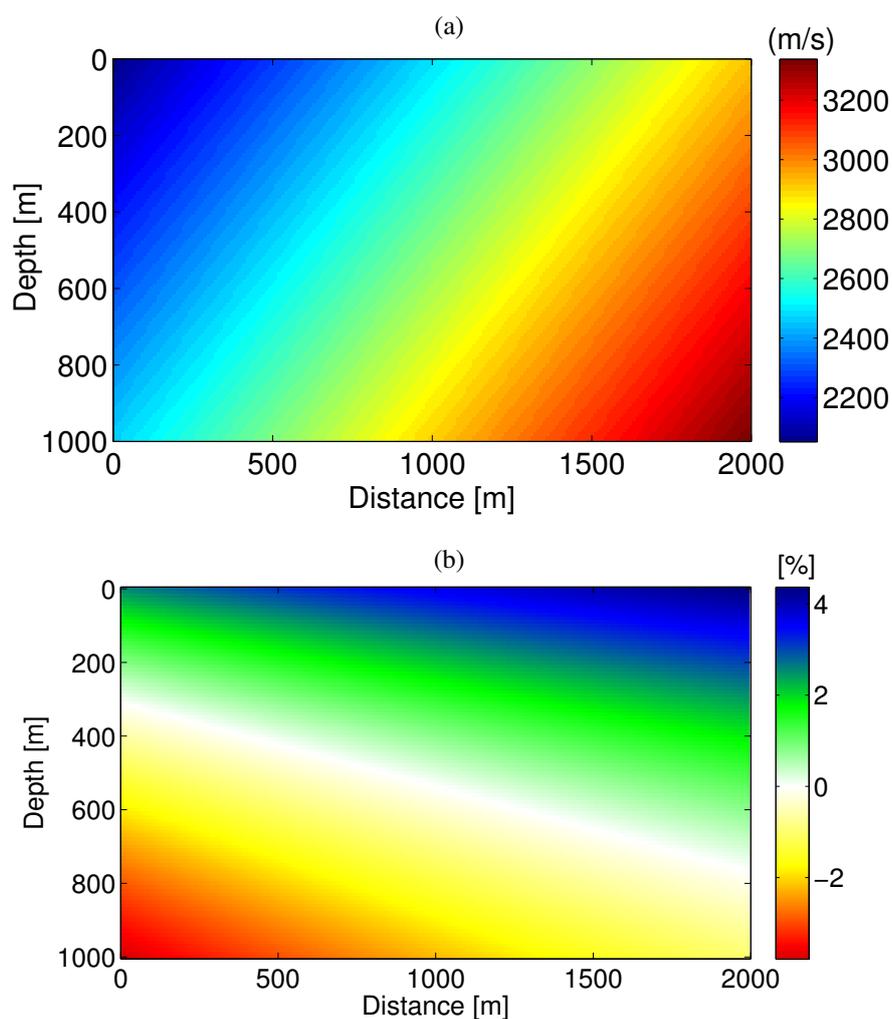
Figure 7: (a) Velocity model obtained by equation (22). (b) Relative velocity error using average slowness.

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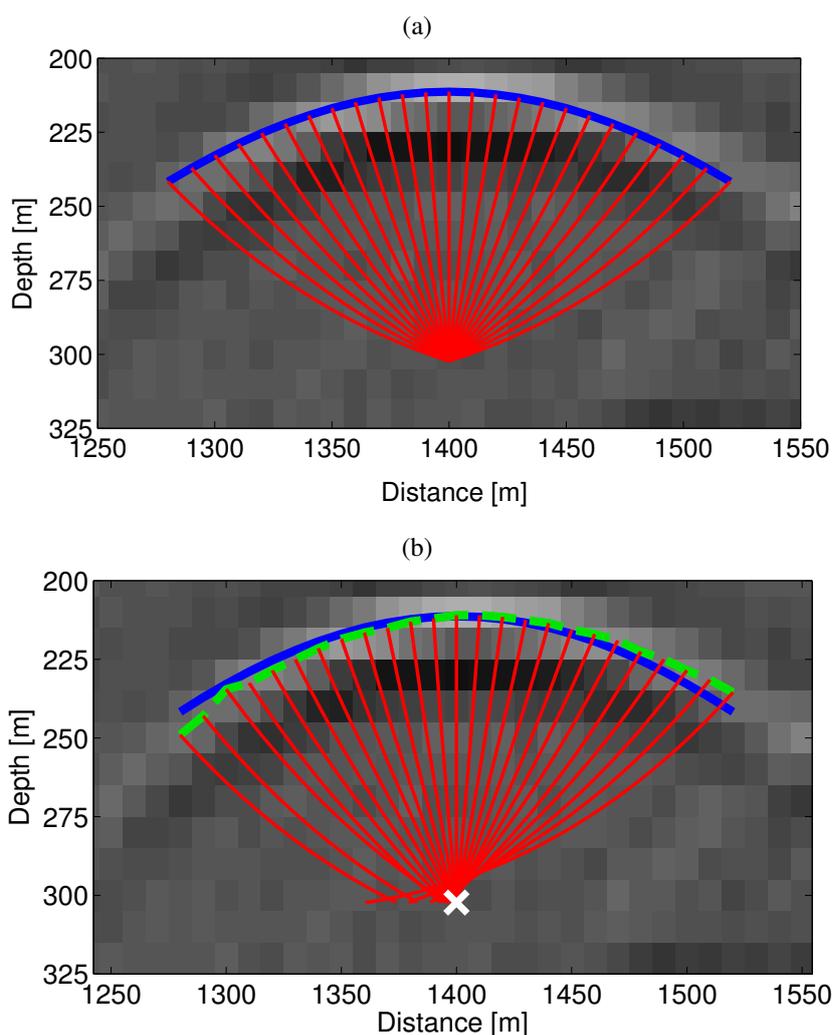
(a)

(b)

Figure 8: (a) The remigration trajectories (red lines) emanating from an exact hyperbola (blue line) approximating the diffraction event are circular arcs that focus at a single point. (b) The remigration trajectories (red lines) emanating from a picked diffraction event (dashed green line) do not focus at a single point, indicating lateral velocity variations. Also shown is the approximate hyperbola (blue line) and the corresponding focus point (white cross).

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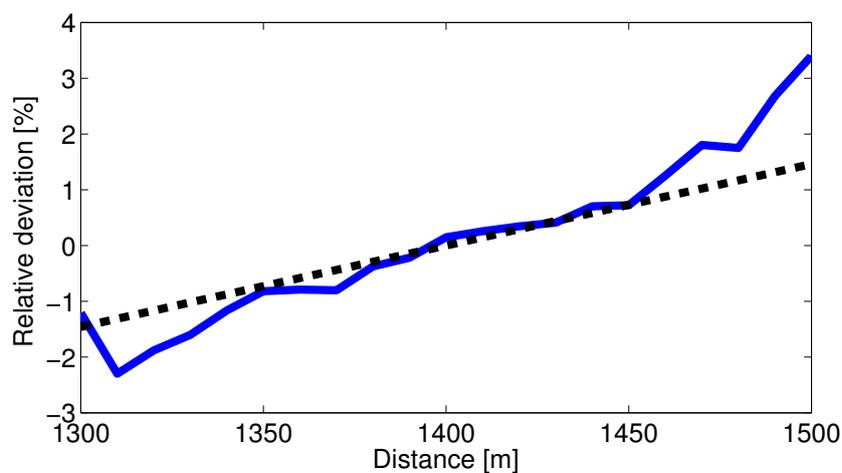
Figure 9: Relative deviation between the velocities estimated using remigration trajectories emanating from the picked event and the best-fitting hyperbola.
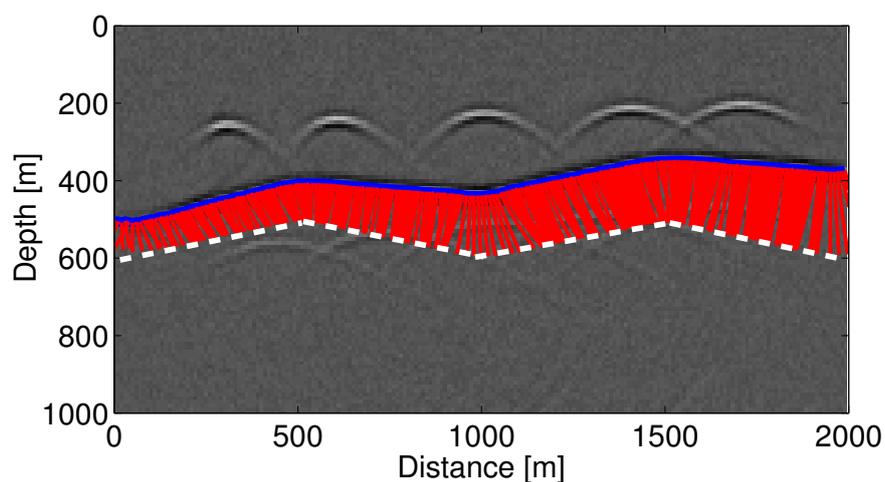

Figure 10: The remigration trajectories (red lines) for the dipping reflector parts (blue line) end at the true reflector position (dotted white line).

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