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A simplified staggered-grid finite-difference scheme and its linear solution for the first-order acoustic wave-equation modeling

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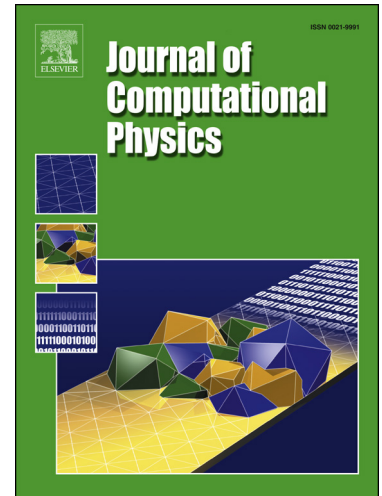
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Highlights

- The simplified first-order staggered-grid FD scheme sacrifice nothing and gain computational speedup.
- The simplified first-order staggered-grid FD scheme is equivalent to the second-order normal-grid FD scheme.
- The accuracy of the particle velocity components v_x and v_z are really good because the staggered-grid FD coefficients in equation (10) are determined with equations (11) and (12) in consideration.
- This research is reproducible.

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