



Target-Oriented Full-Waveform Inversion

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Full-waveform inversion (FWI) is computationally expensive and many methods have been developed to reduce its cost. In this work, we propose to reduce the computational cost of conventional FWI by applying reverse-time datuming to the original data and then using FWI to reconstruct subsurface velocity structures only in a small target area. The proposed method is called target-oriented FWI and is tested on synthetic data. Numerical results show that target-oriented FWI is more computationally efficient than conventional FWI and that the velocity model in a target zone is successfully reconstructed. However, target-oriented FWI has a slower convergence rate than conventional FWI. This may be due to artifacts or amplitude errors in the redatumed data. Further study and experiment is necessary to solve this problem.