



## **Analysis of effects of discontinuities on the gradient direction in waveform inversion using the excitation amplitude method**

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The excitation amplitude method is an approximation scheme that reduces memory usage of crosscorrelation process in reverse time migration and full waveform inversion. Depending on the velocity model, the gradient direction contains discontinuities due to the discontinuous excitation time. We analyzed the effects of the discontinuities of the gradient direction of full waveform inversion on the inversion results. Numerical examples show that the stacking of gradient directions from multiple shot simulations and the velocity update reduce the effects of discontinuities on the inversion results.