

# CORRECTING ANISOTROPIC SEISMIC DATA WITH DEEP LEARNING FOR FULL WAVEFORM INVERSION

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## **ABSTRACT**

Full waveform inversion is now routinely used for high resolution velocity model building. Often, an isotropic acoustic approximation of the wave equation is used to simplify the computational challenges of anisotropic wave propagation. However, neglecting anisotropic effects can imprint errors in velocity model updates. To circumvent this problem, we propose to use a deep convolutional network to transform anisotropic data with a vertical axis of symmetry (VTI) into an equivalent isotropic dataset. In a synthetic 2D example, we show that the network can learn a data driven mapping that successfully mitigates some anisotropic full waveform inversion artifacts. The primary challenge of this approach is generating a representative dataset for training. We plan to explore these limitations further in future work.