

## **Multi-parameter full waveform inversion of borehole seismic data**

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Full waveform inversion (FWI) applied to seismic data is a powerful method for the estimation of subsurface elastic properties. FWI minimizes the misfit between observed and computed data while utilizing all types of wave events and, therefore, provides more accurate result compared to the conventional processing methods. We discuss practical aspects of application of FWI to the borehole seismic data and show several real data examples.

One of the challenges is an ambiguity of the inversion results due to the lower sensitivity of the seismic data to the distribution of certain elastic parameters. Identification of those parameters is important for better construction of the inversion algorithm and interpretation of the results. We present a sensitivity study carried out for linearized problem that reveals limitations of the multiparameter resolution.