Fast and robust microseismic event detection using volume imaging methods

Abstract

The paper presents a new methodology for the automated detection of microseismic events. This method is based on the use of 3D seismic data and a combination of volume imaging and iterative optimization techniques. The method is shown to be effective in identifying microseismic events in a variety of geological settings.

RESULTS: Synthetic data

The results of the synthetic data experiments show that the proposed method is able to accurately locate microseismic events. The method is shown to be robust to various types of noise and to be able to handle events with different characteristics.

RESULTS: Field data

The results of the field data experiments show that the proposed method is able to detect microseismic events in a real-world setting. The method is shown to be able to handle the complexities of real-world data and to provide accurate results.

Discussion and conclusions

The proposed method offers a new and effective approach to microseismic event detection. It is shown to be robust and to provide accurate results in a variety of settings. The method has the potential to be widely applicable and to be a valuable tool for the study of microseismic events.

References