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Applications of time - frequency decomposition by matching pursuit method on seismic data

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Abstract

Spectral decomposition has many applications in processing and interpretation of seismic data. In present, there are several methods for spectral decomposition. Each of spectral decomposition methods is useful for a special application, but it has been proved that matching pursuit decomposition (MPD) has more efficiency in various cases. In the present work, the performance of matching pursuit decomposition was compared with STFT and CWT methods in improving the resolution of thin beds and studying the tuning effect and also it has been shown that the MPD method can be used in hydrocarbon reservoirs as direct hydrocarbon detector and also as recognizer of low-frequency shadows caused by gas bearing zones.