

基于MP方法的地震信号快速分解算法

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摘要 Matching Pursuits算法是信号分解的一种具体实现方法. 针对地震信号在过完备库中进行分解时原子字典索引和计算量均非常庞大的问题, 提出了一种原子字典索引的快速生成算法. 首先根据地震信号的频带特征缩小字典索引的频率范围; 然后同样依据地震信号的波形特征缩小字典索引的尺度范围. 从而利用对地震信号的先验知识, 收缩原子字典索引的扫描范围, 实现基于Matching Pursuits算法的地震信号的快速分解.

关键词 [字典, 原子, 匹配追踪, 快速算法](#)

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Seismic signal' s decomposition based on matching pursuits method

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Abstract Matching Pursuits algorithm is a specific implementing method for signal decomposition. It' s a problem to decompose or reconstruct seismic signal upon over-completed dictionary since the index of the dictionary and the amount of the computation are very huge. So a fast algorithm is proposed in which the dictionary index is shortened in frequency scope and in scale scope according to the frequency characteristic and the waveform characteristic of the seismic signal. Thus, by means of using known knowledge about the seismic signal, shrinkage of scan scope of atom dictionary index is achieved to accomplish the seismic signal' s fast decomposition based on Matching Pursuits algorithm.

Key words [P315](#)

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