

论文

加权抛物Radon变换叠前地震数据重建

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摘要 基于部分动校正(NMO)后反射同相轴在CMP道集上的抛物线走时近似, 给出了加权抛物Radon变换叠前地震数据重建方法(WPRT). WPRT通过在迭代过程中引入变化着的权系数, 拓展和改进了传统抛物Radon变换方法, 使其可同时完成不规则采样的规则化和空道及近偏移距道重建, 且有更高的计算效率. 文中给出了应用WPRT进行近偏移距和中偏移距的空地震道重建及数据规则化的算法实现. 理论模型和实际地震资料的地震数据重建结果显示了本文算法的优点.

关键词 [加权抛物Radon变换\(WPRT\)](#) [地震数据重建](#) [数据规则化](#)

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Prestack seismic data reconstruction using weighted parabolic Radon transform

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Abstract Weighted Parabolic Radon Transform (WPRT) method for prestack seismic data reconstruction is proposed based on the parabolic assumption of seismic events in CMP gather after the partial NMO. Owing to introducing varying weight coefficients in WPRT, the proposed WPRT can simultaneously regularize and reconstruct the irregular seismic data with a lot of missing traces, which means a very important improvement to the conventional parabolic Radon transform. The implementation of the proposed algorithm is presented for the complex irregular seismic data and the data with missing traces of near and medium offsets. The results of the theoretical model and the field data demonstrate the effectiveness of the method.

Key words [Weighted Parabolic Radon Transform \(WPRT\)](#) ;[Seismic data reconstruction](#);[Data regulation](#)

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