

论文

频谱代换无拉伸动校正方法研究

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摘要 动校正拉伸是地震资料处理的一个基本问题, 解决拉伸问题的处理方法是切除. 现代地震数据大多为长排列采集, 动校正拉伸更为严重. 依据褶积模型和Fourier变换的基本性质, 本文给出频谱代换无拉伸动校正方法. 算法实现就是将CMP道集变换到频率域, 取参考道的相位谱替换其它偏移距道的相位, 同时保持其振幅谱不变, 再做Fourier反变换就得到动校正后的地震剖面. 通过其实现过程可知该方法不需要地下介质的速度信息, 算法可完全自动实现, 且具有较高的计算效率. 频谱代换无拉伸动校正可适用于任何偏移距的地震资料, 而且还可有效保持地震资料的AVO效应. 理论模拟数据及其叠加结果显示频谱代换法的有效性和实用性, 同时该方法具有较强的抗随机噪音能力.

关键词 [动校正](#) [频谱代换](#) [无拉伸](#) [随机噪音](#) [叠加](#)

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Spectral borrowing stretch-free normal moveout correction

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Abstract Normal moveout (NMO) stretch is a fundamental problem in seismic data processing, muting is one of attempts to solve NMO stretch. The long offset is adopted in modern seismic acquisition, therefore NMO stretch is more severe in seismic processing. The spectral borrowing stretch-free NMO approach is proposed in this paper based on convolutional model and the properties of Fourier transform. Transform the CMP to temporal frequency domain, take the minimum-offset-trace as reference trace, and borrows that phase spectrum to substitute the original traces in CMP gather. The proposed technique need no stack velocity data of formation under investigation, the given method can finish NMO processing automatically, and has high efficiency in calculation. The spectral borrowing stretch-free approach can keep the AVO effect unaffected during the course of NMO processing, and also process whatever long offset seismic data easily. Theoretical model seismic data NMO and the stack result demonstrate that the proposed technique is validity and applicable, and the spectral borrowing stretch-free NMO approach can process noisy seismic data.

Key words [Normal moveout \(NMO\)](#); [spectral borrowing](#); [stretch-free](#); [random noise](#); [stack](#)

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