

无拉伸动校正技术在近海工程地震勘探中的应用

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摘要 动校正是地震资料处理的关键内容之一, 直接关系到地震资料处理结果的精度. 在浅层和大偏移距情况下, 常规动校正使波形发生拉伸畸变, 波形拉长、频带向低频方向移动, 进而影响叠加效果. 通常地震资料处理中大都采用切除的方法克服动校正拉伸畸变的影响, 这对目的层较深时是可取的. 以工程地质调查为目的的海洋地震勘探旨在了解海底之下较浅地层深度范围内的地质信息, 一般勘探区水深较浅, 数据叠加道数较少, 如果仍然采取切除处理, 势必严重影响资料的分辨率和准确度. 本文阐述了一种无拉伸动校正方法, 能较好地解决动校正后的波形畸变问题, 理论模型和实际资料的处理结果表明该方法在近海浅层工程地震勘探中是行之有效的, 有助于提高速度分析的精度和地震资料的分辨率.

关键词 [无拉伸, 动校正, 近海, 浅层, 工程地震](#)

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The Application of Non-Stretch NMO on offshore engineering seismic exploration

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Abstract In seismic data processing, normal-moveout correction is a important step for improving the accuracy of result. Conventional NMO correction generates a stretch of waveform and decreases the frequency; this is particularly harmful for shallow reflectors and large offsets. In general, the undesirable stretch effects of conventional NMO correction can be muted after a given offset, that is acceptable when the depth of strata is larger compared with offsets. However, in offshore engineering seismic prospecting, the shallow part of the sea floor is the main study area, and the depth of sea water is usually very shallow, and the number of total trace of a shot is small. In this condition, the resolution and signal-to-noise rate will be decreased if the stretch is muted. In this paper, a improved non-stretch NMO method is presented here to avoid the distortion of waveform. A synthetic model and the real offshore shallow engineering seismic dataset is applied to test the validity of non-stretch NMO, and all the models illustrate a significant progress.

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