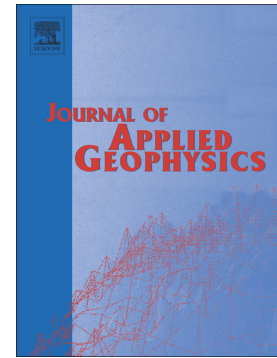


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## A Mean-Based Filter to Remove Power Line Harmonic Noise from Seismic Reflection Data

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### Abstract

Power line harmonic noise generated by power lines during the seismic data acquisition in land and marine seismic surveys generally appears as a single frequency with 50/60Hz (or multiples of these frequencies) and contaminates seismic data leading to complicate the identification of fine details in the data. Commonly applied method during seismic data processing to remove the harmonic noise is classical notch filter (or very narrow band-stop filter), however, it also attenuates all recorded data around the notch frequencies and results in a complete loss of available information which corresponds to fine details in the seismic data. In this study, we introduce an application of the algorithm of iterative trimmed and truncated mean filter method (ITTM) to remove the harmonic noise from seismic data, and here, we name the method as local ITTM (LITTM) since we applied it to the seismic data locally in spectral domain. In this method, an optimal value is iteratively searched depending on a threshold value by trimming and truncating process for the spectral amplitude samples within

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