

عنوان مقاله:

Designing Passive Filters for Harmonic Reduction in a Noisy System Based on Wavelet Transform Compared to Traditional Method

محل انتشار:

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خلاصه مقاله:

In this paper, among different methods of signal processing, wavelet transform is chosen due to its advantages over other methods. To show wavelet transform capabilities, first an HVDC system which has noise on its output current is simulated. In the first step noise is removed by applying discrete wavelet transform. In the next steps, harmonic problem is resolved through appropriate passive filters. In this paper, we suppose that not only low order harmonics exist in the output current, but also high order ones. The results indicate that we can obtain a good passive filter design for harmonic reduction by decomposing a signal into its harmonic components via applying discrete wavelet transform. For more confirmation of this method, the scalogram of wavelet coefficients is presented. At the end, to compare this method with traditional one, the figures of traditional method for passive filter designing is presented

کلمات کلیدی:

multi-resolution decomposition; wavelet transform; passive filter for harmonic reduction; harmonic detection; wavelet-based threshold de-noising method

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