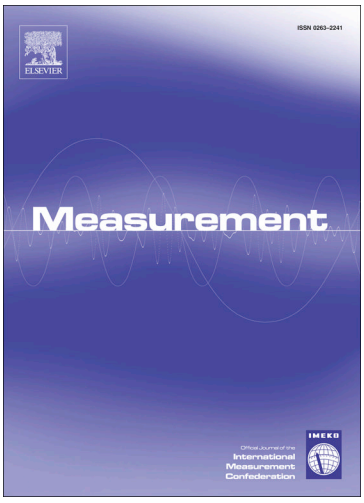

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Abstract:

This paper proposes a new method to distinguish power quality events based on the Histogram of oriented gradients (HOG) and Support Vector Machine (SVM). We examine energy quality events such as sag, interruptions, swell, harmonic, transient, notch and flicker. The proposed method calculates numerous power quality disturbances such as flickering with harmonics, intrusion with harmonics, and sagging with harmonics. It has less processing time than the previous methods due to multiple events occurring at same time. Numerical experiments performed on a real database of power quality disturbances show that there is less calculation in the proposal in comparison with the wavelet change, S-transform and Hilbert change. Recognition with the assistance of HOG gives better and precise outcome in time area with faster reaction.

Keywords: Power Quality (PQ); Event detection; Histogram of oriented gradients (HOG); Support vector machine (SVM).