

عنوان مقاله:

Classification of Wide Variety range of Power Quality Disturbances Based on Two Dimensional Wavelet Transformation

محل انتشار:

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خلاصه مقاله:

Identification of voltage and current disturbances is an important task in power system monitoring and protection. In this paper, a new algorithm for online characterization of a wide range of voltage disturbances based on two dimensional wavelet transformation is proposed. This algorithm is more complicated than algorithms based on one dimensional wavelet transformation, but it's more precise and is useful for steady state disturbances, transients with slow variations and transients with rapid changes. After each five cycles, a matrix is formed based on the last fourteen cycles, in a way that the voltage signal in one cycle forms one row of the matrix. Then, the resulted image is decomposed into approximation and details by two dimensional wavelet transformation. Details contain the useful information. By processing the details, special patterns associated with each type of disturbance can be detected. A new algorithm is proposed for extracting suitable features of disturbances based on the details. At the end, the algorithm is implemented using the nearest neighbor classifier system.

کلمات کلیدی:

Power quality, Event detection and classification, Two dimensional wavelet transformation, Pattern classification, Feature, Classifier system

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