POWER SYSTEM QUALITY ASSESSMENT

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ABSTRACT

The term *quality* is sometimes used as synonymous with supply reliability to indicate the existence of an adequate and secure power supply. A broader definition has described service quality, encompassing the three aspects of reliability of supply, quality of power offered and provision of information. Judging by the content of the innumerable contributions to the topic in recent years, power quality is generally used to express the quality of voltage. With the expansion of power electronic control in the transmission and utilization of electrical energy, there is increasing acceptability of the latter interpretation. In this paper, a step to approach, detect, localize, and investigate the feasibility of classifying various types of power quality disturbances are presented. The approaches are based on wavelet transform analysis, particularly and Symlet wavelet transform. The key idea underlying the approaches are to decompose a given disturbance signal (original signal) into other signals which represents transforming a one-dimensional time series into two-dimensional time–magnitude space. The decomposition is performed using a Symlet wavelet transform techniques. This assessment is based on characterizing the uniqueness of the squared wavelet transform coefficients for each power quality disturbance.

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