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FAULT DIAGNOSIS OF POWER QUALITY DISTURBANCES USING INTELLIGENT TECHNIQUES

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Abstract

This paper reviews the use of wavelet transform approach in processing power quality data. The strengths, limitations, and challenges in employing the methods are discussed with consideration of the needs and expectations when analyzing power quality disturbances. The discrete wavelet transform has been used to detect and analyze power quality disturbances. A power system network has been simulated by Electromagnetic Transients Program. Voltage waveforms at strategic points have been obtained for analysis, which includes different power quality disturbances. Then wavelet has been chosen to perform feature extraction. The outputs of the feature extraction are the wavelet coefficients representing the power quality disturbance signal. A new approach of combining wavelet transform and rank correlation is introduced as an alternative method for identifying capacitor-switching transients.

Keywords : Power quality, detection of disturbance, wavelet transform, multi resolution signal decomposition, transients.

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