

电力系统

基于复小波变换的暂态电能质量扰动检测与分类

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摘要:

根据Daubechies实小波生成相应的复小波,在此基础上,利用复小波变换的相位信息分析几种常见的短时电能质量扰动。针对由复小波变换得到的相位图特征不明显的问题,提出了改进相位图,能更清楚地观察到扰动时的相位变化,便于更精确地对扰动进行定位,同时根据改进后的相位图所表现出来的特征可以简单地对各种扰动进行分类。仿真分析表明,利用改进后的相位图可以简单有效地实现对常见的短时扰动的检测与分类。

关键词:

Detection and Classification of Transient Power Quality Disturbances Based on Complex Wavelet Transform

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Abstract:

A method that derives complex wavelet corresponding with Daubechies real wavelet is proposed. On this basis, by use of phase information of complex wavelet transform several types of short duration power quality disturbances (SDPQD) are analyzed. To remedy the defect that the characteristic of the phase diagram obtained from complex wavelet transform is not obvious, the improved phase diagram, by which the phase variation can be observed more clearly, is put forward, thus the disturbances can be located more accurately; meanwhile, according to the characteristics exhibited by the improved phase diagram, various disturbances can be easily classified. Simulation results show that using the improved phase diagram several types of SDPQD can be detected and classified easily and effectively.

Keywords:

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