

电力系统

基于峰值波动的间谐波—闪变曲线的制定

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摘要:

间谐波源也是引起电压闪变效应的闪变源, 并且由此原因产生的电压闪变效应已逐步占据主导地位, 需要制定合理的间谐波限制标准来抑制闪变的发生。而国际上广泛认可的IEC闪变仪是基于电压调幅波模型, 不适于计算和评估由间谐波造成的电压波动和闪变问题。本文分析了IEC闪变仪在计算间谐波闪变时引起误差的原因, 提出采用同步解调取代平方解调, 并扩展带通滤波器的频带范围, 在具体应用中, 讨论了载波信号的获取以及Butterworth低通滤波器阶数的选取问题, 在Matlab/Simulink中建立了新的基于同步解调的闪变仪。该闪变仪能够准确计算间谐波引起的电压波动和闪变, 从而能够根据计算结果制定正确的基于峰值波动的间谐波——闪变曲线。

关键词:

Establishing Interharmonics-Flicker Curve Based on Peak Fluctuations

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Abstract:

The recent researches showed that the devices that produced the interharmonics were also the major sources of light flicker, and this kind of light flicker has occupied a leading position gradually, so we need to establish the limitation standard of interharmonics to suppress light flicker. IEC flickermeter was the widely recognized device to calculate and evaluate the light flicker caused by voltage amplitude modulation, however, it was unfit to analyze the light flicker caused by interharmonics. In this paper, the reasons why errors may occur are analyzed and the IEC flickermeter is developed from two aspects, the square demodulation is replaced by synchronous demodulation and the band limitation of bandpass filter is expanded, in specific applications, the obtainment of carrier signal and the order choice of Butterworth lowpass filter are discussed. The new synchronous demodulation flickermeter is built in Matlab/Simulink, the simulation results shows it can calculate the light flicker caused by interharmonics components accurately, thus interharmonics-flicker curve of peak fluctuations can also established accurately from the calculation results.

Keywords:

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