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ASYNCHRONOUS MOTOR DRIVE INTERHARMONICS CALCULATION BASED ON GENERALIZED FOURIER SERIES OF SEVERAL VARIABLES

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Abstract

In the paper impact of low-frequency interharmonics on AC devices, in particular asynchronous motors is described. It is shown that because of the indefinite time interval of measurement, interharmonics detection and calculation is complicated. To improve the method of interharmonics calculating, we propose to use a generalized Fourier series of several variables and outline the basic theoretical principles for its use. The example of an adjustable electric drive of an asynchronous motor based on developed theoretical method shows the influence of interharmonics on the motor magnetization. A model of asynchronous electric drive in MatLab Simulink® environment confirms that the error of calculation of interharmonics based on the generalized Fourier series does not exceed 5%. References 10, figures 5.

Key words: interharmonics; asynchronous motor drive; generalized Fourier series of several variables.

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