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NUMERICALLY-FIELD ANALYSIS OF THE ADEQUACY OF THE DESIGN DATA OF THREE-PHASE INDUCTION MOTORS AND THE METHOD OF THEIR REFINEMENT ON THIS BASIS

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Abstract

The principles and results of the numerically-field determination of the electromagnetic and energy parameters of the designed three-phase induction motors for the purpose of their *verification analysis have presented. The analysis has realized with the magnetic field calculations in the FEMM software environment. Calculations have automated by the control program in the algorithmic language Lua. The data of a 15kW motor have used for the approbation of the method. The assessment of an adequacy of the motor designed parameters to its initial data has carried out on a mag-netizing current, design tension and power. Studies have shown the problems of a motor designing by the classical method, where electromagnetic calculations have based on the magnetic circuit method. It has proposed to introduce a system of numerically-field calculations of the induction motor parameters as an efficacious basis for their refined design.* References 17, figures 4, tables 2.

Key words: induction motor, design data, magnetic field, FEMM, numerically-field calculations, electromagnetic and energy parameters, verification analysis.

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