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STUDY OF STARTING REGIMES OF INDUCTION MOTORS USING EQUIVALENT PARAMETERS OF QUASI-3D FIELD MODEL

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Abstract

The efficiency and adequacy of mathematical models of induction motors for dynamic operating conditions are improved due to used dependences for varied electromagnetic parameters. The dependences are based on the results of field analysis. The mathematical models with single-dimensional approximation of parameters are developed. This simplifies the field analysis

and formation of approximating dependences with continuous derivatives. The relationship between given functional dependences of electromagnetic parameters and the adequacy of mathematical models for static and dynamic conditions is studied. The expressions and method are proposed to determine the correction coefficients that improve the adequacy of the mathematical models for dynamic conditions with single-dimensional approximation of parameters. References 8, figures 3.

Key words: induction motors, parameters of equivalent circuit, main flux reactance, field model, start.

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