

The method of equivalence of circuits with mutual induction and its application to obtain replacement circuits of rotating electric machines.

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A method for replacing a circuit containing branches with mutual induction equivalent without such branches is presented. The method does not require calculation of the elements of the nodal conductivity matrix and allows determining the current distribution in an equivalent circuit using the known currents of the original circuit. This method is used to obtain replacement circuits of electric circuits of rotating electric machines. The results of calculations of transient processes confirm the reliability of the proposed equivalence method.

Key words: mutual induction, equivalence, replacement scheme, mathematical model, electric machine, synchronous machine, asynchronous machine.