CALCULATION OF MAGNETIC FIELD IN GENERATORS WITH CLOSED SLOTS

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Analysis of electromechanical processes taking place in synchronous machines, reduced to the solution of Maxwell's equations and related equations of motion that can be implemented finite-difference method or reduction of Maxwell's equations to integral equations followed by their numerical solution. The latter approach is the possibility of reducing the problem to the calculation of the sources of the magnetic field on the border of ferromagnetic bodies that significantly reduces the search unknowns.

The essence of the concept of secondary sources is as follows: Calculation field in space, which is filled with heterogeneous environments can be kept to a calculation field in a homogeneous space created as primary sources (eg currents winding magnetization) and secondary sources, which are understood density false volume and surface magnetic charges, currents or magnetic moments. Depending on that right should be calculated, using the sources of any type. Thus the density distribution of secondary sources must be such as to ensure that the conditions for vectors or fields, or scalar potential or vector potential at the interface, satisfying the integral equation.

Each method of density secondary sources transforms the concept of secondary sources in an appropriate method of calculation of the field.

The purpose of research - to develop a mathematical model to calculate the magnetic field generator with closed grooves.

Results. The mathematical model to calculate the characteristics of the magnetic field of permanent magnet synchronous generator by a construction value problem for Maxwell's equations to the equivalent integral equation is relatively simple magnetic layer deterioration charges followed the interpretation or method of successive approximations or reduce it to a system of linear algebraic equations.