The paper describes preparing and carrying out calculations of basic parameters of an induction motor using the FEM analysis. Computation of losses, currents induced in windings and torques were made on the basis of calculated values of magnetic induction in squirrel cage motors with 2 and 4 poles. Results of calculations obtained from the FEM analysis were compared with results of design calculations on the basis of a circuital schematic diagram which were then compared with results of laboratory measurements for these machines.

Keywords: induction motors, calculation of motor losses, electrotechnical metal sheets, analysis by the method of finite elements