SUMMARY

Diploma contains: 121 pages, 39 illustrations, 22 tables, 3 appendixs, 41 sources.

Object of study – the dynamic processes in the systems of the electric drive on the basis of synchronous motors with permanent magnets.

The subject of the study is the astatic system of vector control of the speed of a synchronous motor with permanent magnets.

The aim of the work is to synthesize systems of astatic speed regulation with the conditions for reducing the dynamic falloff of speed, time of its restoration and overregulation for the moment when loading the load. The aim is to design and to comparatively analyse the astatic speed control. For the purpose of analysis was made for the typical system with PI-regulator, restoring dynamic and static torques.

The state observers, which restore the moment of static resistance, and the inertia moment identifiers are developed and analyzed. The work of the vector control system with adaptation to the moment of static resistance and the moment of inertia of the drive are analyzed.

ELECTRIC DRIVE, ASTATIC SPEED CONTROL, TRANSIENTS, STATE OBSERVER, IDENTIFICATION, REGULATOR

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