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INFLUENCE OF PULSATIONS OF THE FLEXIBLE DC MOTOR ON THE MANAGEMENT PROCESS OF STARTING THE GAS TURBINE MOTOR HELICOPTER

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Abstract

The ripple analysis of the input current of the commutator of the brushless DC motor (BLDC) is performed and their influence on the gain and sensitivity of the control system is established. Methods are proposed for reducing the influence of pulsations on the dynamics of processes in a current loop. Discrete transfer functions of a closed current loop are obtained with and without consideration of the influence of counter-EMF motor, which allowed us to propose a method of stabilizing the rate of increase of the input current of the switch. The implementation of this method allows to increase the working life of the battery. The areas of subharmonic stability of the gas turbine engine launch system (GTE) of the helicopter with BLDC were established. References 8, figures 4, table 1.

Key words: brushless DC motor, ripple, discreteness, modified Z-transform, current loop, stability.

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