

**Research of synchronous generator's electric parameters under operating conditions close to the boundary of the oscillatory stability region.**

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An analytical model has been developed that allows reproducing of the dependences of synchronous generator's electric parameters under the conditions of undamped synchronous oscillations. The analysis of the behavior of the phase shift between the undamped oscillations of reactive power and voltage, the cause of which is the considered generator, is performed. A simulation model of the studied system in Matlab/Simulink has been developed and the correctness of reproducing the regularities of changing the studied parameters of the generator mode has been confirmed.

*Key words: synchronous generator, automatic voltage regulator, excitation system, oscillatory stability, monitoring system.*