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Features of modeling of synchronous direct and quadrature axis machines.

Existing synchronous direct axis excitation machines not always allow to fully solve the problems of stability and reliability in steady and transient modes of power supply systems. These machines are able to work only in small areas of reactive power consumption, that is associated with a violation of their stability. Much better technical characteristics has synchronous direct and quadrature axis excitation machines (SM DQE), especially in the conditions of reactive power consumption. SM DQE dynamic stability little depends on the mode of reactive power and significantly higher than the traditional synchronous generators, which in the modes of reactive power consumption demand significant reduction of the load. The existence on the SM DQE rotor of two field windings allows under certain control laws of excitation systems to ensure independent control of electromagnetic moment and stator voltage.

Key words: modeling synchronous and asynchronous machines, calculations of transient regimes, excitation control systems.

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