

Construction of virtual sensors of synchronous machine operating parameters considering the influence of transient processes.

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Some operating parameters of a synchronous machine are not available for direct measurement, or the creation of these meters is impractical. These parameters traditionally calculated using the steady state equations of synchronous machine with available for measurement parameters. However, using steady-state equations inevitably leads to an error in the calculation of operating parameters in transient process.

Expressions for calculating operational parameters considering the influence of transient processes were obtained, this calculation results, steady-state equations with a factual value were compared.

Keywords: virtual meters, rotor speed, field current, field voltage, mechanical power, speed-up power, automatic voltage regulator, turbine regulator system.