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of

Voltage Control of Self-Excited Induction Generator using Genetic Algorithm

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**Abstract:** Self-excited induction generators (SEIG) are found to be most suitable candidate for wind energy conversion application required at remote windy locations. Such generators are not able to maintain the terminal voltage with load as, a literature survey reveals, the voltage profile falls sharply with load. In this paper an attempt has been made to improve the voltage profile of a self-excited induction generator. A new methodology based upon Genetic Algorithm (GA) is proposed to compute the steady state performance of the model including core loss branch. Further efforts are made to control the terminal voltage under loaded conditions. Simulated results using proposed modeling have been compared with experimental results. A close agreement between the computed and experimental results confirms the validity of the approach adopted.

**Key Words:** Asynchronous generators, Genetic Algorithm, Self-excited induction generator, Voltage regulation

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