Abstract

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Wound Rotor Induction Generator Scalar Modeling and Control

In the field of electrical power generation, the wind energy is one of the important sources of renewable energy. The main problem with this type of energy is the variable nature of the wind speed. The wound rotor induction generator is used to handle this speed variations by adequate voltage injections in the rotor circuit to maintain the stator voltage and frequency constant irrespective to speed load variations. This book deals with the analysis, steady state modeling, and control of the wound rotor induction generator that can be used in wind energy applications. Moreover the linear control strategy used is analyzed in terms of all its operating conditions and output quality. The theory was validated via experimental setup to compare theoretical, simulation and practical results to evaluate the usefulness and effectiveness of the system.