

Abstract

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Vector Control of an Isolated Doubly Fed Induction Generator for Wind Energy Application

This paper investigates vector control strategies for an isolated Doubly Fed Induction Generator (DFIG) for wind energy application. The control algorithm allows generating constant frequency and voltage with variable mechanical speed. In order to allow the DFIG under isolation condition to track the optimal wind turbine speed for maximum energy capture from the wind the load was modelled as a controlled rectifier supplying an RL load. Simulation results for a 9 MW wind farm modelled as one aggregated DFIG machine are presented.