Abstract

This paper discusses the performance of various intelligent control schemes in extracting maximum wind power using doubly fed induction generator (DFIG). Intelligent control scheme such as fuzzy, neuro-fuzzy, and genetic algorithm based fuzzy controllers are applied for pitch control of DFIG based wind generation system. Wind generation system with eight numbers of identical 1.5 MW wind generators with reactive and real load is considered. Performance of various intelligent controllers is compared with PID controllers. Simulation results show that the performance of intelligent controllers better than PID controllers and in particular GA based fuzzy controller is better than other intelligent controllers.

Index Terms

Computer Science

Algorithms
Keywords
PI Controller  DFIG  Pitch Control  Fuzzy systems  Genetic Algorithm
Neuro-fuzzy