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Sliding Mode Control Based Bacterial Foraging Optimization of Wind Energy Conversion Systems

Sami KAHLA, Youcef Soufi, Moussa Sedraoui, BOUTAGHANE Amar, Boubakr BOUSSIALA, Thelaidjia Tawfik

Abstract : In recent years, the energy production by wind turbines has been increasing, because its production is environmentally friendly. In this paper, Bacterial Foraging Optimization (BFO) is proposed to generate a Sliding Mode Controller. The Sliding Mode Control (SMC) is proposed to control a squirrel-cage induction generator (SCIG) in order to maximize power captured by wind energy conversion system applied to the welding system. Simulation studies are made with Matlab / Simulink to verify the effectiveness of the purposed method.

Keywords : Squirrel Cage Induction Generator (SCIG), Wind Energy Conversion System (WECS), Sliding Mode Control (SMC), Bacterial Foraging Optimization (BFO), Welding System