

Sliding Mode Control of the Power of Doubly Fed Induction Generator for Variable Speed Wind Energy Conversion System

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Abstract : This research paper aims to reduce the chattering phenomenon due to control by sliding mode control applied on a wind energy conversion system based on the doubly fed induction generator (DFIG). Our goal is to offset the effect of parametric uncertainties and come as close as possible to the dynamic response solicited by the control law in the ideal case and therefore force the active and reactive power generated by the DFIG to accurately follow the reference values which are provided to it. The simulation results using Matlab / Simulink demonstrate the efficiency and performance of the proposed technique while maintaining the simplicity of control by first order sliding mode.

Keywords : correction of the equivalent command, DFIG, induction machine, sliding mode controller

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