An Adaptive Sliding Mode Controller Design for DFIG based Wind Turbine System on LabVIEW

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***Abstract*—** In this paper, adaptive sliding mode control (ASMC) for doubly fed induction generator (DFIG) is proposed. The detailed dynamic model of DFIG is presented in d-q synchronous reference frame. The active and reactive power generated by the DFIG is controlled on the system. Robustness of the controller is improved by using ASMC in order to achieve better performance. Moreover, a simulation model of Wind Energy Conversion System (WECS) is developed by using LabVIEW software. The results of simulation for step change and random turbulent of wind speed are given to show performance of the controller.

Keywords*—Doubly fed induction generator, adaptive sliding mode control, LabVIEW, wind power generation*