Wind Energy Conversion Systems with dSPACE

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Abstract

This document is reviewing low power low cost wind energy conversion systems focused on inverter control implemented with dSPACE development board. Due to the operating characteristic of wind turbines, analyzing the functionality is necessary, as this ensures understanding of the system and also generates methods for extracting maximum power. As this paper presents simulation and experimental results of inverter output, two types of loads were used: passive load(resistor) and active load(grid). The dSPACE development board is the control unit of the inverter through feedback loops, PLL loops, PI controllers and Park and Clarke transformations.

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