



Control of grid connected PMSG-based wind turbine system with back-to-back converter topology using Matlab and multicore computer.

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Abstract:

This paper presents modeling and control strategy for the grid connected wind turbine system based on Permanent Magnet Synchronous Generator (PMSG). The considered system is based on back-to-back converter topology. The Grid Side Converter (GSC) achieves the DC bus voltage control and a unit power factor. The Machine Side Converter (MSC) ensures the PMSG speed control. The proposed grid connected wind system is developed under MATLAB /Simulink environment. However, the simulation takes several minutes using computer and Matlab. Multicore is an intuitive and simple way to speed up the computing for SIFT algorithm. In this paper, we try to have a view for using the Matlab parallel toolbox to accelerate the SIFT algorithm. The results show that the parallel versions of former sequential algorithm with simple modifications achieve the speedup up to 6.6 times. Furthermore, they show the feasibility of the proposed topology and performance of its control strategies

Biography:

Fekkak Bouazza, Power Electronics and Industrial Systems Laboratory, Department of Electrical Engineering, University of Sciences and Technology Houari Boumediene, Algeria has her expertise in evaluation and passion in improving the health and wellbeing. Her open and contextual evaluation model based on responsive constructivists creates new pathways for improving healthcare. She has built this model after years of experience in research, evaluation, teaching and administration both in hospital and education institutions. The foundation is based on fourth generation evaluation (Guba & Lincoln, 1989) which is a methodology that utilizes the previous generations of evaluation: measurement, description and judgment. It allows for value-pluralism. This approach is responsive to all stakeholders and has a different way of focusing.



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