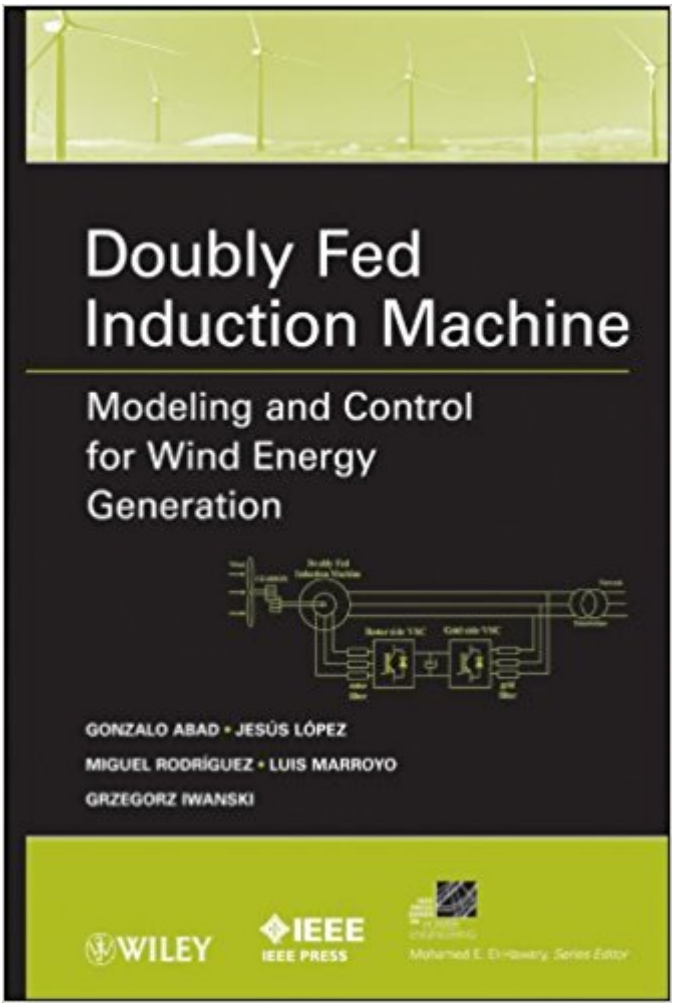
Doubly Fed Induction Machine: Modeling And Control For Wind Energy Generation (IEEE Press Series On Power Engineering)



Synopsis

This book will be focused on the modeling and control of the DFIM based wind turbines. In the first part of the book, the mathematical description of different basic dynamic models of the DFIM will be carried out. It will be accompanied by a detailed steady-state analysis of the machine. After that, a more sophisticated model of the machine that considers grid disturbances, such as voltage dips and unbalances will be also studied. The second part of the book surveys the most relevant control strategies used for the DFIM when it operates at the wind energy generation application. The control techniques studied, range from standard solutions used by wind turbine manufacturers, to the last developments oriented to improve the behavior of high power wind turbines, as well as control and hardware based solutions to address different faulty scenarios of the grid. In addition, the standalone DFIM generation system will be also analyzed.

Book Information

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Customer Reviews

My company purchased this book in order to use these control algorithms to do some initial analysis, assuming it would save time with implementing a simple control scheme. It took me over a

month to get the direct torque control algorithm working because it is full of typos, uses unlabeled axis, and is inconsistent about stator and rotor reference frames. While these can be found and fixed, and it certainly forced me to learn a lot more about machines, it is completely unacceptable for a reference book to have this many mistakes.