

Comparative Study of Wind Energy Conversion System Driven by Matrix Converter and AC/DC/AC Converter

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Abstract: In this work we presents comparative study of avariable speed wind energy conversion system (WECS) basedon the doubly fed induction generator (DFIG) driven by twoAC/DC/AC converters and WECS driven by matrix converter(MC). The whole system is presented in d-q-synchronousreference frame. For this purpose, the control of the activeand reactive power using PI controller is verified usingsoftware Matlab/Simulink, studies on a 1.5 MW DFIG windgeneration system. Simulation results obtained are presentedand analyzed. The results show the high performance andimprove the electric energy of the control strategy adopted inthe WECS based on a DFIG driven by a MC.

Keywords : wind systems, doubly fed induction generator, matrix converter, simulation