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# Study of a double fed induction generator usingmatrix converter: Case of wind energy conversionsystem

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**Abstract:** Due to the growing of the power electronics, especial attention has been given to the use ofnew generation of power converters, AC/AC matrix converter to which provide a directpower converter AC/AC, bi-directional power flow, almost sinusoidal input and outputwaveform. In this paper, we present the performance study of a variable-speed windturbine based on doubly fed induction generator fed by matrix converter using themaximum power point tracking method to extract the maximum power available. Thewhole system is presented in d-q-synchronous reference frame. The control scheme istested and the performances are evaluated by simulation results. The simulation resultsobtained under MatLab/Simulink show the effectiveness and validity of the consideredcontrol.

**Keywords :** Wind turbine, Control, Maximum power tracking, matrix converter, doubly fed induction generator