

## **Park's Vector Approach to Detect an Inter Turn Stator Fault in a Doubly Fed Induction Machine by a Neural Network**

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**Abstract :** An electrical machine failure that is not identified in an initial stage may become catastrophic and it may suffer severe damage. Thus, undetected machine faults may cascade in its failure, which in turn may cause production shutdowns. Such shutdowns are costly in terms of lost production time, maintenance costs, and wasted raw materials. Doubly fed induction generators are used mainly for wind energy conversion in MW power plants. This paper presents a detection of an inter turn stator fault in a doubly fed induction machine whose stator and rotor are supplied by two pulse width modulation (PWM) inverters. The method used in this article to detect this fault, is based on Park's Vector Approach, using a neural network.

**Keywords :** doubly fed induction machine, PWM inverter, inter turn stator fault, Park's vector approach, neural network

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