

## Analysis of the Electromechanical Behavior of a Double-Star Induction Motor with Rotor Bar Faults

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### **Abstract:**

In this paper, a comprehensive analysis with double-star induction motor on rotor bar faults simulation has been presented. The simulation is performed on two electric motors, a wound rotor and squirrel cage. Performance is studied in fault-free and for each motor type. Following this, the results were then compared based on a spectral analysis of the current in stator fault type instances to identify each faults. It was found that rotor bar fault results in specific harmonics at stator current spectrum which helps to detect and diagnose them.

### **Keywords:**

Double-Star Asynchronous, Motor Stator, Current Spectrum, Bar Defects, Fault Detection, Spectral Analysis