

THE CONTRIBUTION OF DIRECT TORQUE CONTROL WITH APPLICATION OF FUZZY LOGIC ON THE PERFORMANCE OF A MULTI-LEVEL INVERTER FED INDUCTION MACHINE WITH A FAULT TOLERANCE

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Abstract: Today it is possible to obtain induction machine performances similar to those of dc machines through the mastering of power electronics and control. Moreover, there are new methods of control for sensorless speed traction-type applications already studied particularly those related to the Direct Torque Control technique (DTC). This study consists at optimizing the three-level DTC algorithm fed from an NPC structure multilevel inverter with fault tolerant using the configurable redundant spare arm to increase the average value of the torque. The results obtained in the DTC are further improved by applying the technique of fuzzy logic

Keywords : Multilevel Inverter, DTC, NPC, Fault tolerance, Fuzzy logic.