Abstract:

Dynamic inversion (DI) is a controller technique by which existing undesirable dynamics are cancelled out and changed by desirable dynamics. The application of induction motor drives with sinusoidal input currents a matrix converter combined with DI is used which directly connects a three-phase input voltage source to a three-phase (AC-AC converter) without dc-link components. This paper presents a novelty of using nonlinear dynamic inverse controller with matrix converter topologies on three phase induction motor. The efficiency of the converter and their modulation techniques for the implementation of the strategies is increased. The speed response tracking and torque ripple minimization is achieved. The robustness of the proposed method has been confirmed from simulation and experimental model.