



An Improved V/F Control for High Performance Three Phase Induction Motor Drive

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Abstract:

The constant v/f control method is one of the most common speed control methods for Induction motors (IMs). In this paper the performance of constant v/f control method is improved by full compensation of the stator resistance voltage drop by the injection of low frequency boost voltage to achieve the rated torque speed characteristic at any speed below rated speed. Also simple frequency compensation based on estimation of air-gap power and a linear motor torque speed approximation is introduced. The dynamic performance of IM for proposed system is studied by MATLAB/SIMULINK under different load and speed variations. Further the proposed system is compared with the previous work. The simulation results show that the speed accuracy of the proposed method is improved effectively, even at low speed.

Keywords:

v/f control, constant flux, slip frequency compensation, torque and speed.

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