High Performance of Sinusoidal Pulse Width Modulation Based Flying Capacitor Multilevel Inverter fed induction Motor Drive

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Abstract

This paper focuses on the development of capacitor voltage balancing methods in a flying capacitor multilevel inverter (FCMLI) fed induction motor drive. For improve the performance of flying capacitor multilevel inverter to implement a switching pattern selection scheme. This reduces capacitor voltage fluctuation without using voltage feedback and RLC Filter circuits connected in parallel with the load. The sinusoidal pulse width modulation technique has been used while making the proposals. The method has been designed using a seven-level flying capacitor multilevel inverter as an example. The selected pattern has been shown to give superior performance in load-voltage total-harmonies Distortion level and mean capacitor voltage fluctuation. The performance of proposed strategies is confirmed through simulation investigations.

Reference


**Index Terms**

Power Engineering  
Modulation Techniques

**Key words**

Flying Capacitor Multilevel Inverter (FCMLI)  
AC Drive  
Total Harmonic Distortion  
Sinusoidal pulse width modulation (SPWM)