Abstract

In this paper, a comparative analysis of the carrier based pulse width with third harmonic injection and Digital pulse Width used in the inverter control is presented. The placement of the modulating components within the carrier interval determines the harmonic performance of the modulation strategy. The third harmonic injected modulated inverter and the digital pulse width modulation technique gives higher value of line to line voltage as compared with the conventional sine pulse width modulated (SPWM) inverter. The optimized third-harmonic injection controls the blanking time and minimum pulse width of an operating inverter switch. Whereas Digital Pulse-Width Modulation technique eliminates limit cycle oscillations for the applications with high switching frequency. The simulation results are presented with different PWM techniques and study of total harmonic distortion in the line voltage and current is
Comparison of Full Bridge Voltage source Inverter with Different PWM Techniques

analyzed for the three phase voltage source inverter using IGBT as a switching device.

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Comparison of Full Bridge Voltage source Inverter with Different PWM Techniques

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