

HIGH FREQUENCY RESONANT DC LINK PWM INVERTER.

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Abstract:

PWM inverter systems have been used in many industrial processes in order to control voltage, frequency and harmonic. On the other hand, High Frequency Resonant DC Link Inverters have been proposed to reduce the switching losses of power devices. This paper reports a simulation developed to use PWM technique with the High Frequency Resonant DC Link Inverter in order to increase the operational advantages of the PWM which allows to reduce the switching losses of the power devices as well as to provide voltage, frequency and harmonic control at the output of inverter. In this simulation, a shifting strategy has been proposed to produce new switching signals synchronised with the zero resonant voltage by keeping the high frequency resonant cycles constant during the operation and shifting the PWM signals slightly from their original place to the points where the resonant voltage is zero. The results obtained from the normal PWM inverter were compared with the results obtained from the proposed strategy. The comparisons between these results have proved the validity of the new scheme.