

Harmonic Reduction in Single Phase Inverter Using Genetic Algorithm

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Abstract: *The elimination of harmonics in a inverter by considering the dc sources by using GA are compared. Solving a nonlinear transcendental equation set describing the harmonic-elimination problem with dc sources reaches the limitation of contemporary computer algebra software tools using the resultant method. The proposed approach in this paper can be applied to solve the problem in a simpler manner, even when the number of switching angles is increased and the determination of these angles using the resultant theory approach is not possible. Theoretical results are verified by simulations results for a 9-level H-bridge inverter. Results show that the proposed method does effectively eliminate a great number of specific harmonics, voltage is and the output resulted in low total harmonic distortion.*

Keywords: Genetic Algorithm (GA), selective harmonic elimination, dc sources.