Using Differential Evolution Algorithms for the Analysis of Nonlinear Circuits

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***Abstract*—The paper presents the analysis of nonlinear resistive networks using a loop current formulation. The solution to the nonlinear algebraic system of equations is sought using several variants of differential evolution (DE) algorithms. The objective function to be minimized is considered to be the total error in satisfying the system of equations. The DE approach proves to be fast and robust and can give an accuracy comparable to that of the Newton-Raphson method.**
***Keywords*—nonlinear resistors;differential evolution;loop current method**

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