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Existence and analytic approximation of solutions of duffing type nonlinear integro-differential equation with integral boundary conditions
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Abstract
A generalized quasilinearization technique is developed to obtain a sequence of approximate solutions converging monotonically and quadratically to a unique solution of a boundary value problem involving Duffing type nonlinear integro-differential equation with integral boundary conditions. The convergence of order $k(k \geq 2)$ for the sequence of iterates is also established. It is found that the work presented in this paper not only produces new results but also yields several old results in certain limits. Copyright © 2009 A. Alsaedi and B. Ahmad.