عنوان مقاله:

An efficient technique based on the HAM with Green's function for a class of nonlocal elliptic boundary value problems

محل انتشار:

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خلاصه مقاله:

In this paper, we propose an efficient technique-based optimal homotopy analysis method with Green’s function technique for the approximate solutions of nonlocal elliptic boundary value problems. We first transform the nonlocal boundary value problems into the equivalent integral equations. We then apply the optimal homotopy analysis method for the approximate solution of the considered problems. Several examples are considered to compare the results with the existing technique. The numerical results confirm the reliability of the present method as it tackles such nonlocal problems without any limiting assumptions. We also provide the convergence and the error estimation of the proposed method.

کلمات کلیدی:

Optimal homotopy analysis method, Nonlinear nonlocal elliptic BVPs, Convergence analysis, Integral equations