



**Chebyshev Coefficient Comparison Method for  
the Numerical Solution of Nonlinear  
Boundary Value Problems**

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**Abstract**

A straight forward technique of solving nonlinear boundary value problems without recourse to any linearization scheme is being studied. Using a trial solution constructed as chebyshev form of Fourier cosine series in conjunction with the restricted form of the formulae derived in [O. A. Taiwo and A. S. Olagunju, Chebyshev methods for the numerical solution of fourth order differential equations, Pioneer J. Math. Math. Sci. 3(1) (2011), (73-82)], the entire nonlinear differential equation is converted into sum of chebyshev polynomials before the technique herein discussed. The method is demonstrated on a number of examples to illustrate the applicability and efficiency of the method.

**Keywords and phrases:** chebyshev-comparison method, nonlinear problems, chebyshev residual equations.

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