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Quartic B-spline and two-step hybrid method applied to boundary value problem

Abstract

Boundary value problem of second order ordinary differential equation (ODE) has been identified as a problem. However, this work will focus on solving a special case of second order ODE. Special case of second order ODE is a second order differential equation without first derivative term. Then, this problem will be solved numerically using quartic b-spline interpolation method and fifth order singly diagonally two-step hybrid method. In order to study the efficiency of these two methods, results obtained have been compared with exact solution of the problem. Finally, error and norm for each method have been calculated.

Keywords

Boundary Value Problem; Quartic B-spline; Two-step Hybrid Method