

Temporal Analysis to The Solution of Burgers' Equation Using Spectral Method

I.A ismail, M Kassem, A Abdel-Haleem

Abstract

The physically important Burgers' equation is solved using the spectral method technique with the orthogonal Chebyshev polynomials as its basis functions with some given boundary conditions. The same problem is again solved utilizing a transformation method that transforms Burgers' equation to a diffusion equation where the solution to Burgers' equation is easily found. Nevertheless, the solution to the same problem is found using a finite difference method. To find the best solution, these three methods are compared; concluding that numerically the spectral method is highly accurate