عنوان مقاله:

Solving a nonlinear inverse system of Burgers equations

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خلاصه مقاله:

By applying finite difference formula to time discretization and the cubic B-splines for spatial variable, a numerical method for solving the inverse system of Burgers equations is presented. Also, the convergence analysis and stability for this problem are investigated and the order of convergence is obtained. By using two test problems, the accuracy of presented method is verified. Additionally, obtained numerical results of the cubic B-spline method are compared to trigonometric cubic B-spline method, exponential cubic B-spline method and radial basis function method. Implementation simplicity and less computational cost are the main advantages of proposed scheme compared to previous proposals.

کلمات کلیدی:

System of Burgers equations, Cubic B-spline, Collocation method, Inverse problems, Convergence analysis, Stability analysis, Tikhonov regularization method, Ill-posed problems, Noisy data

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