

A Note on Numerical Solution of Classical Darboux Problem

Kotapally Kumar¹ and Ram Jiwari²

¹IIT Roorkee

²Indian Institute of Technology Roorkee

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Abstract

Recently, many authors studied the numerical solution of the classical Darboux problem in its integral form via a two-dimensional nonlinear Volterra-Fredholm integral equation. In the present article, a numerical technique based on the Chebyshev wavelet is proposed to solve the Darboux problem directly without converting into a nonlinear Volterra-Fredholm integral equation. The proposed technique is different from the techniques discussed in [1, 2, 4, 7, 11, 16, 17, 18, 19]. The proposed approach produces higher accuracy than its counterpart techniques. The proposed scheme illustrated with suitable examples to show the advantages in terms of its accuracy with lesser grid size.

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