

NUMERICAL METHOD FOR SOLVING SINGULAR NONLINEAR FIRST ORDER INITIAL VALUE PROBLEM

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ABSTRACT

In this paper, a reproducing kernel method is constructed in order to solve a class of non-linear singular first order initial value problem.

The exact solution of linear problem can be expressed in the form of series and approximate solution of nonlinear problem is given by iterative formula. The performance of the method is illustrated by two numerical examples.

KEYWORDS: Gram-Schmidt orthogonal process; Reproducing kernel space.