

**ONE-STEP NUMERICAL METHODS FOR MIXED FUNCTIONAL
DIFFERENTIAL EQUATIONS**

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First-order partial differential equations are reduced to ordinary differential equations by the method of characteristics. If there is a delay in the original equation, a similar method reduces the equation to a mixed functional differential equation with influence effects in the space variable and with time heredity. We present schemes of one-step multistage methods (analogs of explicit Runge–Kutta methods) for the numerical solution of mixed functional differential equations with the use of two-dimensional interpolation by degenerate splines. Orders of convergence are studied and results of numerical experiments on test examples are given.

Keywords: mixed functional differential equations, numerical algorithm, two-dimensional interpolation, extrapolation, convergence.

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