

A Sinc-Galerkin Approach for Systems of Conservation Laws of Mixed Hyperbolic-Elliptic Type

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A Sinc-Galerkin procedure is developed for systems of conservation laws of mixed hyperbolic-elliptic type. Sinc approximations to both derivatives and the indefinite integrals reduce the system to an explicit system of algebraic equations. It is shown that Sinc-Galerkin approximations produce an error of exponential order, that considered to be an improvement over errors that are polynomials in h . Approximation by Sinc functions handles singularities in the problem, as well as changes in type of the system. Numerical results for the test problems presented sustain the exponential convergence rate of the method.

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