A dual-Petrov-Galerkin method for the fifth-order Korteweg-de Vries type equations

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Abstract:

In this talk, we shall show our recent work [2-5] on the 5th-order KdV-type equation that models many physical phenomena such as gravity-capillary waves and magneto-sound propagation in plasmas. Dual-Petrov-Galerkin approximations [1] to those equations are considered. The key idea of this method is to use the trial functions satisfying the underlying boundary considerations of the differential equation and the test functions satisfying the dual boundary conditions. Our theoretical analysis and numerical results indicate that the proposed dual-Petrov-Galerkin method is extremely accurate and efficient.

References:

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