

Srdečně zveme pracovníky KMD, KAP a další zájemce z řad veřejnosti na přednášku pořádanou v rámci odborného semináře *KO-MIX*

Analysis and application of the discontinuous Galerkin method to the RLW equation

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Abstrakt přednášky:

The lecture is devoted to the development of a sufficiently robust, accurate and efficient numerical scheme for the solution of the regularized long wave (RLW) equation, an important partial differential equation with quadratic nonlinearity, describing a large number of physical phenomena. The crucial idea is based on the discretization of the RLW equation with the aid of a combination of the discontinuous Galerkin method for the space semi-discretization and the backward difference formula for the time discretization. Furthermore, a suitable linearization preserves linear algebraic problem at each time level.

We present a priori error analysis of the proposed scheme for the case of nonsymmetric discretization of the dispersive term. The appended numerical experiments for single solitary waves as well as periodic waves confirm the theoretical results and investigate the conservative properties of the RLW equation related to mass, momentum and energy. Both procedures illustrate the potency of the scheme consequently.

Za organizátory semináře srdečně zve

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