Analysis of discontinuous Galerkin methods for fractional conservation laws and related equations

Kenneth H. Karlsen
Centre of Mathematics for Applications - University of Oslo

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We propose, analyze, and demonstrate discontinuous Galerkin methods for fractal conservation laws and related equations. Various stability estimates are established along with error estimates for regular solutions of linear equations. Moreover, in the nonlinear case and whenever piecewise constant elements are utilized, we prove a rate of convergence toward the unique entropy solution.

Joint work with S. Cifani and E. R. Jakobsen.