Conforming and nonconforming Finite element approximations for the stationary generalized Burgers-Huxley equation

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In this talk we discuss the analysis of the stationary generalized Burgers-Huxley equation and propose conforming, nonconforming and discontinuous Galerkin finite element methods for its numerical approximation. We establish the existence, uniqueness and regularity of weak solutions using a Faedo-Galerkin approach and fixed-point theory. A priori error estimates for all three types of numerical schemes are rigorously derived. We present a set of computational results to show the efficacy of the proposed methods.

(Joint work with M. T. Mohan and R. Ruiz-Baier)

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