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On the reservoir technique convergence for nonlinear hyperbolic conservation laws

This talk is devoted to the convergence analysis of the reservoir technique coupled with finite volume flux schemes approximating nonlinear hyperbolic conservation laws (J. Sci. Comput. **31**(2007), 419–458; Eur. J. Mech. B **27**(2008), 643–664). After a presentation of this method, we prove its long-time convergence, accuracy and its TVD property for some general 1d configurations. Proofs are based on a precise study of the treatment by the reservoir technique of shock and rarefaction waves. Some numerical simulations will be provided to illustrate the analytical results.

This is a joint work with Prof. S. Labbé (Université Joseph Fourier, Grenoble).