Explicit wavefront tracking scheme and stability estimate for p-system.

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Abstract

In this talk, we present a stability result for the weak entropic solutions of the p-system. We construct an explicit wave-front tracking scheme for the p-system through a piecewise linear approximation of the flux function. Additionally, we establish the stability of the weak solution with respect to the Lipschitz continuity of the flux function, using the method outlined in [Bianchini, Colombo, Proc. Amer. Math. Soc., 2002]. Furthermore, we demonstrate the convergence of the approximate solution to the weak solution of the p-system by employing stability estimates. The explicit nature of our approximation scheme allows us to derive precise convergence rate for the approximate solution.