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A Parametric Interpolation Framework for 1D Scalar Conservation Laws using the Equal Area Principle

The equal area principle is a technique used for locating shocks in weak solutions of scalar conservation laws. Despite widespread knowledge of the equal area principle, little work has been done to make it viable from a numerical standpoint. In this talk we present key analytical results which allows weak solutions to be obtained purely from solutions of a parametric interpolation problem. We will discuss properties of our proposed parametric interpolation framework, along with numerical results and plans for future work.