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*The Generalized 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 particular, stronger analytical results for general initial conditions and convex flux functions are required. In this talk we present a theorem which accomplishes this. We provide an extension called the generalized equal area principle and prove its equivalence to the Rankine-Hugoniot jump condition. This extension yields the basis for our proposed numerical framework, enabling high accuracy numerical methods which utilize the equal area principle. To conclude we will discuss key properties of our proposed numerical framework, along with numerical results and plans for future work.