

# The Riemann function and oscillations in hyperbolic systems

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ABSTRACT: The fundamental solution for the equation describing entropies for systems of two conservation laws is determined in terms of the Riemann function. It gives rise to a "universal" entropy pair that can be cut in the directions of Riemann invariants to produce singular entropy pairs. The goal of the talk is to describe how to use the singular pairs to obtain simplified proofs of well known results of compensated compactness. Moreover, the rapport between the singular pairs and the fundamental solution may be used to obtain a new formula for the coupling of oscillations between two general characteristic fields. (joint work with B. Perthame)