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Siddhartha Mishra* (smishra@sam.math.ethz.ch), ETH HG G 57.2, Raemistrasse 101, 8092 Zurich, Switzerland. *Numerical schemes that converge to the entropy measure valued solutions of systems of conservation laws.*

Entropy solutions are considered to be the correct notion of solutions for hyperbolic systems of conservation laws. We question this notion through illustrative numerical experiments in several space dimensions and demonstrate that entropy solutions may not be well-posed. On the other hand, numerical experiments suggest that the solutions maybe young measures and the appropriate solution framework is that of entropy measure valued solutions. We develop a general theory for obtaining numerical schemes that converge to entropy measure valued solutions and provide at least two classes of numerical methods that satisfy these abstract criteria. We conclude with a discussion of interesting theoretical as well as computational issues that arise in this context. (Received September 13, 2013)