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Andrew Lorent* (alorent@gmail.com), Cincinnati, OH 45219, and **Guanying Peng** (pgy218@gmail.com), AZ. *Null Lagrangian Measures in planes, compensated compactness and conservation laws.*

Compensated compactness is an important tool for solving non-linear PDE. In particular existence theorems for hyperbolic conservation laws. At their heart - compensated compactness proofs come down to showing a particular class of measures (call Null Lagrangian measures) supported on submanifolds in matrix space are actually Dirac measures. A general necessary and sufficient characterization of the conditions under which this is true is unknown even for subspaces in Matrix space, we present results in this direction answering the question in lower dimensions. As an application of the methods, we answer a question of Kirchheim, Muller, Sverak and apply our results reformation of the proof of a classic result by DiPerna. This is joint work with Guanying Peng of the University of Arizona. (Received February 20, 2018)