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**Lucas J. Rusnak\*** (rusnak@math.binghamton.edu), Department of Mathematical Sciences, Binghamton University, Binghamton, NY 13902. *Oriented Incidence and a Generalization of Hypergraphs.*

I will introduce an incidence-based orientation scheme for hypergraphs that combinatorially model  $\{0, +1, -1\}$ -matrices. Topics discussed will include the introduction of new hypergraphic structures and operations, the decomposition of oriented hypergraphs into three families of varying degrees of “balance”, and their relevance to the classification of the circuits of  $\{0, +1, -1\}$ -matrices. Additionally I will discuss extensions of the theory related to circuit classifications of representable matroids. (Received January 20, 2010)