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**Elena Pavelescu\*** ([elena.pavelescu@okstate.edu](mailto:elena.pavelescu@okstate.edu)), Oklahoma State University, MSCS 528, Stillwater, OK 74078, and **Ramin Naimi** ([rnaimi@oxy.edu](mailto:rnaimi@oxy.edu)), Occidental College, 1600 Campus Road, Los Angeles, CA 90041. *Oriented matroids and straight-edge embeddings of graphs.*

Matroid theory is an abstract theory of dependence introduced by Whitney in 1935. It is a natural generalization of linear (in)dependence. Oriented matroids can be thought of as combinatorial abstractions of point configurations over the reals. To every linear (straight-edge) embedding of a graph one can associate an oriented matroid, and the oriented matroid captures enough information to determine which pairs of disjoint cycles in the embedded graph are linked. In this talk, we will introduce the basics of oriented matroids. Then we show that any linear embedding of  $K_9$ , the complete graph on nine vertices, contains a non-split link with three components. (Received September 09, 2014)