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(caroline_klivans@brown.edu) and **Jeremy L. Martin** (jmartin@math.ku.edu). *Max flow min cut in higher dimensions*. Preliminary report.

In previous work, we used matroid theory to extend the construction of cut and flow spaces of a graph to cell complexes of arbitrary dimension. Here we use these spaces to generalize the well-known max flow min cut theorem from graphs to cell complexes. Specifically, the maximum flow on a designated codimension-1 homology cycle equals the value of a minimum cut (a cocircuit in the cellular matroid) containing that cycle. (Received September 25, 2012)