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Thomas Zaslavsky*, Dept. of Math. Sci., Binghamton, NY 13902-6000. *Quasibalanced signed graphs*. Preliminary report.

A signed graph is a graph with edges signed positive or negative. In many ways graphs are like all-positive signed graphs. In particular, signed graphs have a “frame matroid” that is the usual graphic matroid if all signs are positive; more generally, iff the signed graph is “balanced” (every circle has positive sign product). The frame-matroid circuits are the positive circles, the pairs of negative circles that have just one common vertex, and the pairs of disjoint negative circles along with a minimal connecting path.

Bessouf and Khelladi (unpublished) have suggested questions about circuits that lie on the boundary between graphs and matroids. In particular, in which signed graphs is every circuit a positive circle? (Call them “quasibalanced”.) An equivalent condition is that every two negative circles have two or more common vertices. I will describe the structure of quasibalanced signed graphs. (Received June 20, 2017)