1171-05-239 Calum Buchanan* (calum.buchanan@uvm.edu), Alexander Clifton, Eric Culver, Jiaxi Nie, Jason O'Neill, Puck Rombach and Mei Yin. Expressing graphs as symmetric differences of bicliques. Preliminary report.

Any finite simple graph G = (V, E) can be expressed by a collection of bicliques, or complete bipartite graphs, on subsets of V in which each pair $u, v \in V$ is adjacent in an odd number of bicliques if and only if $uv \in E$. The minimum cardinality of such a collection is denoted $b_2(G)$. We show that $b_2(G)$ is at least half of the rank over \mathbb{F}_2 of the adjacency matrix of G, and that this bound is tight when G is bipartite. For other classes of graphs, such as odd cycles, the bound is strict. Finally, it is not hard to see that twin vertices do not affect $b_2(G)$, and we construct a family of graphs $\{B_k \mid k \in \mathbb{N}\}$ such that each B_k contains every twin-free graph G with $b_2(G) \leq k$ as an induced subgraph. (Received August 17, 2021)