

1106-15-196      **Oscar F Leong\*** (oleong1@swarthmore.edu). *Ranks of graphs over  $\mathbb{Z}_2$* . Preliminary report.

We define the  $\mathbb{Z}_2$ -rank of a graph  $G$  to be the rank of its adjacency matrix over  $\mathbb{Z}_2$ . We show that the  $\mathbb{Z}_2$ -rank of  $G$  is full if and only if the graph  $G$  has an odd number of perfect matchings. We then compute the rank of  $G$  over  $\mathbb{Z}_2$  for a number of different graph families, including paths, cycles, wheels, complete graphs, complete bipartite graphs, and ladder graphs. (Received August 08, 2014)