

1105-05-313

Eva Czabarka* (czabarka@math.sc.edu). *Joint degree matrices and partition adjacency matrices*. Preliminary report.

The joint degree matrix (JDM) of a graph contains the number of edges between vertices of degree i and degree j in the (i, j) -th position. Information in the joint degree matrix is sufficient to compute the assortativity of the graph, which is essentially the Pearson correlation coefficient of the degrees of adjacent vertices. The partition adjacency matrix (PAM) is a slight generalization: given a partition $\{P_1, \dots, P_M\}$ of the vertex set, the (i, j) -th entry gives the number of edges between vertices of the i -th and j -th partition class. We will discuss some results on JDMs, PAMs, and the connectedness of the collection of graphs with the same degree sequence and same JDM/PAM under certain restricted edge swaps, and discuss some open problems related to the topic. (Received September 23, 2014)