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Sudipta Mallik* (smallik@uwyo.edu). *Probabilistic methods for minimum skew rank of graphs.*

The zero-nonzero pattern of a skew-symmetric matrix defines a graph. The minimum rank of all real skew-symmetric matrices with a given graph is studied. Probabilistic methods are applied to show that for sufficiently large n , there is a graph G of order n for which every skew-symmetric matrix with graph G has rank at least 6, thereby settling an open problem. It is also proved that almost all graphs on n vertices do not allow a skew-symmetric matrix whose rank is more than $\frac{n}{25}$. (Received September 14, 2013)