New techniques of finding minimum skew rank of graphs.

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Abstract: The minimum skew rank of a simple graph G is the smallest possible rank among all real skew-symmetric matrices whose ij-th entry is nonzero whenever i, j is an edge of G and zero otherwise. All graphs of minimum skew rank 2 have been characterized. Here we study the family of graphs with minimum skew rank 4. We discuss properties and forbidden subgraphs of this family. Some new techniques of finding minimum skew rank of graphs and its consequences will be presented.