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Tallahassee, FL 32306. *Degrees of projections of rank loci.*

We provide formulas for the degrees of the projections of the locus of square matrices with given rank from linear spaces spanned by a choice of matrix entries. The motivation for these computations stem from applications to ‘matrix rigidity’. These degrees appear to match the numbers of Kekulé structures of certain benzenoid hydrocarbons, and arise in many other contexts with no apparent direct connection to the enumerative geometry of rank conditions. (Received September 20, 2014)