1135-VP-1176   **Éva Czabarka**, **Kayvan Sadeghi**, **Johannes Rauh**, **Taylor Short*** (`shorttay@gvsu.edu`) and **László Székely**. *The maximum number of non-zero elements in a joint degree vector.*

The joint degree vector (JDV) of a n-vertex graph gives the number of edges between vertices of degree i and degree j for $1 \leq i < j \leq n - 1$. The number of non-zero entries in the JDV of a graph provides an upper bound on the number of estimable parameters in the exponential random graph model with bidegree distribution as its sufficient statistic. Determining the maximum number of non-zero entries of the JDV over all n-vertex graphs seems quite challenging. We find lower and upper bounds for this quantity and discuss room for improvement. (Received September 20, 2017)

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