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Graph polynomials unimodular for almost all graphs.

Inspired by a recent result of I. Beaton and J. Brown (2020), which states that for almost all graphs the domination polynomial $D(G; x)$ has a unimodal sequence of coefficients, we study the same unimodality result for graph polynomials which are generating functions of a graph property \mathcal{C} or a property of graphs with an additional relation \mathcal{P} .

THEOREM: Let \mathcal{C} be the complement of a hereditary graph property, and let $P_{\mathcal{C}}(G; X) = \sum_{A \subseteq V(G): G[A] \in \mathcal{C}} X^{|A|}$. Then the coefficients of $P_{\mathcal{C}}(G; X)$ are unimodal for almost all graphs G .

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