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Akihiro Higashitani* (a-higashitani@cr.math.sci.osaka-u.ac.jp). *Minkowski sums of edge polytopes.*

Let G be a connected simple graph on the vertex set $\{1, \dots, d\}$ with the edge set $E(G)$ and let \mathcal{P}_G be the edge polytope of G , which is the convex hull of $\{\mathbf{e}_i + \mathbf{e}_j : \{i, j\} \in E(G)\}$, where $\mathbf{e}_1, \dots, \mathbf{e}_d$ are the unit coordinate vectors of \mathbb{R}^d . For an integral convex polytope $\mathcal{P} \subset \mathbb{R}^N$, we say that \mathcal{P} possesses the integer decomposition property if for any positive integer k and for any $\alpha \in k\mathcal{P} \cap \mathbb{Z}^N$, there exist $\alpha_1, \dots, \alpha_k \in \mathcal{P} \cap \mathbb{Z}^N$ such that $\alpha = \alpha_1 + \dots + \alpha_k$. It is a fundamental and interesting problem to give a complete characterization when the Minkowski sum $\mathcal{P}_G + \mathcal{P}_{G'}$ of two edge polytopes of graphs G and G' on the same vertex set possesses the integer decomposition property. In this talk, some partial answers of this problem will be presented. (Received August 05, 2013)