

On Maximum Packings of the Complete 3-Uniform Hypergraph with the Lines of the Pasch Configuration

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The complete 3-uniform hypergraph of order v , denoted $K_v^{(3)}$, has a set V of size v as its vertex set and the set of all 3-element subsets of V as its edge set. Let P denote the 3-uniform hypergraph with vertex set $\{a, b, c, d, e, f\}$ and edge set $\{\{a, b, c\}, \{c, d, e\}, \{a, e, f\}, \{b, d, f\}\}$. Thus the edges of P are the lines of the Pasch configuration and P is 2-regular. It is known that there exists a P -decomposition of $K_v^{(3)}$ if and only if $v \equiv 1, 2$ or $6 \pmod{8}$, $v \neq 6$. In this work, we give a maximum P -packing of $K_v^{(3)}$ for every positive integer v .

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