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ABOUT 3-UNIFORM HYPERGRAPHS

Let H be a 3-uniform hypergraph. A tournament T defined on $V(T) = V(H)$ is *a realization* of H if the edges of H are exactly the 3-element subsets of $V(T)$ that induce 3-cycles. Given a 3-uniform hypergraph H, a subset M of $V(H)$ is *a module* of H if for each $e \in E(H)$ such that $e \cap M \neq \emptyset$ and $e \setminus M \neq \emptyset$, there exists $m \in M$ such that $e \cap M = \{m\}$ and for every $n \in M$, we have $(e \setminus \{m\}) \cup \{n\} \in E(H)$. We characterize the 3-uniform hypergraphs that admit realizations by using a suitable modular decomposition.

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