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Hypergraph transversals and kernels in digraphs

In this work we relate the existence of certain transversals of square hypergraphs with the existence of kernels in digraphs. This method allows us to propose and to prove several results on the existence of kernels in digraphs. In particular we have the following: In 1980, H. Meyniel conjectured that if D is a digraph such that every odd directed cycle has at least two pseudodiagonals, then D has a kernel. Although this conjecture was disproved by Galeana-Sánchez (1982), the following modification of Meyniel's Conjecture still holds: If D is a digraph such that every Ω -odd cycle has at least two Ω -pseudodiagonals, then D has a kernel. Some open problems are proposed.