
Semidefinite approximations for bicliques and biindependent pairs

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Abstract

A (bipartite) biindependent pair in a bipartite graph $G=(V_1 \cup V_2, E)$ is a pair (A, B) , where $A \subseteq V_1$, $B \subseteq V_2$ and the union $A \cup B$ is independent in G . We study the parameters $g(G)$ and $h(G)$, defined, respectively, $g(G)$ as the maximum size of a biindependent pair in G , and $h(G)$ as the maximum number of biindependent pairs in G . We define semidefinite programming upper bounds on $g(G)$ and $h(G)$ for eigenvalue bounds, coinciding with the semidefinite bounds for edge – transitive graphs.

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