The Coclique Number of Orthogonality Graphs

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Abstract

The *orthogonality graph* has vertex set $\{-1, 1\}^n$ with two vertices x, y adjacent if $\langle x, y \rangle = \sum_{i=1}^{n} x_i y_i = 0$. A subset of vertices is called a *coclique* (independent set, stable set) if all its elements are pairwise nonadjacent. We will discuss various approaches for determining the coclique number of highly regular graphs with the orthogonality graph as an example.