

1077-15-2809

Louis Deaett* (Louis.Deaett@quinnipiac.edu). *The minimum semidefinite rank of the Heawood graph is 10.*

The Heawood graph is the unique (3,5)-cage graph, and the point-line incidence graph of the Fano plane. Consider an assignment to each vertex of this graph of a vector in \mathbb{C}^n such that two vectors are orthogonal if and only if the vertices to which they are assigned are not adjacent. In joint work with H. Tracy Hall, we show that the smallest n for which this is possible is $n = 10$. That is, the minimum semidefinite rank of the Heawood graph is equal to 10. (Received September 22, 2011)