1067-Z1-2207   **Louis Deaett*** (`deaett@math.uvic.ca`), Dept of Mathematics and Statistics, University of Victoria, P.O. Box 3060 STN CSC, Victoria, BC V8W 3R4, Canada. *Vector coloring of graphs.*

Starting with a finite graph, we wish to 'color' each vertex with a vector from $\mathbb{C}^k$ in such a way that two vertices are adjacent if and only if the vectors assigned to them are not orthogonal. The salient question is: For a given graph, for how small a k is this possible? We will present some recent results on this problem and discuss its relationship with other problems in combinatorial matrix analysis. (Received September 22, 2010)