Vertex identifying codes in graphs: definitions, theorems and open problems

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March 31, 2006

Abstract

In 1998, Karpovsky, Chakrabarty and Levitin introduced a new graph invariant called the vertex identification code. If C is a subset of the vertices, then C is a **vertex-identifying code** if each set $N[v] \cap C$ is distinct and nonempty, where $N[v]$ denotes the closed neighborhood of vertex v. We will discuss a number of results on the size of the smallest code in a graph, particularly on the Erdős-Rényi random graph and we will present open problems.