

1084-05-265

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New Results on the Geometric Thickness of Graphs. Preliminary report.

A graph G is said to have *geometric thickness* t if there exists a straight line drawing of G with the edges partitioned into t sets such that each set of edges induces a plane graph and t is smallest possible. This definition is similar to the classical notion of thickness with two added restrictions, namely that the vertices in each plane layer are in the same location and the edges are line segments. We will discuss a variety of new results as well as open questions related to edge bound, chromatic number, and, if time permits, recognition problems. (Received September 03, 2012)