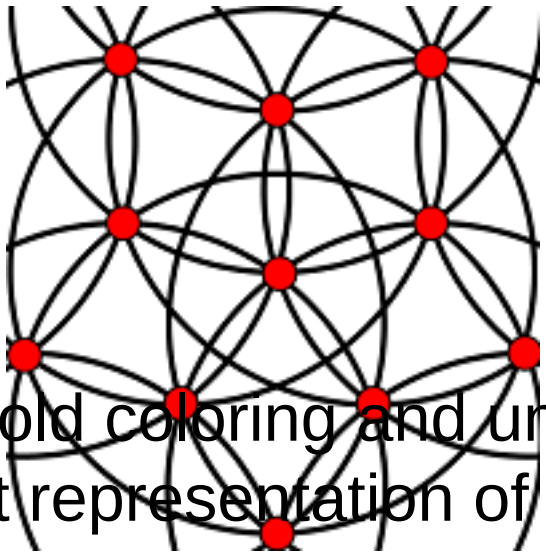
CSASC 2013



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Threshold coloring and unit cube contact representation of graphs

Content :

Given a partition of edges of a graph G into \emph{near} and \emph{far} edges, a \emph{threshold coloring} is a labeling of $V(G)$ so that every pair of vertices adjacent with a \emph{near} edge receive integer labels that are closer than a certain threshold, and every pair of vertices adjacent with a \emph{far} edge receive labels at greater distance.

Not every planar graph is threshold colorable, yet several subclasses of planar graphs admit a threshold coloring. Applying the concept of threshold colorings to infinite planar grids we were able to show that, for example, every subgraph of a hexagonal tessellation of the plane admits a unit-cube contact representation.

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