

# FAST EXACT ALGORITHM FOR $L(2,1)$ -LABELING OF GRAPHS

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An  $L(2,1)$ -labeling of a graph is a mapping from its vertex set into non-negative integers such that the labels assigned to adjacent vertices differ by at least 2, and labels assigned to vertices of distance 2 are different. The span of such a labeling is the maximum label used, and the  $L(2,1)$ -span of a graph is the minimum possible span of its  $L(2,1)$ -labelings. We show how to compute the  $L(2,1)$ -span of a connected graph in time  $O^*(2.6488^n)$ . Previously published exact exponential time algorithms were gradually improving the base of the exponential function from 4 to the so far best known 3.2361.

**Keywords:**  $L(2,1)$ -labeling, exact algorithm.

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