

2-distance coloring of the direct product of two cycles

Yoomi Rho

(joint work with Byeong Moon Kim and Byung Chul Song)

The square of a graph is obtained by adding edges between vertices of distance two in the original graph. 2-distance coloring of a graph is the vertex coloring of its square graph. Accordingly the chromatic number of 2-distance coloring is called 2-distance chromatic number. 2-distance coloring equivalent to a kind of the distance two labeling, $L(1, 1)$ -labeling, motivated by the channel assignment problem. In this paper we find the 2-distance chromatic number of the direct product of two large cycles. Moreover we provide that of the direct product of paths and cycles.