RAINBOW CONNECTION NUMBER AND GRAPH PRODUCTS

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A path in an edge colored graph G is called a rainbow path if all edges have pairwise different color. Then G is rainbow connected if there exists a rainbow path between every pair of vertices of G and the least number of colors needed to obtain a rainbow connected graph is rainbow connection number. If we demand that there must exists a shortest rainbow path between every pair of vertices, we speak about strong rainbow connected graph and strong rainbow connection number. In this talk we consider the (strong) rainbow connection number on direct, strong, and lexicographic product and present several upper bounds for these products that are attained by many graphs. Several exact results will also be presented.

Keywords: (strong) rainbow connection number, direct product, strong product, lexicographic product.

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