

Two New Families of Circulant Graphs with Constant Ricci Curvature

Mehmet Dağlı

Amasya University

`mehmet.dagli@amasya.edu.tr`

The Ricci curvature of graphs proposed by Lin, Lu and Yau provides an isomorphism invariant for graphs. In computer science applications, twisted torus interconnection networks have performance advantages compared to rectangular torus interconnection networks. Accordingly, it is important to know whether twisted tori are circulant or not. With a finitely many exceptions, it is known that twisted tori are Ricci flat and hence they cannot be isomorphic to any circulant graph having an edge with positive curvature. Therefore, J.D.H. Smith initiated a research program to build up a catalog of the Ricci curvature of circulant graphs. This talk will present two new families of circulants with constant Ricci curvature. Such families contain one of the known families as a special case.

MSC2000: 05C10.

Keywords: Ricci curvature, circulant graphs.