

# On $k$ -pairable graphs (II)

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## Abstract

The concept of the  $k$ -pairable graphs was introduced by Chen (*On  $k$ -pairable graphs*, Discrete Mathematics **287** (2004), 11–15) as an extension of hypercubes and graphs with an antipodal isomorphism. In the same paper, a new parameter  $p(G)$  of a graph  $G$ , called the pair length of  $G$ , was also introduced as the maximum  $k$  such that  $G$  is  $k$ -pairable, and  $p(G) = 0$  if  $G$  is not  $k$ -pairable for any positive integer  $k$ .

We give some structural properties for the graphs with pair length  $k$ . We also prove that  $p(G \square H) = p(G) + p(H)$  for any graphs  $G$  and  $H$ . Some applications are also given.