应用数学学报
Acta Mathematicae Applicatae Sinica (Chinese Series)
ISSN 0254-3079
CN 11-2040/O1

应用数学学报 » 2013, Vol. 36 » Issue (2): 204-208 DOI:

n-double图的连通性

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Connectivity of n-double Graphs

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摘要 设$G_1=(V_1, E_1)$, $G_2=(V_2, E_2)$是两个连通图, 直积(direct product) (也称为Kronecker product, tensor product和cross product) $G_1 \otimes G_2$ 的点集为 $V(G_1 \otimes G_2) = V(G_1) \otimes V(G_2)$, 边集为$E(G_1 \otimes G_2) = \{(u_1, v_1)(u_2, v_2): u_1u_2 \in E(G_1), v_1v_2 \in E(G_2)\}$. 简单图$G$的 n-double图$D_n[G] = G \otimes T_n$,其中n个点的全关系图 T_n是完全图K_n在每个点加上一个自环得到的图. 在本文中, 我们研究了$D_n[G]$ 的(边)连通性, 超(边)连通性.

关键词: n-double 图 (边)连通性 超(边)连通性

Abstract: Let $G=(V,E)$ be a connected graph. The direct product (also named Kronecker product, tensor product and cross product) $G_1 \times G_2$ has vertex set $V(G_1 \times G_2) = V(G_1) \times V(G_2)$ and edge set $E(G_1 \times G_2) = \{(u_1, v_1)(u_2, v_2): u_1u_2 \in E(G_1), v_1v_2 \in E(G_2)\}$. We define the n-double of a simple graph G as the graph $D_n[G] = G \times T_n$. The total graph T_n on n vertices is the graph associated to the total relation (where every vertex is adjacent to every vertex). It can be obtained from the complete graph K_n by adding a loop to every vertex. In this paper, we study the (edge)connectivity, super (edge)connectivity of $D_n[G]$.

Key words: n-double graphs (edge)connectivity super (edge)connectivity

收稿日期: 2010-03-22;

基金资助:

国家自然科学基金(11171279;11126321;11161006;71201049);厦门理工学院博士启动金(YKJ12030R);广西自然科学基金(2012GXNSFBA053005)资助项目.

引用本文:

郭利涛,覃城阜,郭晓峰. n-double图的连通性[J]. 应用数学学报, 2013, 36(2): 204-208.

GUO Litao,QIN Chengfu,GUO Xiaofeng. Connectivity of n-double Graphs[J]. Acta Mathematicae Applicatae Sinica, 2013, 36(2): 204-208.

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