



华东师范大学学报(自然科学版) » 2013, Vol. 2013 » Issue (1): 11-16 DOI:

应用数学与基础数学

最新目录 | 下期目录 | 过刊浏览 | 高级检索

« Previous Articles | Next Articles »»

简单平面图中短圈数目的估计

唐保祥¹, 施莉骅², 任 韩²

- 1. 天水师范学院--数学与统计学院, 甘肃 741001;
- 2. 华东师范大学--数学系, 上海 200241

Estimating the number of short cycles in simple planar graphs

TANG Bao-xiang¹, SHI Li-hua², REN Han²

- 1. School of Mathematics and Statistics Institute, Tianshui Normal University, Gansu 741001, China;
- 2. Department of Mathematics, East China Normal University, Shanghai 200241, China

- 摘要
- 参考文献
- 相关文章

全文: PDF (283 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 证明一个 n 阶简单连通平面图 G , 中至多有 $O(n^2)$ 个最短圈, (即存在绝对常数 $c > 0$, 使得 G 中至多有 cn^2 个最短圈), 且该界就 n 的量级来讲是最好可能的, $K_{n-2, 2}$ 表明了 n^2 是可以达到的量级.

关键词: 短圈 基本圈 Jordan曲线定理

Abstract: This paper showed that the number of the shortest cycles in a planar graph of order n is at most $O(n^2)$ and the bound is the best possible (subject to the power of n) since $K_{n-2, n}$ contains exactly $\frac{(n-2)(n-3)}{2}$ many 4-cycles.

Key words: short cycle fundamental cycle Jordan curve theorem

收稿日期: 2011-12-01; 出版日期: 2013-01-25

引用本文:

. 简单平面图中短圈数目的估计[J]. 华东师范大学学报(自然科学版), 2013, 2013(1): 11-16.

. Estimating the number of short cycles in simple planar graphs[J]. Journal of East China Normal University(Natural Sc, 2013, 2013(1): 11-16.

[1] {1}

[2] BONDY J A, MMURTY U S R. Graph Theory with Applications[M]. London: Macmillan, 1978.

[3] {2}

[4] THOMASSEN C. Embeddings of graphs with no short noncontractible cycles[J]. J of Combin Theory Ser B, 1990, 48: 155-177.

[5] {3}

[6] GRÖTSCH H. Ein Dreifarbensatz für dreikreisfreie Netze auf der Kugel[J]. Wiss Z Martin Luther-Univ Halle Wittenberg, Math-Nat Reihe, 1959, 8: 109-120.

[7]

[8]


[9]

[10]

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- [11] {4}
- [12] HALFORD T R, CHUGG K M. An algorithm for counting short cycles in
- [13] Bipartite graphs[J]. IEEE Transactions on Information Theory, 2006,
- [14] (1): 287-292.
- [15] {5}
- [16] MACKAY D J C, NEAL R M. Near Shannon limited performance of low
- [17] density parity check codes[J]. IEE Electron Lett, 1997, 32(18):
- [18] 45-1646.
- [19] {6}
- [20] REN H, CAO N. Finding short cycles in embedded graphs[J]. Front Math
- [21] in China, 2010, 5(2): 319-327. 
- [1] 吴甬翔;李 刚;李浩玲;任 韩. 图的局部连通性与上可嵌入性[J]. 华东师范大学学报(自然科学版), 2011, 2011(2): 22-31.
- [2] 王新霞;束金龙. 一类树图谱半径的界[J]. 华东师范大学学报(自然科学版), 2005, 2005(3): 12-16.