

论文

极大平面图的组合运算

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 一、引言有关平面4色问题的综合论述见文[1]和文[2].目前这一问题因有计算机辅助证明而得到解决,但这种证明繁杂.又由于等价的命题多,联系的方面广,因而对此问题进行新的理论探讨,便不会是毫无意义.把平面4色问题化成只与圈上的4染色集性质有关的问题来解决,这种思想在文[3]中已经有了,只可惜该文最后所提出的猜想不真(对长度为4的圈已不成立.此事我们将另文评述).
 本文以极大平面图的组合序列为基础,得出一些只与圈上的4染色集的性质有关的等价于平面4色猜想的命题.

关键词

分类号

COMBINATORIAL OPERATIONS ON NEAR-TRIANGULATIONS OF THE PLANE

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Abstract In this paper combinatorial operations, $T \sim^*$, $T \sim^+$ and π , on near-triangulations are introduced and used in a process of building up a given near-triangulation G bounded by a circuit Q_r . In this process one starts from an arbitrary triangle Δ , and adds a new triangle $\Delta_{(i+1)}$, at each time, to the intermediate near-triangulation G_i previously formed so that one or two properly assigned sides on the bounding circuit of G_i is or are coincident with that of $\Delta_{(i+1)}$. At the end of this process one gets G . Based on the above combinatorial results, conjectures which are concerned only with the properties of 4-colorings of circuits and each of which is equivalent to the Four-Color Theorem are given in the present paper. It is also pointed out that an enlightening conjecture of the above type—a conjecture at the end of a paper by H. Whitney and W.T. Tutte is not true even for circuits of length 4.

Key words

DOI:

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