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A 3-Color Theorem on Plane Graphs Without 5-Circuits

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摘要

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A 3-Color Theorem on Plane Graphs Without 5-Circuits

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Abstract In this paper, we prove that every plane graph without 5-circuits and without triangles of distance less than 3 is 3-colorable. This improves the main result of Borodin and Raspaud [Borodin, O. V., Raspaud, A.: A sufficient condition for planar graphs to be 3-colorable. *Journal of Combinatorial Theory, Ser. B.* **88**, 17--27 (2003)], and provides a new upper bound to their conjecture.

Key words [plane graph](#) [circuit](#) [coloring](#)

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