

Planar Graphs have Bounded Queue Number

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We show that planar graphs have bounded queue number, thus proving a conjecture of Heath, Leighton and Rosenberg from 1992. The key to the proof is a new structural tool called layered partitions, and the result that every planar graph has a vertex-partition and a layering, such that each part has a bounded number of vertices in each layer, and the quotient graph has bounded treewidth. This result generalizes for graphs of bounded Euler genus. Building on this work and using the graph minor structure theorem, we prove that every proper minor-closed class of graphs has bounded queue number.