

Khuller, Samir; Naor, Joseph

Flow in planar graphs with vertex capacities. (English) Zbl 0794.68114
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Summary: Max-flow in planar graphs has always been studied with the assumption that there are capacities only on the edges. Here we consider a more general version of the problem when the vertices as well as edges have capacity constraints. In the context of general graphs considering only edge capacities is not restrictive, since the vertex-capacity problem can be reduced to the edge-capacity problem. However, in the case of planar graphs this reduction does not maintain planarity and cannot be used. We study different versions of the planar flow problem (all of which have been extensively investigated in the context of edge capacities).

MSC:

68R10 Graph theory (including graph drawing) in computer science
90B10 Deterministic network models in operations research

Cited in **1** Review
Cited in **4** Documents

Keywords:

planar graphs; vertex capacities; network flow; circulation problem

Full Text: [DOI](#)

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