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Upper embeddable graphs with respect to $A$-partition on vertices. (Chinese. English summary)

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Summary: An $A$-partition of a graph $G$ is a partition $\{V_1, V_2, \ldots, V_s\}$ of $V(G)$ such that $G[V_i]$ is a multi-complete graph or multi-bipartite graph for any integer $i$, $1 \leq i \leq s$. By combining $A$-partition with valency of vertex and edge-connectivity, the new upper embeddable graphs are found and their structure is completely characterized. Thus, some similar already known results are generalized.

MSC:

05C10 Planar graphs; geometric and topological aspects of graph theory

05C70 Edge subsets with special properties (factorization, matching, partitioning, covering and packing, etc.)

Keywords:

Betti deficiency number; upper embeddability; maximum genus; $A$-partition