

## Subgraph Covering of Graphs

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**ABSTRACT.** A graph  $G$  is covered by a set  $X$  of its subgraphs if each edge of  $G$  is contained in at least one subgraph in  $X$ . The famous Four Colour Problem is equivalent to covering a planar graph by two even subgraphs, which is also equivalent to the existence of nowhere-zero 4-flows in planar graphs. (An even graph is one that can be covered by a set of edge-disjoint circuits.) This talk will focus on covering a graph by circuits or paths.