
MICHAEL O'SULLIVAN, San Diego State University

Maximal t -path traceable graphs

The problem of characterizing maximal non-Hamiltonian graphs may be naturally extended to characterizing graphs that are maximal with respect to nontraceability and beyond that to t -path traceability. We define a graph to be t -path traceable if the minimal number of paths that can cover it is t , and it is maximal for this property when adding an edge yields a $(t - 1)$ -path traceable graph. We show how t -path traceability behaves with respect to disjoint union of graphs and the join with a complete graph. Our main result is a decomposition theorem that reduces the problem of characterizing maximal t -path traceable graphs to characterizing those that have no universal vertex. We generalize a construction of maximal non-traceable graphs due to Zelinka to t -path traceable graphs.