

From seven bridge to sweep cover

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Routing is a basic problem in the real life. One typical instance is the Euler Tour Problem (ETP), raised to solve the Königsberg Seven Bridge Problem and regarded as the starting point of graph theory. ETP can be solved in polynomial time. Another typical instance is the Traveling Salesman Problem (TSP), which is known to be notoriously hard, but admits a 1.5-approximation in the metric case. Although these problems are classic and well-studied, the rapid development of network has proposed numerous new variants and new challenges. In this talk, I would lead a journey from Seven Bridge to some new research topics of routing, especially our recent work on sweep cover problem, and introduce some interesting ideas in this field.