
ZHIHAN GAO, Department of Combinatorics and Optimization, University of Waterloo
An LP-based $3/2$ -approximation algorithm for the graphic s - t path TSP

The Traveling Salesman Problem (TSP) is one of the most famous problems in Combinatorial Optimization. Given two vertices s, t in a graph G with unit edge-cost, the graphic s - t path TSP is to find a minimum-cost Hamiltonian path from s to t in the metric completion of G . For the graphic s - t path TSP, we design a new LP-based algorithm, which achieves the best approximation factor of 1.5. The algorithm is based on the idea of narrow cuts due to An, Kleinberg, and Shmoys (STOC 2012). It partly answers an open question of Sebő (IPCO 2013).