Deterministic approximation algorithms and PTAS for the Traveling Salesman Problem and its generalizations

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Abstract. We consider the classic Traveling Salesman Problem (TSP) and its generalization Cycle Cover Problem (CCP) also known as Multiple TSP. The both problems are strongly NP-hard even being formulated in the Euclidean plane. Also, it is known that their general settings can not be approximated in polynomial time with accuracy $O(2^n)$. Meanwhile, metric and Euclidean cases of the problems are approximable much better. The lecture deals both classic and very recent approximation results.