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Building bridges between convex regions. (English) Zbl 1022.52003

Authors’ abstract: In the Euclidean traveling salesman and buyers problem (TSBP), we are given a set of convex regions in $d$-dimensional space, and we wish to find a minimum-cost tour that visits all the regions. The cost of a tour depends on the length of the tour itself and on the distance that buyers within each region need to travel to meet the salesman. We show that constant-factor approximations to the TSBP and several similar problems can be obtained by visiting the centers of the smallest enclosing spheres of the regions.

Reviewer: Mihai Cipu (Bucureşti)

MSC:
52A20 Convex sets in $n$ dimensions (including convex hypersurfaces)
52A40 Inequalities and extremum problems involving convexity in convex geometry

Keywords:
Euclidean TSP; TSP with neighborhoods; traveling salesman and buyers problem; approximation algorithm

Full Text: DOI

References:

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