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A PROJECTION-TYPE METHOD FOR SOLVING VARIOUS WEBER PROBLEMS

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摘要
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Abstract This paper investigates various Weber problems including unconstrained Weber problems and constrained Weber problems under l_1,l_2 and l_∞-norms. First with a transformation technique various Weber problems are turned into a class of monotone linear variational inequalities. By exploiting the favorable structure of these variational inequalities, we present a new projection-type method for them. Compared with some other projection-type methods which can solve monotone linear variational inequality, this new projection-type method is simple in numerical implementations and more efficient for solving this class of problems; Compared with some popular methods for solving unconstrained Weber problem and constrained Weber problem, a singularity would not happen in this new method and it is more reliable by using this new method to solve various Weber problems.

Key words Linear variational inequality Various Weber problems Projection-type method Slack technique.

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