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Strongly convergent ball-relaxed CQ algorithm and its application. (Chinese. English summary)
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Summary: In order to solve the split feasibility problem, some previous researchers proposed a ball-relaxed CQ algorithm. Since this algorithm only needs to calculate the projection on the closed balls and does not need to calculate the norm of bounded linear operator, it is easy to implement. However, the ball-relaxed CQ algorithm only has weak convergence in infinite dimensional Hilbert spaces. In this paper, firstly, a strongly convergent ball-relaxed CQ algorithm is constructed. Under weaker conditions, the strong convergence of the algorithm is proved. Secondly, the algorithm is applied to the projection problem on a class of closed convex sets. Finally, numerical experiments verify the effectiveness of the proposed algorithm.

MSC:
90C25 Convex programming
90C30 Nonlinear programming

Keywords:
split feasibility problem; CQ algorithm; strong convergence; strongly convex function

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