An approximately active search algorithm for mathematical programs with linear complementarity constraints.

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Abstract: We propose a piecewise sequential quadratic programming (PSQP) type algorithm for solving mathematical programs with linear complementarity constraints. The algorithm uses a method of approximately active search and introduces the idea of accptable descent faces. The main advantages of the new algorithm are that it is globally convergent under mild conditions and without requiring any constraint qualification to hold, and the subproblems are convex quadratic programs, not general NLP. Numerical results will be presented to show the effectiveness of the algorithm.