

**Zhou, Zhengyong; Yu, Bo****A smoothing homotopy method based on Robinson's normal equation for mixed complementarity problems.** (English) [Zbl 1231.90360](#)

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Summary: In this paper, a probability-one homotopy method for solving mixed complementarity problems is proposed. The homotopy equation is constructed by using the Robinson's normal equation of mixed complementarity problem and a  $C^2$ -smooth approximation of projection function. Under the condition that the mixed complementarity problem has no solution at infinity, which is a weaker condition than several well-known ones, existence and convergence of a smooth homotopy path from almost any starting point in  $\mathbb{R}^n$  are proven. The homotopy method is implemented in Matlab and numerical results on the MCPLIB test collection are given.

**MSC:**[90C33](#) Complementarity and equilibrium problems and variational inequalities (finite dimensions) (aspects of mathematical programming)Cited in **2** Documents[65D10](#) Numerical smoothing, curve fitting[65H20](#) Global methods, including homotopy approaches to the numerical solution of nonlinear equations**Keywords:**[complementarity problems](#); [smoothing](#); [homotopy method](#)**Software:**[Matlab](#)**Full Text:** [DOI](#)