A Nonsmooth L-M Method for the Solution of the Generalized Complementarity Problem¤

Ma Fengming[y] Wang Yiju[z]

Abstract. In this paper, the generalized complementarity problem (GNCP) de¯ned on a polyhedral cone is reformulated as a system of nonsmooth equations. Based on the this reformulation, the famous Levenberg-Marquardt (L-M) algorithm can be used for its solution. Theoretical results that relate the stationary points of the merit function to the solution of the GNCP are presented. Under milder assumptions, we show that the L-M algorithm are both globally and superlinearly convergent.

Keywords. GNCP, stationary point, superlinear convergence

AMS subject classi¯cations. 65H10, 90C33, 90C30

Abbreviated Title A Nonsmooth L-M Method for GNCP

¤This subject is supported by the Natural Science Foundation of China(10171055) and Shandong Province(Q99A11).

[y]Institute of Operations Research, Qufu Normal University, Qufu Shandong, 273165

[z]School of Mathematics and Computer Science, Nanjing Normal University, Nanjing Jiangsu, 210097, and Institute of Operations Research, Qufu Normal University, Qufu Shandong, 273165, e-mail: yiju66@ji-public.sd.cninfo.net