Electronic Journal: Southwest Journal of Pure and Applied Mathematics
Internet: http://rattler.cameron.edu/swjpam.html
ISSN 1083-0464
Vol. No. 02, 1996, pp. 55–59
Submitted: September 23, 1996. Published: November 7, 1996.

ON THE MONOTONE CONVERGENCE OF IMPLICIT NEWTON-LIKE METHODS

Ioannis K. Argyros

Abstract. In this study, we examine the convergence of implicit Newton-like methods to a solution of a nonlinear equation on a partially ordered topological space. We generate two sequences, one increasing and one decreasing that enclose a solution of the nonlinear equation. Finally, we provide an example that shows that our method converges whereas the standard explicit Newton-like method does not.

(1991) A.M.S. Subject Classification Codes. 65J15, 65B05, 47H17, 49D15.

Key Words and Phrases. Newton-like method, monotone convergence, partially ordered topological space.

Cameron University, Lawton, Oklahoma
E-mail Address: ioannisa@cameron.edu