Electronic Journal: Southwest Journal of Pure and Applied Mathematics
Internet: http://rattler.cameron.edu/swjpam.html
ISSN 1083-0464
Vol. No. 02, 1996, pp. 48–54
Submitted: August 11, 1996. Published: October 15, 1996.

WEAK CONDITIONS FOR THE CONVERGENCE OF ITERATIONS TO SOLUTIONS OF EQUATIONS ON PARTIALLY ORDERED TOPOLOGICAL SPACES

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Abstract. We provide sufficient conditions for the monotone convergence of Newton-like methods to solutions of nonlinear operator equations on partially ordered topological spaces. We assume conditions weaker than standard Lipschitz-like conditions to produce two iterations, one increasing and one decreasing, that enclose and converge to a solution of an equation. Finally examples are given to show that our results apply where previous ones fail.

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

Key Words and Phrases. Partially ordered topological space, monotone convergence, fixed point, Newton-like methods.

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