Electronic Journal: Southwest Journal of Pure and Applied Mathematics
Internet: http://rattler.cameron.edu/swjpam.html
ISSN 1083-0464
Issue 1, July 1999, pp. 51–57.
Submitted: July 19, 1998. Published: July 1 1999.

A MONOTONE CONVERGENCE THEOREM FOR NEWTON-LIKE METHODS USING HYPOTHESES ON DIVIDED DIFFERENCES OF ORDER TWO

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Abstract. In this study we approximate a solution of a nonlinear operator equation on a partially ordered topological space by enclosing it by two monotonically convergent Newton-like sequences. In contrast to earlier results we use hypotheses on bilinear instead of on linear operators. This way we establish different sufficient convergence conditions for Newton-like methods than before. Hence, our results have theoretical and practical value.

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

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

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