

ON THE SEMILOCAL CONVERGENCE OF STEFFENSEN'S METHOD

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Abstract. We provide a semilocal convergence analysis of a general Steffensen's method in a Banach space setting. In some interesting special cases, we expand the applicability of this method. A numerical example involving the solution of a nonlinear two boundary problem is also provided in this study.

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Key words. Banach space, Steffensen's method, Newton's method, semilocal convergence analysis, majorizing sequence, Newton-Kantorovich hypothesis.

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