Convergence and numerical analysis of a family of two step Steffensen's methods

We provide sufficient conditions for the semilocal convergence of a family of two step Steffensen's iterative methods on a Banach space. The main advantage of this family is it does not need to evaluate neither any Fréchet derivative nor any bilinear operator, but having a high speed of convergence. Some numerical experiments are also presented.

Key Words. Non-linear equations, iterative methods, semilocal convergence.

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