

On a Moser-Kurchatov type method for nonlinear equations

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A new Kurchatov-type method for the approximation of nonlinear equations in Banach spaces is proposed and analyzed. We consider a modification of Moser's method [1] applied to the Kurchatov method [4] to avoid the calculation of inverse. Therefore, the proposed method is an inverse free Kurchatov-type method. Another advantage of this method is that it can be also applied to non differentiable operators because it is defined from divided difference operators [5]. The convergence analysis of this method is carried out using a technique based on relations of recurrence [2].

The conclusion is that the method improves the applicability of both Newton and kurchatov methods [3] having the same order of convergence.

References

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