

عنوان مقاله:

On an efficient family with memory with order of convergence for solving nonlinear equations

محل انتشار:

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خلاصه مقاله:

in this paper, we present an i-point, $i=1,2,3,4$ with memory methods for solving nonlinear equations is proposed. The methodology is based on zheng et al. family methods and devoted to the improvement of the existing derivative free methods without memory proposed by zheng et al. to achieve this goal a parameter is introduced which is calculated with the help of newton's interpolatory polynomial. the self-accelerating parameter has the property of simple structure and easy calculation, which do not increase the number of evaluations from 2.4.8 and 16 to 3.6.12 and 24, respectively without any extra evaluation. another advantage of the new methods is this fact that they remove the severe condition $f(z) \neq 0$ in a neighborhood of the required root imposed on newton's method. numerical examples and the comparison with existing methods are included to confirm theoretical results and high computational efficiency.

کلمات کلیدی:

nonlinear equations, methods with memory acceleration of convergence, efficiency index

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