Ezquerro, J. A.; Grau, A.; Grau-Sánchez, M.; Hernández, M. A.
Construction of derivative-free iterative methods from Chebyshev’s method. (English)
[Zbl 1269.65050]

From authors’ abstract: From some modifications of Chebyshev’s method, a uniparametric family of iterative methods is considered whose members are more efficient than Newton’s method. Two iterative methods are constructed in a similar way as the secant method is constructed from Newton’s method. These iterative methods do not use derivatives in their algorithms, and one of them is more efficient than the secant method that is the classical method with this feature.

Reviewer: Ludwig Kohaupt (Berlin)

MSC:
65J15 Numerical solutions to equations with nonlinear operators
47J25 Iterative procedures involving nonlinear operators
65H05 Numerical computation of solutions to single equations

Keywords:
divided differences; order of convergence; nonlinear equation; secant method; iterative method; computational efficiency; efficiency index; Chebyshev’s method; Newton’s method; algorithms

Full Text: DOI

References:

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