Chun, Changbum; Neta, Beny
On the new family of optimal eighth order methods developed by Lotfi et al. (English)

Summary: In [ibid. 68, No. 2, 261–288 (2015; Zbl 1309.65054)], T. Lotfi et al. have developed a new family of optimal order eight for the solution of nonlinear equations. They have experimented with 3 members of the family and compared them to other eighth order methods. One of the best known eight order method was not included. They also did not mention the best choice of parameters in the methods used and why. The basins of attraction were given for several examples without a quantitative comparison. It will be shown how to choose the best parameters in all these methods, and to quantitatively compare the methods.

MSC:
65H05 Numerical computation of solutions to single equations

Keywords:
iterative methods; order of convergence; basin of attraction; extraneous fixed points

Full Text: DOI

References:
1478.65037


[27] Chun, C; Neta, B; Kim, S, On jarratt’s family of optimal fourth-order iterative methods and their dynamics, Fractals, 22, 1450013, (2014) · doi:10.1142/S0218348X14500133


[34] Chun, C, Neta, B, Basin of attraction for several third order methods to find multiple roots of nonlinear equations, submitted to Appl. Math. Comput., accepted for publication · Zbl 1295.65067

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