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Summary: Recently, L. Brutman and E. Passow [Constructive Approximation 13, No. 3, 381–391 (1997; Zbl 0886.41004)] considered Newman-type rational interpolation to $|x|$ induced by arbitrary sets of symmetric nodes in $[-1, 1]$ and gave the general estimation of the approximation error. By their methods, one could establish the exact order of approximation for some special nodes. In the present note, we consider the sets of interpolation nodes obtained by adjusting the Chebyshev roots of the second kind on the interval $[0, 1]$ and then extend this set to $[-1, 1]$ in a symmetric way. We show that in this case the exact order of approximation is $O\left(\frac{1}{n^2}\right)$.

MSC:
41A20 Approximation by rational functions
41A05 Interpolation in approximation theory
41A25 Rate of convergence, degree of approximation

Keywords:
Newman-type rational interpolation; exact order of approximation

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