

On the performances of IMZSS2 method for bounding polynomial zeros simultaneously

ABSTRACT

This paper describes the extension of the interval symmetric single-step method IZSS2, namely the interval midpoint symmetric single-step IMZSS2 method which performs a forward-backward-forward step. The algorithm IMZSS2 introduced new reusable correctors where we always update the midpoints of the intervals at every step of the method. We will display the numerical results comparing the CPU times and number of iterations of both methods. The results show that the IMZSS2 method performs better both in CPU times and number of iterations as can be seen in the accompanied figures.

Keyword: Convergence; Inclusion; Interval analysis; Symmetric single-step