

ON SEMILOCAL CONVERGENCE ANALYSIS OF THE INVERSE WEIERSTRASS METHOD FOR SIMULTANEOUS COMPUTING OF POLYNOMIAL ZEROS*

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Abstract

In this paper we study the semi-local convergence of the Inverse Weierstrass iterative method for simultaneous approximation of polynomial zeros. We present a semi-local convergence theorem with computationally verifiable initial conditions. Several numerical examples are provided to show the practical applications of the presented theoretical results.

MSC: 65H04, 65H05

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1 Introduction

Let $P(z)$ be a monic polynomial of degree $n \geq 2$

$$P(z) = a_0 + a_1z + \dots + a_{n-1}z^{n-1} + z^n, \quad (1)$$

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