NEW LOCAL CONVERGENCE THEOREMS FOR THE INVERSE WEIERSTRASS METHOD FOR SIMULTANEOUS APPROXIMATION OF POLYNOMIAL ZEROS*

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Abstract

In this work we establish new local convergence theorems with error estimates for the Inverse Weierstrass iterative method for simultaneous approximations of polynomial zeros. Our approach enlarges the convergence radius and improves the known local convergence results. Numerical examples are also provided.

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1 Introduction

Let $P(z)$ be a monic polynomial

$$P(z) = a_0 + a_1 z + \ldots + a_{n-1} z^{n-1} + z^n, \tag{1}$$