FPML

Thomas R. Cameron
Davidson College

Abstract

We present a novel modification of Laguerre's method that results in a method for the concurrent approximation of all roots of a univariate polynomial. Our method has strong virtues including fourth-order convergence that is observed in practice and belonging to the class of embarrassingly parallel algorithms. A Fortran 90 implementation of our algorithm is available online and comparisons with several other software are provided to show the effectiveness of our approach.

Introduction

Let $p(\lambda)$ be a polynomial of degree m and denote by $(z_1, \ldots, z_m)$ the current approximations to the roots $r_1, \ldots, r_m$ of $p(\lambda)$.

Something else

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email thcameron@davidson.edu

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