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FINDING ZEROES OF ANALYTIC FUNCTIONS

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Abstract of Report Talk: We examine the problem of finding the zeroes of analytic functions. Shortcomings in conventional techniques, especially the amazingly beautiful, but equally frightening fractals that arise from the use of Newton's method, motivate us to develop a new method. With the use of techniques from complex analysis and algebra we are able to find all the zeroes of an analytic function inside a contour on which we are given the values of the function and its derivative, provided the function is non-zero on the contour. In addition, we develop techniques to determine whether or not a function has zeroes of a higher order inside our contour. [WJ05170950]

[Joint work with Matthew R. Barrett, Amber D. Meyerratken]

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