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   Soggetti   Fix-point estimation
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   Lingua di pubblicazione   Inglese

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   Nota di bibliografia   Includes bibliographical references (p. 197-204) and index.

   Nota di contenuto Basic Concepts -- Iterative Processes and Point Estimation Theory --
                      Point Estimation of Simultaneous Methods -- Families of Simultaneous
                      Methods of Higher Order: Part I -- Families of Simultaneous Methods of
                      Higher Order: Part II.

   Sommario/riassunto This book sets out to state computationally verifiable initial conditions
                      for predicting the immediate appearance of the guaranteed and fast
                      convergence of iterative root finding methods. Attention is paid to
                      iterative methods for simultaneous determination of polynomial zeros
                      in the spirit of Smale's point estimation theory, introduced in 1986.
                      Some basic concepts and Smale's theory for Newton's method, together
                      with its modifications and higher-order methods, are presented in the
                      first two chapters. The remaining chapters contain the recent author's
                      results on initial conditions guaranteing convergence of a wide class of
                      iterative methods for solving algebraic equations. These conditions are
                      of practical interest since they depend only on available data, the
                      information of a function whose zeros are sought and initial
                      approximations. The convergence approach presented can be applied
                      in designing a package for the simultaneous approximation of
                      polynomial zeros.