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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 guaranteeing 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.