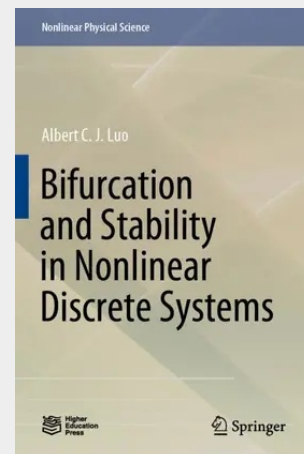


Bifurcation and Stability in Nonlinear Discrete Systems

This book focuses on bifurcation and stability in nonlinear discrete systems, including monotonic and oscillatory stability. It presents the local monotonic and oscillatory stability and bifurcation of period-1 fixed-points on a specific eigenvector direction, and discusses the corresponding higher-order singularity of fixed-points. Further, it explores the global analysis of monotonic and oscillatory stability of fixed-points in 1-dimensional discrete systems through 1-dimensional polynomial discrete systems. Based on the Yin-Yang theory of nonlinear discrete systems, the book also addresses the dynamics of forward and backward nonlinear discrete systems, and the existence conditions of fixed-points in said systems. Lastly, in the context of local analysis, it describes the normal forms of nonlinear discrete systems and infinite-fixed-point discrete systems. Examining nonlinear discrete systems from various perspectives, the book helps readers gain a better understanding of the nonlinear dynamics of such systems.

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