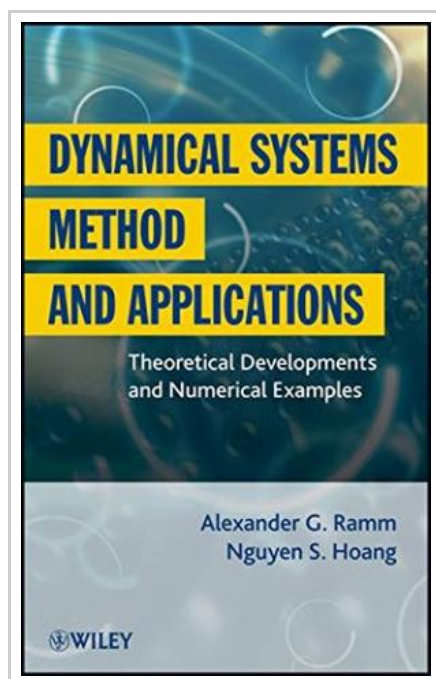




Dynamical Systems Method and Applications: Theoretical Developments and Numerical Examples (Hardback)

By Alexander G. Ramm, Nguyen S. Hoang

John Wiley Sons Inc, United States, 2012. Hardback. Book Condition: New. 236 x 163 mm. Language: English . Brand New Book. Dynamical Systems Method (DSM) is a powerful general method for solving operator equations. These equations can be linear or nonlinear, well-posed or ill-posed. The book presents a systematic development of the DSM, and theoretical results are illustrated by a number of numerical examples, which are of independent interest. These include: stable differentiation of noisy data, stable solution of ill-conditioned linear algebraic systems, stable solution of Fredholm and Volterra integral equations of the first kind, stable inversion of the Laplace transform from the real axis, solution of nonlinear integral equations, and other examples. Chapter coverage includes ill-posed problems; well-posed problems; linear ill-posed problems; inequalities; monotone operators; general nonlinear operator equations; operators satisfying a spectral assumption; Banach spaces; Newton-type methods without inversion of the derivative; unbound operators; nonsmooth operators; DSM as a theoretical tool; iterative methods; numerical problems arising in applications; auxiliary results from analysis; a discrepancy principle for solving equations with monotone operators; solving linear equations; stable numerical differentiation; deconvolution problems; numerical implementation; and stable solution to ill-conditioned linear algebraic systems.



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