



Stability of Linear Delay Differential Equations: A Numerical Approach with MATLAB

By Dimitri Breda, Stefano Maset, Rossana Vermiglio

Springer-Verlag New York Inc., United States, 2014. Paperback. Book Condition: New. 2015 ed.. 236 x 160 mm. Language: English . Brand New Book. This book presents the authors recent work on the numerical methods for the stability analysis of linear autonomous and periodic delay differential equations, which consist in applying pseudospectral techniques to discretize either the solution operator or the infinitesimal generator and in using the eigenvalues of the resulting matrices to approximate the exact spectra. The purpose of the book is to provide a complete and self-contained treatment, which includes the basic underlying mathematics and numerics, examples from population dynamics and engineering applications, and Matlab programs implementing the proposed numerical methods. A number of proofs is given to furnish a solid foundation, but the emphasis is on the (unifying) idea of the pseudospectral technique for the stability analysis of DDEs. It is aimed at advanced students and researchers in applied mathematics, in dynamical systems and in various fields of science and engineering, concerned with delay systems. A relevant feature of the book is that it also provides the Matlab codes to encourage the readers to experience the practical aspects. They could use the codes to test the theory and...



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