1. Record Nr. UNINA9910964618203321

| | |
|---|---|
| Autore | Stoer Josef |
| Titolo | Introduction to Numerical Analysis / / by J. Stoer, R. Bulirsch |
| Pubbl/distr/stampa | New York, NY : , : Springer New York : , : Imprint : Springer, , 1993 |
| ISBN | 9781475722727<br>1475722729 |
| Edizione | [2nd ed. 1993.] |
| Descrizione fisica | 1 online resource (XIII, 660 p.) |
| Collana | Texts in Applied Mathematics, , 2196-9949 ; ; 12 |
| Classificazione | 65-01 |
| Disciplina | 518 |
| Soggetti | Numerical analysis<br>Numerical Analysis |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Bibliographic Level Mode of Issuance: Monograph |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | 1 Error Analysis -- 2 Interpolation -- 3 Topics in Integration -- 4 Systems of Linear Equations -- 5 Finding Zeros and Minimum Points by Iterative Methods -- 6 Eigenvalue Problems -- 7 Ordinary Differential Equations -- 8 Iterative Methods for the Solution of Large Systems of Linear Equations. Some Further Methods -- General Literature on Numerical Methods. |
| Sommario/riassunto | On the occasion of this new edition, the text was enlarged by several new sections. Two sections on B-splines and their computation were added to the chapter on spline functions: Due to their special properties, their flexibility, and the availability of well-tested programs for their computation, B-splines play an important role in many applications. Also, the authors followed suggestions by many readers to supplement the chapter on elimination methods with a section dealing with the solution of large sparse systems of linear equations. Even though such systems are usually solved by iterative methods, the realm of elimination methods has been widely extended due to powerful techniques for handling sparse matrices. We will explain some of these techniques in connection with the Cholesky algorithm for solving positive definite linear systems. The chapter on eigenvalue problems was enlarged by a section on the Lanczos algorithm; the sections on the LR and QR algorithm were rewritten and now contain a description of implicit shift techniques. In order to some extent take |

into account the progress in the area of ordinary differential equations, a new section on implicit differential equa- tions and differential-algebraic systems was added, and the section on stiff differential equations was updated by describing further methods to solve such equations.