1. Record Nr.   UNINA9910813308603321

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   Titolo   The mathematica guidebook for numerics / / Michael Trott

   Pubbl/distr/stampa   New York, NY, : Springer, c2006

   ISBN   1-280-65636-0
                        9786610656363
                        0-387-28814-7

   Edizione   [1st ed. 2006.]

   Descrizione fisica   1 online resource (1243 p.)

   Disciplina   510.285/536

   Soggetti   Algebra - Data processing

   Lingua di pubblicazione Inglese

   Formato   Materiale a stampa

   Livello bibliografico Monografia

   Note generali   Description based upon print version of record.

   Nota di contenuto   Introduction and Orientation -- I. Numerical Computations: Remarks --
                        Approximate Numbers -- Fitting and Interpolating Functions --
                        Compiled Programs -- Linear Algebra -- Fourier Transforms --
                        Numerical Functions and Their Options -- Sums and Products --
                        Integration -- Solution of Equations -- Minimization -- Solution of
                        Differential Equations -- Two Applications -- Overview.-Exercises --
                        References -- II. Computation with Exact Numbers: Remarks --
                        Divisors and Multiples -- Number Theory Functions -- Combinatorial
                        Functions -- Euler, Bernoulli, and Fibonacci Numbers -- Overview --
                        Exercises -- References -- Index.

   Sommario/riassunto   Mathematica is today's most advanced technical computing system,
                        featuring a rich programming environment, two-and three-dimensional
                        graphics capabilities and hundreds of sophisticated, powerful
                        programming and mathematical functions using state-of-the-art
                        algorithms. Combined with a user-friendly interface and a complete
                        mathematical typesetting system, Mathematica offers an intuitive,
                        easy-to-handle environment of great power and utility. "The
                        Mathematica GuideBook for Numerics" (text and code fully tailored for
                        Mathematica 5.1) concentrates on Mathematica's numerical
                        mathematics capabilities. The available types of arithmetic (machine,
                        high-precision, and interval) are introduced, discussed, and put to use.
                        Fundamental numerical operations, such as compiling programs, fast

Fourier transforms, minimization, numerical solution of equations, ordinary/partial differential equations are analyzed in detail and are applied to a large number of examples in the main text and solutions to the exercises.