1. **Record Nr.**   UNINA9910895922003321

Titolo	Amtsblatt fur den Landkreis Schwandorf / Hrsg. Landratsamt Schwandorf
Pubbl/distr/stampa	Schwandorf, : Landratsamt, 2006-
Descrizione fisica	Online-Ressource
Classificazione	8,1
Disciplina	070
	340
	914.3
	943
Soggetti	Zeitschrift
	Amtliche Publikation
Lingua di pubblicazione	Tedesco
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Fortsetzung der Druck-Ausgabe

2. Record Nr.	UNINA9910254635603321
Autore	Stickler Benjamin A.
Titolo	Basic Concepts in Computational Physics / / by Benjamin A. Stickler, Ewald Schachinger
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-27265-9
Edizione	[2nd ed. 2016.]
Descrizione fisica	1 online resource (XVI, 409 p. 95 illus.)
Disciplina	530.1
Soggetti	Physics
	Applied mathematics
	Engineering mathematics
	Computer science - Mathematics
	Chemistry, Physical and theoretical
	Numerical and Computational Physics, Simulation
	Mathematical and Computational Engineering
	Computational Mathematics and Numerical Analysis
	Theoretical and Computational Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes Index.
Nota di contenuto	Some Basic Remarks -- Part I Deterministic Methods -- Numerical Differentiation -- Numerical Integration -- The KEPLER Problem -- Ordinary Differential Equations – Initial Value Problems -- The Double Pendulum -- Molecular Dynamics -- Numerics of Ordinary Differential Equations - Boundary Value Problems -- The One-Dimensional Stationary Heat Equation -- The One-Dimensional Stationary SCHRÖDINGER Equation -- Partial Differential Equations -- Part II Stochastic Methods -- Pseudo Random Number Generators -- Random Sampling Methods -- A Brief Introduction to Monte-Carlo Methods -- The ISING Model -- Some Basics of Stochastic Processes -- The Random Walk and Diffusion Theory -- MARKOV-Chain Monte Carlo and the POTTS Model -- Data Analysis -- Stochastic Optimization -- Appendix: The Two-Body Problem -- Solving Non-Linear Equations. The NEWTON Method -- Numerical Solution of Systems of Equations --

Fast Fourier Transform -- Basics of Probability Theory -- Phase Transitions -- Fractional Integrals and Derivatives in 1D -- Least Squares Fit -- Deterministic Optimization.

Sommario/riassunto	This new edition is a concise introduction to the basic methods of computational physics. Readers will discover the benefits of numerical methods for solving complex mathematical problems and for the direct simulation of physical processes. The book is divided into two main parts: Deterministic methods and stochastic methods in computational physics. Based on concrete problems, the first part discusses numerical differentiation and integration, as well as the treatment of ordinary differential equations. This is extended by a brief introduction to the numerics of partial differential equations. The second part deals with the generation of random numbers, summarizes the basics of stochastics, and subsequently introduces Monte-Carlo (MC) methods. Specific emphasis is on MARKOV chain MC algorithms. The final two chapters discuss data analysis and stochastic optimization. All this is again motivated and augmented by applications from physics. In addition, the book offers a number of appendices to provide the reader with information on topics not discussed in the main text. Numerous problems with worked-out solutions, chapter introductions and summaries, together with a clear and application-oriented style support the reader. Ready to use C++ codes are provided online.