1. Record Nr. UNINA9910754899903321

Autore	Han Je-Chin <1946->
Titolo	Analytical heat transfer / / Je-Chin Han, Lesley Wright
Pubbl/distr/stampa	Boca Raton, FL : , : CRC Press, Taylor & Francis Group, , [2022] ©2022
ISBN	1-00-316448-X 1-000-59729-6 1-003-16448-X 1-000-59734-2
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (597 pages)
Disciplina	621.402/2
Soggetti	Heat - Transmission
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	"Analytical Heat Transfer explains how to analyze and solve conduction, convection, and radiation heat transfer problems. It enables students to tackle complex engineering heat transfer problems prevalent in practice. Covering heat transfer in high-speed flows and unsteady highly turbulent flows, the book also discusses enhanced heat transfer in channels, heat transfer in rotating channels, numerical modeling for turbulent flow heat transfer, and thermally developing heat transfer in a circular tube. The second edition features new content on Duhamel's superposition method, Green's function method for transient heat conduction, finite-difference method for steady state and transient heat conduction in cylindrical coordinates, and laminar mixed convection. It includes three new chapters on boiling, condensation, and heat exchanger analysis, in addition to end-of-chapter problems. The book bridges the gap between basic heat transfer undergraduate courses and advanced heat transfer graduate courses for a single semester of intermediate heat transfer; advanced conduction/convection heat transfer; or radiation heat transfer. Features : focuses on analyzing and solving classic heat transfer problems in conduction, convection, and radiation, covers 3-D view

	factor evaluation, combined radiation with conduction and/or convection, gas radiation optically thin and optically thick limits, and thermally developing heat transfer in a circular tube. Also features updated content and new chapters on mass and heat transfer analogy, laminar-turbulent transitional heat transfer, unsteady highly turbulent flows, enhanced heat transfer in channels, heat transfer in rotating channels, and numerical modeling for turbulent flow heat transfer. Provides step-by-step mathematical formula derivations, analytical solution procedures, and demonstration examples. Includes end-of-chapter problems with an accompanying Solutions Manual for instructors. This book is ideal for undergraduate and graduate students studying basic heat transfer and advanced heat transfer"--

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Record Nr.	UNINA9910997096203321
Autore	Chen Nan
Titolo	Stochastic Methods for Modeling and Predicting Complex Dynamical Systems : Uncertainty Quantification, State Estimation, and Reduced-Order Models / / by Nan Chen
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031819247 3031819241
Edizione	[2nd ed. 2025.]
Descrizione fisica	1 online resource (369 pages)
Collana	Synthesis Lectures on Mathematics & Statistics, , 1938-1751
Disciplina	515.39
Soggetti	Stochastic processes Stochastic models System theory Mathematics Artificial intelligence - Data processing Computer science Stochastic Systems and Control Stochastic Modelling Complex Systems Applications of Mathematics Data Science Models of Computation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa

Livello bibliografico	Monografia
Nota di contenuto	Stochastic Toolkits -- Introduction to Information Theory -- Basic Stochastic Computational Methods -- Simple Gaussian and Non-Gaussian SDEs -- Data Assimilation -- Optimal Control -- Prediction -- Data-Driven Low-Order Stochastic Models -- Conditional Gaussian Nonlinear Systems -- Parameter Estimation with Uncertainty Quantification -- Combining Stochastic Models with Machine Learning -- Instruction Manual for the MATLAB Codes.
Sommario/riassunto	This second edition is an essential guide to understanding, modeling, and predicting complex dynamical systems using new methods with stochastic tools. Expanding upon the original book, the author covers a unique combination of qualitative and quantitative modeling skills, novel efficient computational methods, rigorous mathematical theory, as well as physical intuitions and thinking. The author presents mathematical tools for understanding, modeling, and predicting complex dynamical systems using various suitable stochastic tools. The book provides practical examples and motivations when introducing these tools, merging mathematics, statistics, information theory, computational science, and data science. The author emphasizes the balance between computational efficiency and modeling accuracy while equipping readers with the skills to choose and apply stochastic tools to a wide range of disciplines. This second edition includes updated discussion of combining stochastic models with machine learning and addresses several additional topics, including importance sampling, regression, and maximum likelihood estimate. The author also introduces a new chapter on optimal control. In addition, this book: Covers key topics in modeling and prediction, such as extreme events, high-dimensional systems, and multiscale features Discusses applications for various disciplines including math, physics, engineering, neural science, and ocean science Includes MATLAB® codes for the provided examples to help readers better understand and apply the concepts About the Author Nan Chen, Ph.D., is an Associate Professor at the Department of Mathematics, University of Wisconsin-Madison. He is also a faculty affiliate of the Institute for Foundations of Data Science.