



2014, X, 128 p. 94 illus., 84 illus. in color.

 Printed book**Softcover**

- ▶ 49,99 € | £44.99 | \$69.99
- ▶ *53,49 € (D) | 54,99 € (A) | CHF 67.00

 eBook

Available from your library or

- ▶ springer.com/shop

 MyCopy

Printed eBook for just

- ▶ € | \$ 24.99
- ▶ springer.com/mycopy

J. Tanimoto

Mathematical Analysis of Environmental System

- ▶ Systematic explanation on how a reader obtains his/her result by mentioning from theory to practical numerical procedure
- ▶ Numerous colorful figures hand-drawn by the author help readers' intuitive understanding
- ▶ Exercises help comprehensive understanding of the readers, and also support their self-learning

This book is for all graduate students who are specializing in any environmental issue and who wish to grasp the fundamentals of physics that are required in various fields of science and engineering. The book provides the structural concept of the system state equation and its dynamics, which can be applicable to numerical solutions in several important areas such as heat and mass transfer and fluid dynamics. As a first step, there is a description of how to solve a linear system by conducting an analysis of temperature distribution in an infinite soil as a practical example. This exercise helps readers to fully understand what time and space discretizations are, and how actual numerical solutions should work. Because the concept of the system state equation relies on a vector–matrix form, the book shows how that particular form is applicable to other practical procedures: linear multi regression analysis, the least square method, and others. The book also gives the solution to non-linear dynamical systems and their applications. Although this book may appear to take an unusual approach, the author believes it will be inspiring and greatly helpful for the beginner who seeks a solid understanding of the basis of mathematics and physics for any environmental problems.



Order online at springer.com ▶ or for the Americas call (toll free) 1-800-SPRINGER ▶ or email us at: orders-ny@springer.com. ▶ For outside the Americas call +49 (0) 6221-345-4301 ▶ or email us at: orders-hd-individuals@springer.com.

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with * include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with ** include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted.