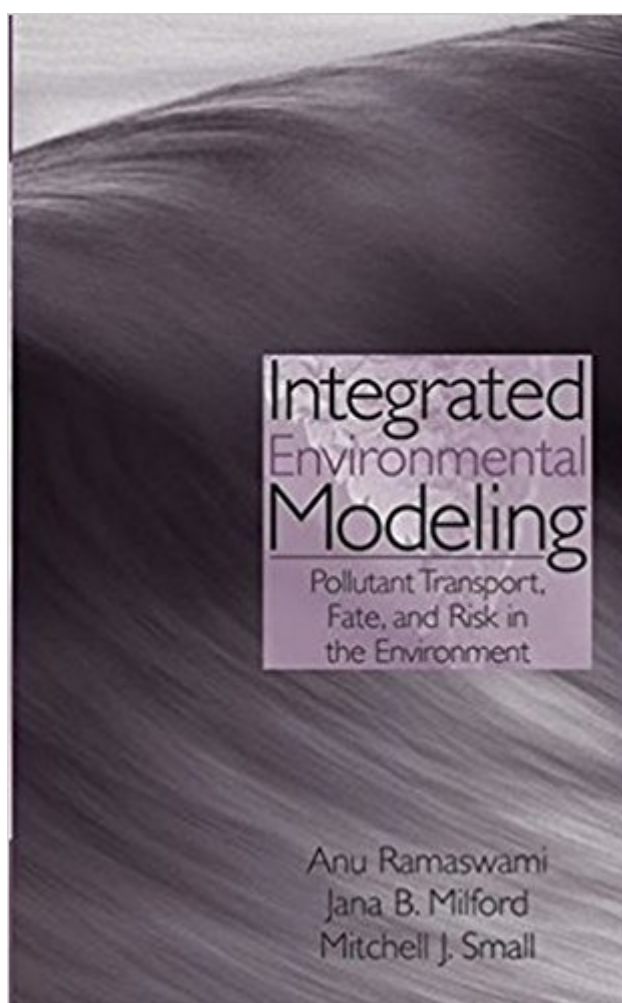


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Integrated Environmental Modeling: Pollutant Transport, Fate, And Risk In The Environment



Synopsis

A unified presentation of environmental model development, implementation, and testing Integrated Environmental Modeling teaches model development, model implementation, and model testing skills in a unified manner, crosscutting the three "media" comprising environmental systems—air, water, and soil—by focusing on parallels and similarities between them, and introducing a new generation of multimedia models. No other single volume offers comprehensive coverage of chemical transport and fate in all three environmental media, including the resulting impacts on the biosphere and human health, with a focus on the fundamental processes underlying environmental modeling. Integrated Environmental Modeling provides broad-based training in the development of pollutant transport and fate models in air, water, and soil, with a focus on five essential competencies: Understanding the fundamental process principles that govern contaminant transport and transformations in multimedia environments, emphasizing the parallels and links between different media Learning model development skills, starting from the simplest conceptual models and building more complex and realistic models that couple component process modules at the appropriate spatial and temporal scales of resolution Using statistical methods and data sources to estimate input parameters and characterize model sensitivity and uncertainty Gaining hands-on experience with computer-aided implementation and evaluation of fate and transport models using realistic case study examples Applying fate and transport models to evaluate pollutant interactions with the biosphere, particularly in human exposure modeling and health risk assessment Complete with case studies, Integrated Environmental Modeling is a valuable, single-source tool for senior and graduate students in environmental science and engineering courses on pollutant transport, remediation, and risk assessment, and an essential reference text for professionals in industry, consulting, and government agencies responsible for environmental assessment and risk analysis.

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A unified presentation of environmental model development, implementation, and testing Integrated Environmental Modeling teaches model development, model implementation, and model testing skills in a unified manner, crosscutting the three "media" comprising environmental systems—air, water, and soil—by focusing on parallels and similarities between them, and introducing a new generation of multimedia models. No other single volume offers comprehensive coverage of chemical transport and fate in all three environmental media, including the resulting impacts on the biosphere and human health, with a focus on the fundamental processes underlying environmental modeling. Integrated Environmental Modeling provides broad-based training in the development of pollutant transport and fate models in air, water, and soil, with a focus on five essential competencies: Understanding the fundamental process principles that govern contaminant transport and transformations in multimedia environments, emphasizing the parallels and links between different media Learning model development skills, starting from the simplest conceptual models and building more complex and realistic models that couple component process modules at the appropriate spatial and temporal scales of resolution Using statistical methods and data sources to estimate input parameters and characterize model sensitivity and uncertainty Gaining hands-on experience with computer-aided implementation and evaluation of fate and transport models using realistic case study examples Applying fate and transport models to evaluate pollutant interactions with the biosphere, particularly in human exposure modeling and health risk assessment Complete with case studies, Integrated Environmental Modeling is a valuable, single-source tool for senior and graduate students in environmental science and engineering courses on pollutant transport, remediation, and risk assessment, and an essential reference text for professionals in industry, consulting, and government agencies responsible for environmental assessment and risk analysis.

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Engineering at the University of Colorado at Boulder. She recently served on the National Research Council Committee on Air Quality Management in the United States, and is a member of the editorial advisory board for the Journal Environmental Science & Technology. Mitchell J. Small, PhD, is the H. John Heinz III Professor of Environmental Engineering at Carnegie Mellon University, Pittsburgh, Pennsylvania. He is a Fellow of the Society for Risk Analysis and serves as an associate editor for the Journal Environmental Science & Technology.

I really love this book, which includes almost all mathematical modeling issues in environmental science and engineering. This book is pretty handy for researchers or engineers because of its wide coverage of modeling topics without going too much into details. As a graduate student of one author, I think this book is an excellent textbook for a graduate level course with proper instructions, particularly useful for those who will work on risk assessment or any fate and transport modeling. However, this book is not for beginners. Unless you have taken classes like calculus and beginning probability and statistics and even introductory level of (numerical) modeling, this book might not be good for self-study. And I agree with another reviewer's comment that the presentation of the content could be more user-friendly. Nevertheless, I am very pleased to see a textbook truly about integrated modeling and looking forward to its 2nd edition!

I was very happy when I first encountered this book because the "integrated" nature of environmental modeling is communicated very well throughout the text, something that is missing all other texts on this topic. I tried to use this book as the primary text in an environmental fate and transport graduate course that I teach. I had to demote this to a secondary text after a lot of minor problems - I am still looking for a good environmental transport book. First of all, the table of contents is the worst I have seen in a book that can be used as a textbook - it only lists the chapter titles and there is no mention of the multiple subsections in each chapter (the index is not thorough either). This problem can be easily fixed; I typed up a detailed TOC for my students. The second problem is that the book has no exercises. There are a few problems available from the publishers website but these are only a few and their quality is horrendous. Besides these paltry problems, there is almost no useful instructor support material available. Perhaps a companion book of problems might do the trick (much like Scharzenbach et al.'s Environmental Organic Chemistry book). It really is too bad because this book has the potential to be a classic if these and other minor problems are revised in a newer edition.

I had to get this book for a graduate environmental modelling class I am currently taking. My main opinion of the content itself is that it is adequate. However, in topics such as developing numerical solutions of the governing equations, I feel the material doesn't go deep enough. For example, it introduces the concept of stability, but it does not delve into how it's obtained or go into a lot of detail into what it actually means, which has led to people being a bit confused with it. Also, regarding the package, I was very disappointed in that the book cover seemed to be completely reverse. The front cover is at the end of the book, and also upside down. It seems to be good enough quality but I would have returned it had not needed it for the class immediately.

I had to use this for a grad course alongside "Chemical Fate and Transport" by Hemond. The other book was better by any metric. I really regret having had to buy this one and I'm pretty sure I will always refer to the other one if I ever need to.

I do not know how to write this review since I did not receive it at all

Good book. Covers all the basics of environmental science. I had a class with Dr. Ramaswami, one of the authors. From what I understand each author wrote different parts of the book, but it flows very well. It's definitely one of the better reference books I had to read in graduate school.

This is one of the most poorly written text books I have seen. The book is very hard to use and very poorly formatted. I would not recommend buying it.

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