

## Book review

### **INTEGRATED ENVIRONMENTAL MODELING: POLLUTANT TRANSPORT, FATE, AND RISK IN THE ENVIRONMENT**

Anu Ramaswami, Jana B. Milford, Mitchell J. Small. Wiley, 2005,  
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The subject of environmental modelling has been the focus of much interest in recent years. Improved understanding of pollutant transport processes both within and between individual media has led to the development of integrated modelling approaches that are capable of considering multimedia systems and the subsequent impact of pollutants on the environment. This book attempts to address such integrated environmental assessments from basic phenomena through to complex numerical modelling.

After a general introduction to the subject of environmental pollutant modelling the authors go on to cover, in some detail, the nature of pollutants, use of equilibrium and kinetic approaches to consider intermedia mass transfer and the fundamental transport processes. Each of these subjects benefits from the presentation of a series of examples, which allow the reader to test and deepen their understanding. An overview of various techniques typically employed within environmental models is given, with both numerical solutions for partial

differential equations and non-linear algebraic equations addressed and probabilistic methods and tools covered.

Individual models of pollutant transport in air, groundwater and surface water are then introduced, alongside useful reviews of available computer models. More complex deposition and transformation processes related to atmospheric pollutants and transformation process in water are then addressed. The subject of exposure and risk assessment is considered next; this section of the book is not quite as comprehensive as earlier parts with, for example, ecological risk assessment only briefly touched upon. Finally, a very useful section on the evaluation of model performance is given.

The stated aim of this book is to provide a one-semester treatment of the subject for students wishing to study pollutant fate, transport and impact in air, water and soil systems. This is quite a challenging proposition and while giving detailed coverage of the subject as a whole it is debatable if a student could really cover all the material in such depth over just one course. However, as a reference text for students studying in this area, and for researchers and practitioners alike, this book provides an excellent point of reference with many useful examples and pearls of wisdom.

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