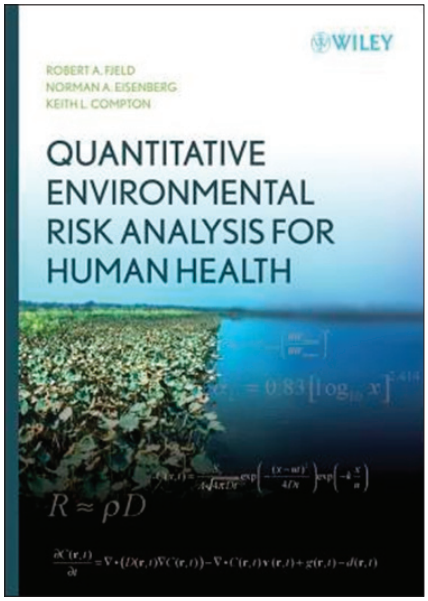
Quantitative Environmental Risk Analysis for Human Health

Fjeld, R., Eisenberg, N. A. & Compton, K. L. (2007)
Hoboken, NJ: John Wiley & Sons, Inc.
390 pp.

This current comprehensive publication by Fjeld et al., (2007) aims to provide integral knowledge related to the analysis of environmental human health risks which consequently come from are consequences of human activities in a variety of scales. This work contains all three components mandatorily required in environmental risk analysis, including risk assessment, risk management and risk communication. However, the textbook mainly focuses on the computation of risk assessment.

This book is primarily developed for academic or and professional audiences, and is suggested to be used for graduate level courses in science or engineering. The descriptive explanations of conceptual constituents in this study area is briefly presented in chapter 1, which allows the reader to understand the overall analytical systems, centering the initiation of environment regulations and the illustration of compliance with the existing regulations. Nonetheless, external materials and examples must be individually obtained as stated in the references, and supplementary reading sections provided at the end of the chapter in order to enhance the audiences' understanding.

The cores of quantitative risk assessments are present in chapter 2 to 9 and chapter 11, which can be classified into I) fundamental of environmental modeling (chapter 2), II) release assessment (chapter 3), III) environmental transport theory in a diversity of media (Chapter 4 to 8), IV) exposure assessment



(chapter 9) and V) dose-response and risk characterization (chapter 11). This book sufficiently states necessary formulate informationthe necessary mathematical formulas as well as mathematics, science and engineering fundamentals deriving to derive the conclusive models. Additionally, numerous tables of various parameters are gathered with references in each chapter for the users' readers' convenience purposes. The appendix also includes essential advance mathematics theory as material review prior to applied concepts in each lesson.

These theoretical calculation concepts require strong backgrounds in multiple disciplines, entailing advance calculus, environmental science and engineering combined with computer skills for accomplishing the goals of risk assessment in this publication.

Chapter 10 (basic human toxicology) introduces details of biological science concepts associated with human toxicology and uncertainty. Also, sensitivity analyses in chapter 12, which contains useful statistical analysis associated with risk analysis. Risk management and risk communication components are well explained in chapter 13 to 15 (stakeholder involvement and risk communication, environmental risk management and environmental laws and regulations). The last three chapters supply informative contents related to risk management and risk communication in brief.

In concludeConclusively, there are several useful science and engineering details related to human health risk analysis present in this publication. The conceptual contents are well described. However, examples are still minimal, but can be obtained as suggested in the publication. This is an advance level textbook that requires well preparation anda strong background in several study areas before beginning using this publicationto fully understand the concepts explained in this book.

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