

1. Record Nr.	UNINA9910799232603321
Autore	Ababou R (Rachid)
Titolo	Uncertainty Analyses in Environmental Sciences and Hydrogeology : Methods and Applications to Subsurface Contamination / / by Rachid Ababou, Juliette Chastanet, Jean-Marie Côme, Manuel Marcoux, Michel Quintard
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9962-41-2
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (IX, 95 p. 31 illus., 27 illus. in color.)
Collana	SpringerBriefs in Applied Sciences and Technology, , 2191-5318
Disciplina	363.70072
Soggetti	Computer science Differential equations Pollution System theory Mathematical models Models of Computation Differential Equations Complex Systems Mathematical Modeling and Industrial Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction, objectives -- Overview of uncertainty propagation methods -- Review of Probabilistic versus Fuzzy Approaches to Uncertainty Propagation in Geosciences -- Fuzzy set characterization of uncertainty (fuzzy variables) -- Applications of uncertainty analyses on simplified models -- Applications of uncertainty analysis to 3D subsurface contamination problems -- Discussion and conclusions.
Sommario/riassunto	This book highlights several methods and quantitative implementations of both probabilistic and fuzzy-based approaches to uncertainty quantification and uncertainty propagation through environmental subsurface pollution models with uncertain input parameters. The book focuses on methods as well as applications in hydrogeology, soil hydrology, groundwater contamination, and related areas (e.g.,

corrosion of nuclear waste canisters). The methods are illustrated for a broad spectrum of models, from non-differential I/O models to complex PDE solvers, including a novel 3D quasi-analytical model of contaminant transport, and a site-specific computer model of dissolved contaminant migration from a DNAPL (Dense Non Aqueous Phase Liquid) pollution source.

---