

1. Record Nr.	UNINA9910141310403321
Autore	Chil?s Jean-Paul
Titolo	Geostatistics [[electronic resource] ] : Modeling Spatial Uncertainty
Pubbl/distr/stampa	Hoboken, : Wiley, 2012
ISBN	1-280-58852-7 9786613618351 1-118-13617-9 1-118-13618-7 1-118-13615-2
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (740 p.)
Collana	Wiley Series in Probability and Statistics ; ; v.713
Altri autori (Persone)	DelfinerPierre
Disciplina	550 550.72
Soggetti	Earth sciences - Statistical methods Earth sciences -- Statistical methods Environmental engineering Geology -- Statistical methods Mining engineering Geology Earth & Environmental Sciences Geology - General
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Geostatistics: Modeling Spatial Uncertainty; Contents; Preface to the Second Edition; Preface to the First Edition; Abbreviations; Introduction; Types of Problems Considered; Description or Interpretation?; 1. Preliminaries; 1.1: Random Functions; 1.2: On the Objectivity of Probabilistic Statements; 1.3: Transitive Theory; 2. Structural Analysis; 2.1: General Principles; 2.2: Variogram Cloud and Sample Variogram; 2.3: Mathematical Properties of the Variogram; 2.4: Regularization and Nugget Effect; 2.5: Variogram Models; 2.6: Fitting a Variogram Model 2.7: Variography in the Presence of a Drift2.8: Simple Applications of the Variogram; 2.9: Complements: Theory of Variogram Estimation and Fluctuation; 3. Kriging; 3.1: Introduction; 3.2: Notations and

Assumptions; 3.3: Kriging with a Known Mean; 3.4: Kriging with an Unknown Mean; 3.5: Estimation of a Spatial Average; 3.6: Selection of a Kriging Neighborhood; 3.7: Measurement Errors and Outliers; 3.8: Case Study: The Channel Tunnel; 3.9: Kriging Under Inequality Constraints; 4. Intrinsic Model of Order  $k$ ; 4.1: Introduction; 4.2: A Second Look at the Model of Universal Kriging  
4.3: Allowable Linear Combinations of Order  $k$ ; 4.4: Intrinsic Random Functions of Order  $k$ ; 4.5: Generalized Covariance Functions; 4.6: Estimation in the IRF Model; 4.7: Generalized Variogram; 4.8: Automatic Structure Identification; 4.9: Stochastic Differential Equations; 5. Multivariate Methods; 5.1: Introduction; 5.2: Notations and Assumptions; 5.3: Simple Cokriging; 5.4: Universal Cokriging; 5.5: Derivative Information; 5.6: Multivariate Random Functions; 5.7: Shortcuts; 5.8: Space-Time Models; 6. Nonlinear Methods; 6.1: Introduction; 6.2: Global Point Distribution  
6.3: Local Point Distribution: Simple Methods; 6.4: Local Estimation by Disjunctive Kriging; 6.5: Selectivity and Support Effect; 6.6: Multi-Gaussian Change-of-Support Model; 6.7: Affine Correction; 6.8: Discrete Gaussian Model; 6.9: Non-Gaussian Isofactorial Change-of-Support Models; 6.10: Applications and Discussion; 6.11: Change of Support by the Maximum (C. Lantuejoul); 7. Conditional Simulations; 7.1: Introduction and Definitions; 7.2: Direct Conditional Simulation of a Continuous Variable; 7.3: Conditioning by Kriging; 7.4: Turning Bands  
7.5: Nonconditional Simulation of a Continuous Variable; 7.6: Simulation of a Categorical Variable; 7.7: Object-Based Simulations: Boolean Models; 7.8: Beyond Standard Conditioning; 7.9: Additional Topics; 7.10: Case Studies; Appendix; References; Index

---

## Sommario/riassunto

Praise for the First Edition " . . . a readable, comprehensive volume that . . . belongs on the desk, close at hand, of any serious researcher or practitioner." -Mathematical Geosciences The state of the art in geostatistics Geostatistical models and techniques such as kriging and stochastic multi-realizations exploit spatial correlations to evaluate natural resources, help optimize their development, and address environmental issues related to air and water quality, soil pollution, and forestry. Geostatistics: Modeling Spatial Uncertainty, Second Edition presents a comprehensive

---