

1. Record Nr.	UNINA9910830804103321
Autore	Gibbons Robert D. <1955->
Titolo	Statistical methods for groundwater monitoring [[electronic resource] /] / Robert D. Gibbons, Dulal Bhaumik, Subhash Aryal
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, c2009
ISBN	1-282-31683-4 9786612316838 0-470-54993-9 0-470-54992-0
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (402 p.)
Collana	Statistics in Practice ; ; v.59
Altri autori (Persone)	BhaumikDulal AryalSubhash
Disciplina	628.161 628.50287
Soggetti	Groundwater - Pollution - Measurement - Statistical methods Water - Pollution - Measurement - Statistical methods
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	STATISTICAL METHODS FOR GROUNDWATER MONITORING; CONTENTS; Preface; Acknowledgments; Acronyms; 1 NORMAL PREDICTION INTERVALS; 1.1 Overview; 1.2 Prediction Intervals for the Next Single Measurement from a Normal Distribution; 1.3 Prediction Limits for the Next k Measurements from a Normal Distribution; 1.4 Normal Prediction Limits with Resampling; 1.5 Simultaneous Normal Prediction Limits for the Next Samples; 1.6 Simultaneous Normal Prediction Limits for the Next of m Measurements at Each of Monitoring Wells 1.7 Normal Prediction Limits for the Mean(s) of m > 1 Future Measurements at Each of k Monitoring Wells1.8 Summary; 2 NONPARAMETRIC PREDICTION INTERVALS; 2.1 Overview; 2.2 Pass 1 of m Samples; 2.3 Pass m - 1 of m Samples; 2.4 Pass First or All m - 1 Resamples; 2.5 Nonparametric Prediction Limits for the Median of m Future Measurements at Each of k Locations; 2.6 Summary; 3 PREDICTION INTERVALS FOR OTHER DISTRIBUTIONS; 3.1 Overview; 3.2 Lognormal Distribution; 3.2.1 UPL for a Single Future Observation; 3.2.2 Prediction Limits for m = 1 Future Measurement at Each of k

Locations

3.3 Lognormal Prediction Limits for the Median of m Future Measurements
3.4 Lognormal Prediction Limits for the Mean of m Future Measurements; 3.5 Poisson Distribution; 3.5.1 Poisson Prediction Limits; 3.5.2 Discussion; 3.6 Summary; 4 GAMMA PREDICTION INTERVALS AND SOME RELATED TOPICS; 4.1 Overview; 4.2 Gamma Distribution; 4.2.1 Prediction Limits for a Single Measurement from a Gamma Distribution; 4.2.2 Simultaneous Gamma Prediction Limits for the Next r of m Measurements at Each of k Monitoring Wells; 4.3 Comparison of the Gamma Mean to a Regulatory Standard; 4.4 Summary
5 TOLERANCE INTERVALS
5.1 Overview; 5.2 Normal Tolerance Limits; 5.3 Poisson Tolerance Limits; 5.4 Gamma Tolerance Limits; 5.5 Nonparametric Tolerance Limits; 5.6 Summary; 6 METHOD DETECTION LIMITS; 6.1 Overview; 6.2 Single Concentration Designs; 6.2.1 Kaiser-Currie Method; 6.2.2 USEPA-Glaser et al. Method; 6.3 Calibration Designs; 6.3.1 Confidence Intervals for Calibration Lines; 6.3.2 Tolerance Intervals for Calibration Lines; 6.3.3 Prediction Intervals for Calibration Lines; 6.3.4 Hubaux and Vos Method; 6.3.5 The Procedure Due to Clayton and Co-Workers
6.3.6 A Procedure Based on Tolerance Intervals
6.3.7 MDLs for Calibration Data with Nonconstant Variance; 6.3.8 Experimental Design of Detection Limit Studies; 6.3.9 Obtaining the Calibration Data; 6.4 Summary; 7 PRACTICAL QUANTITATION LIMITS; 7.1 Overview; 7.2 Operational Definition; 7.3 A Statistical Estimate of the PQL; 7.4 Derivation of the PQL; 7.5 A Simpler Alternative; 7.6 Uncertainty in *; 7.7 The Effect of the Transformation; 7.8 Selecting N; 7.9 Summary; 8 INTERLABORATORY CALIBRATION; 8.1 Overview
8.2 General Random-Effects Regression Model for the Case of Heteroscedastic Measurement Errors

Sommario/riassunto

A new edition of the most comprehensive overview of statistical methods for environmental monitoring applications Thoroughly updated to provide current research findings, Statistical Methods for Groundwater Monitoring, Second Edition continues to provide a comprehensive overview and accessible treatment of the statistical methods that are useful in the analysis of environmental data. This new edition expands focus on statistical comparison to regulatory standards that are a vital part of assessment, compliance, and corrective action monitoring in the environmental sciences. T