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| Autore                  | Pomerantsev A. L (Aleksei Leonidovich), <1954->                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Titolo                  | Chemometrics in Excel / / Alexey L. Pomerantsev                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Descrizione fisica      | 1 online resource (333 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| Soggetti                | Chemometrics - Data processing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Note generali           | Includes index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nota di contenuto       | Cover; Title Page; Contents; Preface; Part I Introduction; Chapter 1 What is Chemometrics?; 1.1 Subject of Chemometrics; 1.2 Historical Digression; Chapter 2 What the Book Is About?; 2.1 Useful Hints; 2.2 Book Syllabus; 2.3 Notations; Chapter 3 Installation of Chemometrics Add-In; 3.1 Installation; 3.2 General Information; Chapter 4 Further Reading on Chemometrics; 4.1 Books; 4.1.1 The Basics; 4.1.2 Chemometrics; 4.1.3 Supplements; 4.2 The Internet; 4.2.1 Tutorials; 4.3 Journals; 4.3.1 Chemometrics; 4.3.2 Analytical; 4.3.3 Mathematical; 4.4 Software; 4.4.1 Specialized Packages<br>4.4.2 General Statistic Packages<br>4.4.3 Free Ware; Part II The Basics; Chapter 5 Matrices and Vectors; 5.1 The Basics; 5.1.1 Matrix; 5.1.2 Simple Matrix Operations; 5.1.3 Matrices Multiplication; 5.1.4 Square Matrix; 5.1.5 Trace and Determinant; 5.1.6 Vectors; 5.1.7 Simple Vector Operations; 5.1.8 Vector Products; 5.1.9 Vector Norm; 5.1.10 Angle Between Vectors; 5.1.11 Vector Representation of a Matrix; 5.1.12 Linearly Dependent Vectors; 5.1.13 Matrix Rank; 5.1.14 Inverse Matrix; 5.1.15 Pseudoinverse; 5.1.16 Matrix\endash Vector Product; 5.2 Advanced Information<br>5.2.1 Systems of Linear Equations<br>5.2.2 Bilinear and Quadratic Forms; 5.2.3 Positive Definite Matrix; 5.2.4 Cholesky Decomposition; 5.2.5 Polar Decomposition; 5.2.6 Eigenvalues and Eigenvectors; 5.2.7 |

Eigenvalues; 5.2.8 Eigenvectors; 5.2.9 Equivalence and Similarity; 5.2.10 Diagonalization; 5.2.11 Singular Value Decomposition (SVD); 5.2.12 Vector Space; 5.2.13 Space Basis; 5.2.14 Geometric Interpretation; 5.2.15 Nonuniqueness of Basis; 5.2.16 Subspace; 5.2.17 Projection; Chapter 6 Statistics; 6.1 The Basics; 6.1.1 Probability; 6.1.2 Random Value; 6.1.3 Distribution Function; 6.1.4 Mathematical Expectation; 6.1.5 Variance and Standard Deviation; 6.1.6 Moments; 6.1.7 Quantiles; 6.1.8 Multivariate Distributions; 6.1.9 Covariance and Correlation; 6.1.10 Function; 6.1.11 Standardization; 6.2 Main Distributions; 6.2.1 Binomial Distribution; 6.2.2 Uniform Distribution; 6.2.3 Normal Distribution; 6.2.4 Chi-Squared Distribution; 6.2.5 Student's Distribution; 6.2.6 F-Distribution; 6.2.7 Multivariate Normal Distribution; 6.2.8 Pseudorandom Numbers; 6.3 Parameter Estimation; 6.3.1 Sample; 6.3.2 Outliers and Extremes; 6.3.3 Statistical Population; 6.3.4 Statistics; 6.3.5 Sample Mean and Variance; 6.3.6 Sample Covariance and Correlation; 6.3.7 Order Statistics; 6.3.8 Empirical Distribution and Histogram; 6.3.9 Method of Moments; 6.3.10 The Maximum Likelihood Method; 6.4 Properties of the Estimators; 6.4.1 Consistency; 6.4.2 Bias; 6.4.3 Effectiveness; 6.4.4 Robustness; 6.4.5 Normal Sample; 6.5 Confidence Estimation; 6.5.1 Confidence Region; 6.5.2 Confidence Interval; 6.5.3 Example of a Confidence Interval; 6.5.4 Confidence Intervals for the Normal Distribution; 6.6 Hypothesis Testing; 6.6.1 Hypothesis; 6.6.2 Hypothesis Testing; 6.6.3 Type I and Type II Errors

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#### Sommario/riassunto

Providing an easy explanation of the fundamentals, methods, and applications of chemometrics Acts as a practical guide to multivariate data analysis techniques Explains the methods used in Chemometrics and teaches the reader to perform all relevant calculations Presents the basic chemometric methods as worksheet functions in Excel Includes Chemometrics Add In for download which uses Microsoft Excel® for chemometrics training Online downloads includes workbooks with examples

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