## Statistics and Data Analysis in Geology

Second Edition

JOHN C. DAVIS Kansas Geological Survey



JOHN WILEY & SONS New York • Chichester • Brisbane • Toronto • Singapore

## Statistics and Data Analysis in Geology

Second Edition

JOHN C. DAVIS Kansas Geological Survey



JOHN WILEY & SONS New York • Chichester • Brisbane • Toronto • Singapore

## X Contents

Analysis of Multivariate Data	468
Multiple Regression	469
Discriminant Functions	478
Tests of Significance	485
Multivariate Extensions of Elementary Statistics	491
Equality of Two Vector Means	495
Equality of Variance–Covariance Matrices	497
Cluster Analysis	502
Introduction to Eigenvector Methods, Including Factor	515
	517
Principal Components Analysis	527
R-Mode Factor Analysis	546
Factor Rotation	555
Maximum Likelihood Factors	561
Q-Mode Factor Analysis	563
Principal Coordinates Analysis	574
Correspondence Analysis	579
Application to Continuous Variables	589
Simultaneous R- and Q-Mode Factor Analysis	594
Multigroup Discriminant Functions	602
Canonical Correlation	607
Selected Readings	615
	Discriminant Functions Tests of Significance Multivariate Extensions of Elementary Statistics Equality of Two Vector Means Equality of Variance–Covariance Matrices Cluster Analysis Introduction to Eigenvector Methods, Including Factor Analysis Eckart-Young Theorem Principal Components Analysis R-Mode Factor Analysis Factor Rotation Maximum Likelihood Factors Q-Mode Factor Analysis Principal Coordinates Analysis Correspondence Analysis Correspondence Analysis Simultaneous <i>R</i> - and <i>Q</i> -Mode Factor Analysis Multigroup Discriminant Functions Canonical Correlation

Appendix:	How to Run the STAT Program	621
Index	and the second of the second second second second	637