



Paleontological Data Analysis

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Wiley-Blackwell, 2005. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface Acknowledgments 1 Introduction 1.1 The nature of paleontological data 1.2 Advantages and pitfalls of paleontological data analysis 1.3 Software 2 Basic statistical methods 2.1 Introduction 2.2 Statistical distributions 2.3 Shapiro-Wilk test for normal distribution 2.4 F test for equality of variances 2.5 Student's t test and Welch test for equality of means 2.6 Mann-Whitney U test for equality of medians 2.7 Kolmogorov-Smirnov test for equality of distributions 2.8 Permutation and resampling 2.9 One-way ANOVA 2.10 Kruskal-Wallis test 2.11 Linear correlation 2.12 Non-parametric tests for correlation 2.13 Linear regression 2.14 Reduced major axis regression 2.15 Nonlinear curve fitting 2.16 Chi-square test 3 Introduction to multivariate data analysis 3.1 Approaches to multivariate data analysis 3.2 Multivariate distributions 3.3 Parametric multivariate tests 3.4 Non-parametric multivariate tests 3.5 Hierarchical cluster analysis 3.5 K-means cluster analysis 4 Morphometrics 4.1 Introduction 4.2 The allometric equation 4.3 Principal components analysis (PCA) 4.4 Multivariate allometry 4.5 Discriminant analysis for two groups 4.6 Canonical variate analysis (CVA) 4.7 MANOVA 4.8 Fourier shape analysis 4.9 Elliptic Fourier analysis 4.10 Eigenshape analysis 4.11 Landmarks and size measures 4.12 Procrustean fitting 4.13 PCA of landmark data 4.14 Thin-plate spline deformations 4.15 Principal and partial warps 4.16 Relative warps 4.17 Regression of partial warp scores 4.18 Disparity measures 4.19 Point distribution statistics 4.20 Directional statistics Case study: The ontogeny of a Silurian trilobite 5 Phylogenetic analysis 5.1 Introduction 5.2 Characters 5.3 Parsimony analysis 5.4 Character state reconstruction 5.5 Evaluation of characters and tree...



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