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Nota di contenuto	Smoothing and Regression: Approaches, Computation, and Application; Contents; Foreword; Preface; 1. Spline Regression; 1.1 Introduction; 1.2 General Form of the Estimator; 1.3 The Linear Smoothing Spline; 1.4 Large-Sample Efficiency; 1.5 Bayesian Motivation; 1.6 Extensions and Implementations; References; 2. Variance Estimation and Smoothing- Parameter Selection for Spline Regression; 2.1 Introduction and Some Definitions; 2.2 Interpretation of the Smoothing Parameter; 2.3 Quantifying the Complexity of a Smoothing Spline; 2.4 Estimation of 2; 2.5 Determination of ; 2.6 Estimation of 2 4.2 Nonparametric Variance Estimators4.3 Bandwidth Choice for Kernel Regression Estimators; References; 5. Spline and Kernel Regression under Shape Restrictions; 5.1 Introduction; 5.2 Description of the Main Methods; 5.3 A Comparative View; 5.4 Examples; 5.5 Software Hints; References; 6. Spline and Kernel Regression for Dependent Data; 6.1 Introduction; 6.2 Approaches for a Known Autocorrelation Function; 6.3 Approaches for an Unknown Autocorrelation Function; 6.4 A Bayesian Approach to Smoothing Dependent Data; 6.5 Applications of

Smoothing Dependent Data; References

7. Wavelets for Regression and Other Statistical Problems 7.1 Introduction; 7.2 Wavelet Expansions; 7.3 The Discrete Wavelet Transform in S ; 7.4 Wavelet Shrinkage; 7.5 Estimators for Data With Correlated Noise; 7.6 Implementation of the Wavelet Transform; 7.7 How to Obtain and Install the Wavelet Software; References; 8. Smoothing Methods for Discrete Data; 8.1 Introduction; 8.2 Smoothing Contingency Tables; 8.3 Smoothing Approaches to Categorical Regression; 8.4 Conclusion; References; 9. Local Polynomial Fitting; 9.1 Introduction; 9.2 Properties of Local Polynomial Fitting; 9.3 Choice of Bandwidth; 9.4 Choice of the Degree; 9.5 Local Modeling; 9.6 Some More Applications; References; 10. Additive and Generalized Additive Models; 10.1 Introduction; 10.2 The Additive Model; 10.3 Generalized Additive Models; 10.4 Alternating Conditional Expectations Additivity, and Variance Stabilization; 10.5 Smoothing Parameter and Bandwidth Determination; 10.6 Model Diagnostics; 10.7 New Developments; References; 11. Multivariate Spline Regression; 11.1 Introduction; 11.2 Smoothing Splines as Bayes Estimates; 11.3 ANOVA Decomposition on Product Domains; 11.4 Tensor Product Splines; 11.5 Computation

Sommario/riassunto

A comprehensive introduction to a wide variety of univariate and multivariate smoothing techniques for regression Smoothing and Regression: Approaches, Computation, and Application bridges the many gaps that exist among competing univariate and multivariate smoothing techniques. It introduces, describes, and in some cases compares a large number of the latest and most advanced techniques for regression modeling. Unlike many other volumes on this topic, which are highly technical and specialized, this book discusses all methods in light of both computational efficiency and their applicab
