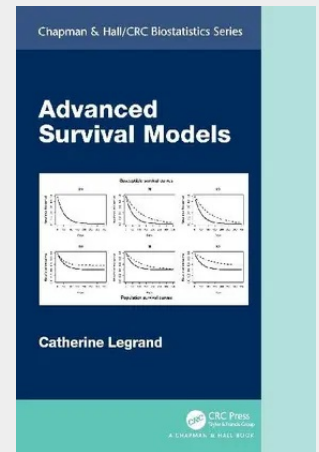


Advanced Survival Models

Survival data analysis is a very broad field of statistics, encompassing a large variety of methods used in a wide range of applications, and in particular in medical research. During the last twenty years, several extensions of "classical" survival models have been developed to address particular situations often encountered in practice. This book aims to gather in a single reference the most commonly used extensions, such as frailty models (in case of unobserved heterogeneity or clustered data), cure models (when a fraction of the population will not experience the event of interest), competing risk models (in case of different types of event), and joint survival models for a time-to-event endpoint and a longitudinal outcome. Features - Presents state-of-the art approaches for different advanced survival models including frailty models, cure models, competing risk models and joint models for a longitudinal and a survival outcome - Uses consistent notation throughout the book for the different techniques presented - Explains in which situation each of these models should be used, and how they are linked to specific research questions - Focuses on the understanding of the models, their implementation, and their interpretation, with an appropriate level of methodological development for masters students and applied statisticians - Provides references to existing R packages and SAS procedure or macros, and illustrates the use of the main ones on real datasets This book is primarily aimed at applied statisticians and graduate students of statistics and biostatistics. It can also serve as an introductory reference for methodological researchers interested in the main extensions of classical survival analysis.

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