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Generalized linear models. 2nd ed. (English) Zbl 0744.62098

Monographs on Statistics and Applied Probability. 37. London etc.: Chapman and Hall. xix, 511 p. (1989).

The subject of generalized linear models has undergone vigorous development in the six years since the publication of the first edition, see the review [Zbl 0588.62104](#), of this book. At the same time many of the key ideas, terminology, notation, and so on, have diffused into the statistical mainstream, so there is a need to make the basic material more digestible for advanced undergraduate and graduate students who have some familiarity with linear models. Our chief aims in preparing this second edition have been:

1. to bring the book up to date; 2. to provide a more balanced and extended account of the core material by including examples and exercises.

The book has therefore been extensively revised and enlarged to cover some of the development of the past six years. For obvious reasons we have had to be selective in our choice of new topics. We have tried to include only those topics that might be directly useful to a research scientist. Within this category, though, our choice of topics reflects our own research interests including, in particular, quasi-likelihood functions and estimating equations, models for dispersion effects, components of dispersion (random-effects models), and conditional likelihoods.

The organization of the basic material in the first six chapters follows that of the first edition, though with greater emphasis on detail and more extensive discussion. Numerous exercises, both theoretical and data-analytic, have been added as a supplement to each chapter. These six chapters should provide sufficient material for a one-quarter introductory course on generalized linear models. The remaining chapters cover more advanced or specialized topics suitable for a second-level course.

MSC:

- [62J12](#) Generalized linear models (logistic models)
- [62-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistics
- [62-02](#) Research exposition (monographs, survey articles) pertaining to statistics

Cited in **14** Reviews
Cited in **1312** Documents

Keywords:

[linear prediction](#); [link function](#); [weights](#); [residuals](#); [Gaussian linear models](#); [aliasing](#); [binary data](#); [polytomous data](#); [loglinear models](#); [gamma distribution](#); [log likelihood functions](#); [asymptotic results](#); [quasi-likelihood function](#); [survival data](#); [nonlinear parameters](#); [model checking](#); [numerical examples](#); [conditional likelihoods](#); [nonlinear models](#); [bias adjustment](#); [Bartlett adjustments](#); [generalized additive models](#)