

Fan, J.; Gijbels, I.

Local polynomial modelling and its applications. (English) Zbl 0873.62037

Monographs on Statistics and Applied Probability. 66. London: Chapman & Hall. xvi, 341 p. (1996).

Local polynomial fitting provides a powerful methodology for nonparametric estimation of a regression function. Under appropriate smoothness assumptions the least-squares principle is applied to fit a polynomial to data contained in a small window. The present monograph nicely reviews the current state of art. Topics which are dealt with in greater details are: adaptive choice of the smoothing parameter, bias and variance considerations, applications to survival and time series data. The authors spend much time on motivation. Proofs are given only for some selected mathematical statements.

Reviewer: [W.Stute \(Gießen\)](#)

MSC:

[62G07](#) Density estimation

[62-02](#) Research exposition (monographs, survey articles) pertaining to statistics

[62M10](#) Time series, auto-correlation, regression, etc. in statistics (GARCH)

[62P99](#) Applications of statistics

Cited in **3** Reviews
Cited in **1149** Documents

Keywords:

kernel smoothing; survival data; nonparametric regression; local polynomial fitting; adaptive choice of the smoothing parameter; least-squares; bias; variance; time series