

## **Kernel smoothing in some nonstandard models.**

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We discuss kernel smoothing estimates for some nonstandard nonparametric regression problems. The estimate is based on minimizing a smoothed least squares criterion. The main example in this talk is estimation of discount functions, yield curves and forward curves from government issued coupon bonds. Other examples are additive models, panels of time series, semiparametric GARCH models and regression models with correlated errors. The definition of the estimates is not explicit and our estimation procedure is iterative, rather like the backfitting method of estimating additive nonparametric models. We establish the asymptotic normality of our methods using the asymptotic representation of our estimator as an infinite series with declining coefficients. The rate of convergence is standard for one dimensional nonparametric regression. The paper reports about joint work with O. Linton, J. Nielsen and D. Tjøstheim.

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