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Testing linearity for nonparametric component of partially linear models. (English)

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Summary: In the problem of testing whether the nonparametric component of a partially linear model is a polynomial of a certain degree (denoted p), we propose a simple test statistic which is based on the sample variance of the estimated p th derivative of the nonparametric function at each design point. Three-moment χ^2 approximation is employed to derive the p -value of the test. Furthermore, some simulations are conducted to examine the performance of our test procedure and the results are satisfactory.

MSC:

62G10 Nonparametric hypothesis testing

62G08 Nonparametric regression and quantile regression

Cited in 1 Document

Keywords:

derivative estimation; partially linear models; profile least-squares approach