应用数学与基础数学

半参数变系数部分线性模型的函系数检验

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摘要　　通过局部线性方法给出未知函系数与未知参数的拟似然估计，利用未知量的拟似然估计构造了函系数部分的广义似然比检验，并证明了原假设下检验统计量渐近服从自由度独立讨厌参数与讨厌函数的~χ^{2}-分布，揭示了Wilks 现象. 通过模拟例子对给出的检验方法作出分析.

关键词　　局部线性方法　拟似然估计　广义似然比检验　Wilks 现象

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Tests for functional-coefficient parts on semiparametric varying-coefficient partially linear models

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Abstract

Based on the quasi-likelihood estimates obtained by the local linear method,~the generalized likelihood ratio tests for the models were established.~Under the null hypothesis the test statistic followed asymptotically the χ^{2}-distribution with the scale constants and the degree of freedom being independent of the nuisance parameters and the nuisance functions,~which was called the Wilks phenomenon.~A simulated example was presented to illustrate the proposed methods.

Key words　local linear method　quasi-likelihood estimates　generalized likelihood ratio tests　Wilks phenomenon

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