

Arturo A. Z. Zavala · Heleno Bolfarine  
Mário de Castro

# Consistent estimation and testing in heteroscedastic polynomial errors-in-variables models

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**Abstract** The paper concentrates on consistent estimation and testing in functional polynomial measurement errors models with known heterogeneous variances. We rest on the corrected score methodology which allows the derivation of consistent and asymptotically normal estimators for line parameters and also consistent estimators for the asymptotic covariance matrix. Hence, Wald and score type statistics can be proposed for testing the hypothesis of a reduced linear relationship, for example, with asymptotic chi-square distribution which guarantees correct asymptotic significance levels. Results of small scale simulation studies are reported to illustrate the agreement between theoretical and empirical distributions of the test statistics studied. An application to a real data set is also presented.

**Keywords** Polynomial model · Errors-in-variables · Hypothesis test · Corrected score