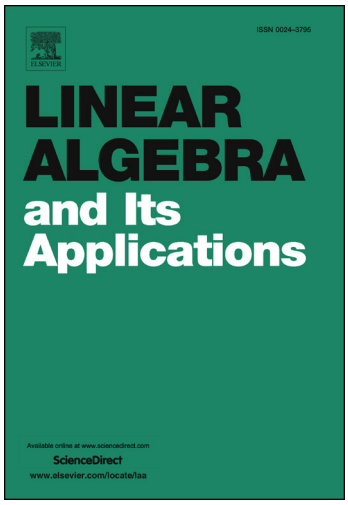

Ridge estimation in semiparametric linear measurement error models

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Ridge estimation in semiparametric linear measurement error models

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Abstract

We consider the ridge and restricted ridge estimation in semiparametric linear models when the covariates are measured with errors and the covariance matrix of the parameters is ill conditioned. The estimators are compared and the dominance conditions as well as the regions of optimality of the proposed estimators are determined based on quadratic risks. A simulation studies are conducted to illustrate the finite sample performance of the proposed procedures.

Keywords: Ill -conditioned, Measurement error, Ridge regression estimators, Semiparametric regression.

MSC :

2010 MSC: 15 A04, 15A18, 62J07, 62G07

1. Introduction

Collinearity is troublesome and the effects of its presence on different aspects of linear models is well known (see for instance, Belsley (1991)). When there is collinearity among the explanatory variables alternative estimators has been proposed which are generally biased. Among them ridge estimators have received a great deal of attention in statistical literature since the

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