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Estimating the structural dimension of regressions via parametric inverse regression. (English) [Zbl 0979.62041](#)

J. R. Stat. Soc., Ser. B, Stat. Methodol. 63, No. 2, 393-410 (2001).

Summary: A new estimation method for the dimension of a regression at the outset of an analysis is proposed. A linear subspace spanned by projections of the regressor vector X , which contains part or all of the modelling information for the regression of a vector Y on X , and its dimension are estimated via the means of parametric inverse regression. Smooth parametric curves are fitted to the p inverse regressions via a multivariate linear model. No restrictions are placed on the distribution of the regressors. The estimate of the dimension of the regression is based on optimal estimation procedures. A simulation study shows the method to be more powerful than sliced inverse regression in some situations.

MSC:

[62H12](#) Estimation in multivariate analysis

[62J05](#) Linear regression; mixed models

Cited in **38** Documents

Keywords:

[asymptotic test for dimension](#); [dimension reduction](#); [inverse regression](#); [sliced inverse regression](#)

Software:

[LISP-STAT](#)

Full Text: [DOI](#)