

Colloquium announcement

“A Generalized Partially Linear Single-Index Model with Its Applications”

Presented by
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Tuesday, March 21, 2017
300 Seitz Hall
3:30 p.m.

Abstract: A generalized partially linear single-index model (GPLSIM) is proposed. A spline function, which can be expressed as a linear combination of *B*-spline basis functions, is employed to approximate the unknown smooth function of single index in the proposed GPLSIM. The regression parameters and the unknown smooth function are estimated simultaneously with a modified Fisher-scoring method. The estimators of the regression parameters are shown to be asymptotically normally distributed. The least-squares method is utilized to estimate directly and consistently the asymptotic covariance matrix of the estimators. As an application, the proposed GPLSIM is applied to test the lack-offit of a postulated generalized linear model by using a likelihood ratio (LR) test. The finite-sample performance of the LR test is investigated by conducting an extensive simulation study. A real-life data set is used to demonstrate the practicality of the proposed methodology.

Hosted by the
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Please join us after the colloquium for refreshments at
Top of the Stairs (217 College Ave.)