ABSTRACT

ESTIMATION AND INFERENCE IN SEMIPARAMETRIC REGRESSION MODELS WITH WEAKLY DEPENDENT DATA

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The present thesis concentrates on estimation and inference issues of a particular subset of regression models that allow for both parametric and nonparametric components. Following the work of Robinson (1988), these semiparametric models have found many applications in theoretical and applied econometrics, see Powell (1994). The new results that are provided in the thesis are the development of a new test for serial correlation in the context of these models and also a way of obtaining efficiency gains in small and moderate samples when dealing with high dimensional problems. This is the so called curse of dimensionality that plagues all nonparametric smoothing methods. However, the use of the so called Projection Pursuit method goes a long way to alleviate the problem in the context of a semiparametric partially linear model.