ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

ΤΜΗΜΑ ΜΑΘΗΜΑΤΙΚΩΝ

Εβδομαδιαίο Σεμινάριο

Conditional distribution function estimation and bandwidth selection under censoring

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The present research provides three methodological advances, simulation evidence and a real data analysis, all contributing to the area of local linear estimation and model selection. The first contribution addresses the problem of conditional cumulative distribution/survival function estimation, by developing a double smoothed local linear estimate which admits an arbitrary number of covariates. The asymptotic properties of the estimate, established also herein, form the basis of the second contribution which addresses the problem of efficient implementation of the estimate in practice. This is achieved by developing an automatic plug-in smoothing parameter selection rule which optimizes the estimate's performance in all coordinate directions. The analytic study of the rule's rate of convergence shows that in contrast to the traditional cross validation approach, the proposed bandwidth selector is functional even for a large number of covariates. The third contribution addresses the problem of obtaining parsimonious models that strike the right balance between the number of covariates employed and the precision in estimation offered. This is achieved by developing a model selection rule that returns the optimal combination of covariates to employ in the model, based on fair comparison between candidate models.

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Μετά την ομιλία ακολουθεί καφές και συζήτηση στο εντευκτήριο του Τμήματος.