KATHOLIEKE UNIVERSITEIT LEUVEN

Statistics and Econometrics Seminar

Joint organization by
ORSTAT, Faculty of Business and Economics and the Statistics Research Group,
Faculty of Science
Leuven Statistics Research Center

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"Non-crossing nonparametric estimates of quantile curves"

Thursday, February 10, 2011
12.00–13.00h

Location: Room HOG 03.101, Naamsestraat 69, Leuven.
Supporting research project: GOA-project 2007/04

Abstract. In this paper a new nonparametric estimate of conditional quantiles is proposed, that avoids the problem of crossing quantile curves [calculated for various $p \in (0;1)$]. The method uses an initial estimate of the conditional distribution function in a first step and solves the problem of inversion and monotonization with respect to $p \in (0;1)$ simultaneously. It is demonstrated that the new estimates are asymptotically normal distributed and asymptotically first order equivalent to quantile estimates obtained by local constant or local linear smoothing of the conditional distribution function. The performance of the new procedure is illustrated by means of a simulation study and some comparisons with the currently available procedures which are similar in spirit with the proposed method are presented. The second part of the talk focuses on censored quantile regression.