

広島統計談話会  
Hiroshima Statistics Study Group

第 259 回談話会を下記のように開催致しますので  
御参集下さいますようお願い申し上げます。

You are cordially invited to the 259<sup>th</sup> meeting as scheduled below.

日 時 : 2010 年 10 月 29 日 (金) 15:00 –  
Date : October 29, 2010 (Fri) 15:00 –  
場 所 : 放射線影響研究所 講堂  
Place : RERF Auditorium  
演 者 : 加藤 賢悟 博士 (広島大学大学院理学研究科数学専攻 助教)  
Speaker : Kengo Kato, Ph.D.  
Assistant Professor  
Department of Mathematics, Graduate School of Science, Hiroshima University  
演 題 : 「パネルデータに対する平滑化分位点回帰」  
Title : “Smoothed quantile regression for panel data (with Antonio Galvao)”

要 約 :

**Abstract:**

This paper studies fixed effects estimation of quantile regression (QR) models with panel data. Previous studies show that there are two important difficulties with the standard QR estimation. First, the estimator can be biased because of the well-known incidental parameters problem. Secondly, the non-smoothness of the objective function significantly complicates the asymptotic analysis of the estimator, especially in panel data models. We overcome the latter problem by smoothing the objective function. Under an asymptotic framework where both the numbers of individuals and time periods grow at the same rate, we show that the fixed effects estimator for the smoothed objective function has a limiting normal distribution with a bias in the mean, and provide the analytic form of the asymptotic bias. We propose a simple one-step bias correction to the fixed effects estimator based on the analytic bias formula obtained from our asymptotic analysis. We illustrate the effect of the bias correction to the estimator through simulations.