INSTITUT DE STATISTIQUE
UNIVERSITE CATHOLIQUE DE LOUVAIN

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ARC SEMINAR

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Belgium

"Domains of attraction of the random vector (X, X^2) and applications"

Friday, April 3, 2009
14:30
Room : **c 115 (STAT)**

Abstract

Many statistics are based on functions of sample moments. Important examples are the sample variance s^2_{n-1}, the sample coefficient of variation SV(n), the sample dispersion SD(n) and the non-central t-statistic t(n). The definition of these quantities makes clear that the vector defined by

$$\left(\sum_{i=1}^{n} X_i , \sum_{i=1}^{n} X_i^2\right)$$

plays an important role. In studying the asymptotic behaviour of this vector we start by formulating best possible conditions under which the vector (X, X^2) belongs to a bivariate domain of attraction of a stable law. This approach is new, uniform and simple. Our main results include a full discussion of the asymptotic behaviour of SV(n), SD(n) and $t^2(n)$. For simplicity, in restrict ourselves to positive random variables X.

You are welcome to the coffee break after the seminar (room : c 105)

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