



INSTITUT DE STATISTIQUE

UNIVERSITE CATHOLIQUE DE LOUVAIN

ARC

ACTION

RECHERCHE

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ARC SEMINAR

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"Asymptotic behavior of sample mean on trees"

Friday, April 3, 2009

16:00

Room : c 115 (STAT)

Abstract

For random variables with values on binary trees, the definition of mathematical expectation has been generalized to the notion of barycenter. However, the trees are lacking the nice structure of Euclidean spaces, so there is more than one natural way to define the sample mean in this case. For instance, one can use the recursive relation between the standard sample means and arrive at the notion of inductive means. We study the inductive mean of an iid sample as an estimator of the barycenter. We show the strong consistency, but also that these means (somewhat peculiarly) converge towards the true barycenter with different rates (and asymptotic distributions) depending on the small variations of the underlying distribution. The research is mainly motivated by applications in Molecular Biology where irregular parameter spaces like trees frequently appear, and by the recent monograph by Sturm who studied the consistency of inductive means in more general circumstances.

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

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