Invitation

à la séance conjoint
du 3e Cycle Romand de Mathématiques et
du 3e Cycle Romand de Statistique et Probabilités
Appliquées

Vendredi le 16 octobre 1998

Début 9h15 — Fin environ 16h30

Theorie des nombres et sciences stochastiques

Conférences:

Professeur Walter Philipp (University of Illinois, Urbana-Champaign)
Weak dependence in Probability,Statistics,Analysis and Number Theory.

Professeur Jean-Louis Nicolas (Université Claude Bernard,Lyon)
Arithmétique et Cryptographie

Lieu: Section de Mathématiques, Salle 17

Indication :
Jeudi,le 15 0ctobre 1997 sont prévues 2 conférences au même endroit.
Début 14h15 — Fin environ 17h45:
Professeur Herbert Ziezold "Shape analysis" et
Professeur Gérard d'Aubigny "Statistique spatiale" (titre provisoire)

Résumé:

WEAK DEPENDENCE IN PROBABILITY, STATISTICS, ANALYSIS AND NUMBER THEORY

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Weak dependence, understood in the probabilistic sense, plays a major role in various branches of mathematics and statistics. The assumption that certain sequences of random variables are independent and identically distributed constitutes an idealisation that frequently is not satisfied. Often, a more appropriate way to describe such situations is to say that the "beginning" and the "end" of the sequence is almost independent. Properly quantified this idea leads to various concepts of mixing.

The purpose of this course is to demonstrate the fruitfulness of these ideas via various examples. In probabilistic number theory we will discuss aspects of the theory of additive functions (in the sense of Kubilius and P.D.T.A Elliott), continued fractions and other number theoretic algorithms, and uniform distribution mod 1. In analysis we will touch upon the theory of lacunary trigonometric series and its connection with harmonic functions. We will also discuss unsolved problems and conjectures, such as the long-standing Ibragimov conjecture on the central limit theorem for stationary phi-mixing sequences of random variables.