



Iowa Colloquium on
Information, Complexity, and
Logic

March 12th Meeting

Location: Iowa State University in Black Engineering 1028

[Map of Iowa State University](#)

[Parking Map](#)

Time: Tuesday, March 12 at 3:30 PM

Speaker: Xiang Huang (Iowa State University)

Title: Asymptotic Divergences and Strong Dichotomy

Abstract: The Schnorr-Stimm dichotomy theorem concerns finite-state gamblers that bet on infinite sequences of symbols taken from a finite alphabet. The theorem asserts that, for any such sequence S , the following two things are true.

1. If S is not normal, then there is a finite-state gambler that wins money at an infinitely-often exponential rate betting on S .
2. If S is normal, then any finite-state gambler betting on S loses money at an exponential rate betting on S .

In this paper, we use the Kullback-Leibler divergence to formulate asymptotic divergences and to quantify the exponential rates of winning and losing on the two sides of the Schnorr-Stimm dichotomy theorem. Some connections to finite state dimension are also discussed.

Parking Information: It is recommended that visitors use the Memorial Union Parking Ramp.