Lethbridge Number Theory and Combinatorics Seminar

Monday — November 25, 2019
Room: C630
Time: 12:00 to 12:50 p.m.

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Large deviation principle for the divisor function

Let $\omega(n)$ denote the number of distinct prime divisors of n. Let $W(m)$ be a random integer chosen uniformly from $\{n : n \le m, n \in \mathbb{N}\}$. Let $X(m)$ be $\omega(W(m))$. The celebrated Erdős-Kac theorem asserts that

$$\frac{X(m) - \log\log m}{\sqrt{\log\log m}} \to N(0,1),$$

where $N(0,1)$ is the standard normal distribution.

In 2016, Mehrdad and Zhu studied the large and moderate deviations for the Erdő-Kac theorem. In this talk, we will give a brief introduction to the theory. Then we will discuss how to establish the large deviation principle for $X(m)/\log\log m$. If time allows, we will discuss some generalisations.

This is a joint work with Dr Peng-Jie Wong.

EVERYONE IS WELCOME!

Visit the seminar web page at
http://www.cs.uleth.ca/∼nathanng/ntcoseminar/

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