

University of Lethbridge
Department of Mathematics
and Computer Science

Number Theory & Combinatorics Seminar

Monday — February 4, 2013

Room: E575

Time: 12:00 to 12:50 p.m.

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Error terms and sums of independent random variables

Abstract: The normalized error term in the prime number theorem is intimately related to the location of the zeros of the zeta function. In 1901, Von Koch proved that the Riemann hypothesis implies that this error term is less than $\log^2 x$. In 1914, Littlewood famously proved that the error term is infinitely often larger than $\log \log \log x$. Which function is closer to the truth? In important work, Montgomery suggested that the truth lies near $(\log \log \log x)^2$. His work depends on modelling the normalizing error term by a sum of independent random variables. He then derives sharp estimates for large deviations of this sum of independent random variables. I will attempt to explain the main ideas behind his conjecture.

EVERYONE IS WELCOME!

Visit the seminar web page at

<http://www.cs.uleth.ca/~nathanng/ntcoseminar/>