

## Number Theory and Combinatorics Seminar

Monday, January 23, 2012

Room: E575

Time: 12:00 - 12:50pm



*Speaker:* Habiba Kadiri (University of Lethbridge)

*Title:* Zero density estimates for the zeros of the Riemann zeta function

*Abstract:*

An important tool in the analytic investigation of the distribution of primes consists in estimates for the density of zeros of the Riemann zeta function in the critical strip  $0 < x < 1$ .

We denote  $N(a, T)$  the number of such zeros in the region  $\{a < x < 1 \text{ and } 0 < y < T\}$ . It is expected that the zeros close to the 1-line are rare (and thus that  $N(a, T)$  decreases with  $a$ ). Great efforts have been made to establish asymptotic results of the form  $N(a, T) \ll T^{c(a)(1-a)} (\log T)^A$ , where  $c(a)$  and  $A$  are positive. However, there are very few explicit bounds for  $N(a, T)$ .

In this talk, we will present the following result together with the ideas for its proof:  $N(a, T) < c_1(a) T + c_2(a) \log T - c_3(a)$ , where each  $c_i$  is explicit and positive.

EVERYONE IS WELCOME!

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