

1096-11-1499

Laura Faber, Habiba Kadiri* (habiba.kadiri@uleth.ca) and **Allysa Lumley**. *Explicit estimates for $\psi(x)$* .

In this talk we present some new Chebyshev bounds for the function $\psi(x)$. In 1962, Rosser and Schoenfeld provided a method to estimate the error term in the approximation $|\psi(x) - x|$. Since then, progress on the numerical verification of the Riemann Hypothesis and widening the zero-free region have allowed to improve numerically these bounds. In this talk we present a new method by introducing a smooth weight and by using the first explicit zero density estimate for the Riemann zeta function. We also present new results for primes in short intervals, based on this zero density estimate. (Received September 16, 2013)