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*New explicit bounds for a prime counting function*

The prime number theorem establishes that  $\psi(x)$  is asymptotic to  $x$  when  $x$  is large. Explicit bounds for the error term are of the form  $|\psi(x) - x| \leq \epsilon(b)x$  for all  $x \geq e^b$ , where  $\epsilon(b)$  can be computed. Such results depend on the zeros of the Riemann zeta function: a numerical verification of the Riemann Hypothesis up to a given height and a zero-free region. In this talk, we will discuss some new bounds for the error term. Our method makes use of smooth weights and an explicit estimate for the density of zeros. This is a joint work with Laura Faber.