Algebra & Number Theory Seminar

Wednesday, November 18th, 2009

3:00 pm in Hume 331

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The Riemann Hypothesis ...

ABSTRACT

...is 150 years old. In the fall of 1859, G. F. B. Riemann communicated his now famous paper "*Ueber die Anzahl der Primzahlen unter einer gegebenen Grösse*" – translated as "*On the number of primes less than a given magnitude*" – to the Berlin Academy. In this paper, he outlined a potential proof of what is now called the Prime Number Theorem. His idea was to explicitly relate sums over the zeros of a certain meromorphic function (now called the Riemann zeta-function) to sums over the prime numbers. He further conjectured that all the zeros of this function lie on a vertical line. This conjecture is now known as the *Riemann Hypothesis* and is considered by many to be one of the most important unsolved problems in pure mathematics. In this talk we will describe the Riemann Hypothesis, some of its consequences, and some evidence in its favor.

This talk is part of "RH Day" organized by the American Institute of Mathematics (details at `http://aimath.org/RH150/`). On November 18th, there will be lectures at universities all over the world on topics related to the Riemann zeta-function and the Riemann Hypothesis in order to celebrate the sesquicentennial anniversary of Riemann's original paper.