Colloquium

Wednesday September 20, 2006

12:00-1:00pm Room 08-2355

Euler's Observations on Harmonic Progressions

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In 1734, Leonhard Euler presented to the St Petersburg Academy a paper on the harmonic series, in which he gives a novel proof that its sum is infinite (using a variant on the Cauchy condition), introduces a new constant (gamma) relating the sum of the harmonic series to the natural logarithm function, and constructs a numerical approximation to that constant, accurate to five decimal places. We will explore properties of the harmonic series as Euler presented them, and attempt to place this work in the context of the early history of infinite series. The question of Euler's priority in the discovery of the Cauchy condition will also be discussed.

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