

BI-CO MATHEMATICS COLLOQUIUM

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*“Many ways in which
things oscillate”*

Tuesday, February 21, 2012

Talk at 4:00 – Park 328

Tea at 3:30 – Park 355, Math Lounge

Abstract: You might think that the numbers 79 and 111 are not that close to each other, but your computer (which sees 100111 and 110111) would disagree! In this talk we will introduce p -adic numbers, a number system based on a new notion of distance in which 79 and 111 are very “2-adically close”, explain how p -adic numbers arise naturally in number theory, and compare the analysis based on this different distance with the usual calculus. We will then describe a recent development in which new estimates on short exponential sums involving p -adically analytic fluctuations lead to improvements in the subconvexity problem for L -functions.

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