ANALYSIS AND NUMBER THEORY SEMINAR

Combinatorics and PDEs

Theodore Kolokolnikov
Dalhousie University

WHEN: Wed 15 Jul 2009, 3:30 p.m.

WHERE: Chase 319

ABSTRACT:

Let $a(n)$ denote the number of sign choices $+$ and $-$ such that $\pm 1 \pm 2 \pm 3 \pm \cdots \pm n = 0$. For example when $n = 3$ we have $1 + 2 - 3 = 0$ and $-1 - 2 + 3 = 0$ so $a(3) = 2$. We are interested to know how $a(n)$ grows as a function of n. In the limit of large n, we will derive an asymptotic formula for $a(n)$ by using the fundamental solution of the heat equation. We will also investigate a more general question: given integers n, m, let $b(m, n)$ be the number of partitions of the set $\{0, 1, 2, ..., n\}$ that add up to m. We derive an asymptotic formula for $b(m, n)$ when $n \gg 1$ and $m = O(n^2)$.

Any questions, please email: rnoble@mathstat.dal.ca.