

Number theory, partitions, q -series and related research
($npqr^2$)

SEMINAR

Arithmetic of overpartition and overpartition
pairs

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Date: 21st May 2018 (Monday)

Time: 2.30 – 3.30 pm

Venue: MME Journal Room, NIE Block 7, Level 3, Room 16.

<http://math.nie.edu.sg/pctoh/Gettinghere.jpg>

Abstract:

A partition of a positive integer n is a nonincreasing sequence of positive integers whose sum is n . Let $p(n)$ denote the number of partitions of n . Ramanujan first discovered and proved the following three nice congruences: $p(5n + 4)$ is divisible by 5, $p(7n + 5)$ is divisible by 7, $p(11n + 6)$ is divisible by 11. From that time on, more and more people were interested in investigating the arithmetic properties of $p(n)$ and studying other types of partition functions.

In this talk, we first give a brief survey on some beautiful results for $p(n)$ due to Ramanujan, and then proceed to present a proof of Ramanujan's generating function for $p(5n + 4)$. Finally, we present our work on overpartition and overpartition pairs.

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