UNIVERSITY OF PUERTO RICO
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FACULTY OF NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS

Title: A Restricted Partition Function – Preliminary Report

Speaker: Dr. H. F. Mattson, jr.,
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Abstract

A partition of an integer n is a multiset of positive integers that sums to n. The main question here is: how many partitions of n are there? Same question for restricted partitions, when the multiset is restricted one way or another.

This topic has applications even in quantum physics, also in mathematics. Recommended: A fascinating video on unrestricted partitions for a general audience. Get it by googling Ken Ono Emory lecture.

These partition numbers were studied by Euler, Cayley, Sylvester, and many others down to the present. I have been able to reduce drastically the number of polynomials needed to express the number of partitions of n with parts not greater than, say 7, from the classical 420 to 6 — almost.

The talk will focus on the simplest case, in which $p3(n)$ is the number of partitions of n with parts 1, 2, or 3. The generalization will only be waved at. Applications are to the reduction of the sequence $p3(n)$ mod m: periodicity and the occurrence of zeros.

Wednesday, March 6, 2013
11:30 am - 12:30 pm
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