

1065-11-167

**J. Brandt Kronholm\*** (bkronholm@smcm.edu), Department of Mathematics, 18952 E. Fisher Rd, St. Mary's City, MD 20686-3001. *Ramanujan Congruence Properties of the Restricted Partition Function  $p(n, m)$ .*

Ramanujan-type congruences for the unrestricted partition function  $p(n)$  are known and have been studied in great detail.  $p(n, m)$  is the restricted partition function that enumerates the number of partitions of  $n$  into exactly  $m$  parts.

The relationship between  $p(n)$  and  $p(n, m)$  is clear:

$$p(n) = p(n, 1) + p(n, 2) + \cdots + p(n, n - 1) + p(n, n).$$

Until recently, the existence of Ramanujan-type congruences have been virtually unknown for this function. Let  $\ell$  be any odd prime. In this presentation we will establish explicit Ramanujan-type congruences for  $p(n, m)$  for  $2 \leq m \leq \ell$  modulo any power of that prime  $\ell^\alpha$ . (Received September 12, 2010)