

1116-05-573

**George E Andrews\***, Department of Mathematics, Pennsylvania State University, 306  
McAllister Bldg., University Park, PA 16802. *A Refinement of the Alladi-Schur Theorem.*

In 1926, I. Schur proved that if  $A(n)$  equals the number of partitions of  $n$  into parts congruent to 1 or 5 modulo 6, and  $B(n)$  equals the number of partitions of  $n$  in which any two parts differ by at least 3 and multiples of 3 differ by more than 3, then  $A(n)=B(n)$ . In the 1990's K. Alladi noted that if  $C(n)$  equals the number of partitions of  $n$  into odd parts none repeated more than twice, then also  $C(n)=B(n)$ . We shall consider the following refinement of the Alladi-Schur theorem and its implications: **THEOREM.** Let  $C(m,n)$  denote the number of partitions among those enumerated by  $C(n)$  that have exactly  $m$  parts. Let  $B(m,n)$  denote the number of partitions among those enumerated by  $B(n)$  where the number of odd parts plus twice the number of even parts equals  $m$ . The  $B(m,n)=C(m,n)$ . (Received September 07, 2015)