1047-11-131   **Krishnaswami Alladi*** (`alladik@math.ufl.edu`), Department of Mathematics, 358 Little Hall, University of Florida, Gainesville, FL 32611. *A partial theta identity of Ramanujan and its number theoretic interpretation.*

One of the most celebrated results in the theory of partitions and q-series is Euler's Pentagonal Numbers Theorem whose interpretation is that when the set of partitions into distinct parts of an integer n is split according to the parity of the number of parts, then the two subsets are of equal size except when n is a pentagonal number, in which case the difference is 1. We will interpret a Ramanujan partial theta identity in a similar fashion, but here we are considering partitions into distinct parts with smallest part odd. Ramanujan's identity has an extra parameter which makes it quite deep. We will give a novel proof of this and interpret it as a weighted partition theorem. George Andrews recently showed me another representation for the Ramanujan partial theta series. We will interpret this other representation as a partition theorem and discuss connections with Ramanujan's identity and several fundamental results in the theory of partitions and q-series. Our work has connections with some recent work of Berndt, B. Kim and Yee who drew my attention to the Ramanujan partial theta identity. (Received January 24, 2009)

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