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Bruce C. Berndt and **Amita Malik***, University of Illinois at Urbana-Champaign, and
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G. H. Hardy and S. Ramanujan established an asymptotic formula for the number of unrestricted partitions of a positive integer, and claimed a similar asymptotic formula for the number of partitions into perfect k th powers, which was later proved by E. M. Wright. Recently, R. C. Vaughan provided a simpler asymptotic formula in the case $k = 2$. In this paper, we consider partitions into parts from a specific set $A_k(a_0, b_0) := \{m^k : m \in \mathbb{N}, m \equiv a_0 \pmod{b_0}\}$, for fixed positive integers k , a_0 , and b_0 . Using circle method, we give an asymptotic formula for the number of such partitions, thus generalizing the results of Wright and Vaughan. Moreover, we prove that the number of such partitions is even (odd) infinitely often, which generalizes O. Kolberg's theorem for the ordinary partition function $p(n)$. This is joint work with Bruce C. Berndt and Alexandru Zaharescu. (Received September 20, 2016)