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**James A Sellers\*** ([sellersj@psu.edu](mailto:sellersj@psu.edu)), Department of Mathematics, Penn State University, 104 McAllister Building, University Park, PA 16802. *Arithmetic Properties of  $m$ -ary Partitions Without Gaps.*

Motivated by recent work of Bessenrodt, Olsson, and Sellers on unique path partitions, we consider partitions of an integer  $n$  wherein the parts are all powers of a fixed integer  $m \geq 2$  and there are no “gaps” in the parts; that is, if  $m^i$  is the largest part in a given partition, then  $m^j$  also appears as a part in the partition for each  $0 \leq j < i$ . We will discuss a number of arithmetic properties satisfied by the unrestricted  $m$ -ary partition function, dating back to the 1960s. We then transition to recent work of Andrews, Brietzke, Rødseth, and Sellers who provided a proof of an infinite family of congruences modulo powers of  $m$  which are satisfied by the function which enumerates  $m$ -ary partitions with no gaps. (Received September 09, 2016)