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**Jeremiah Bartz\*** (jeremiah.bartz@und.edu). *Cyclic Patterns in Digital Root Series*. Preliminary report.

Let  $b, n \in \mathbb{Z}_{>0}$  with  $b \geq 2$ . The *base  $b$  digital root* of  $n$ , denoted  $\rho_b(n)$  is defined as the single digit obtained by the addition of the corresponding digits of  $n$  expressed in base  $b$  (and process repeated if needed). The *base  $b$  digital root series*  $\{n_i\}$  beginning at  $n_1 \in \mathbb{Z}_{>0}$  is defined recursively for  $i \geq 2$  by  $n_i = n_{i-1} + \rho_b(n_{i-1})$ . In this talk, we discuss a cyclic pattern observed by V.S. Kumar for  $b = 10$  and its extensions to certain other values of  $b$ . (Received September 09, 2016)