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**Scott T Chapman\*** ([scott.chapman@shsu.edu](mailto:scott.chapman@shsu.edu)), Sam Houston State University, Department of Mathematics and Statistics, Box 2206, Huntsville, TX 77341. *Factorization properties of submonoids of  $\mathbb{Z}$  defined by congruences*. Preliminary report.

Let  $\mathbb{N}$  represent the natural numbers and  $\mathbb{Z}$  the integers. If  $n > 1$  is in  $\mathbb{N}$  and  $\Gamma$  a multiplicatively closed subset of  $\mathbb{Z}/n\mathbb{Z}$ , then the set

$$M_\Gamma = \{n \in \mathbb{N} \mid \bar{n} \in \Gamma\} \cup \{1\}$$

is a multiplicative submonoid of  $\mathbb{Z}$  known as the *Congruence Monoid* determined by  $\Gamma$ . If  $|\Gamma| = 1$ , then  $M_\Gamma$  is called *arithmetic*. This talk will review the extensive work done on factorization properties of these monoids, with an emphasis on the  $M_\Gamma$  which are arithmetic. We will focus on some recent results concerning the catenary degree of arithmetic congruence monoids. (Received September 06, 2016)