1077-13-861 **Alina A Florescu*** (alina-florescu@uiowa.edu), University of Iowa, Department of Mathematics, 14 MacLean Hall, Iowa City, IA 52242. *Generalized Factorization in the Integers.* Preliminary report.

D. D. Anderson and A. Frazier introduced a general theory of factorization in *On a general theory of factorization in integral domains*, Rocky Mountain J. Math. vol. 41, no. 3 (2011), 663-705.

Let D be an integral domain and τ a relation on $D^{\#}$, the set of nonzero nonunits of D. A *(reduced) τ-factorization* of $a \in D^{\#}$ is $a = ua_1 \dots a_n$ where u is a unit ($u = 1$) and whenever $i \neq j$, $a_i \tau a_j$. Then $a \in D^{\#}$ is a *(reduced) τ-atom* if any (reduced) τ-factorization of a has length 1. Also, a is *τ-prime* if $a|ua_1 \dots a_n$, a τ-factorization, implies $a|a_i$ for some i. We are interested in the relation τ_n on $\mathbb{Z}^{\#}$ defined by $a\tau_n b \iff a \equiv b \bmod n$. We consider τ_n- and reduced τ_n-factorizations in $\mathbb{Z}$. (Received September 14, 2011)