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**J B Coykendall** and **B G Goodell\***, bggood@clmson.edu. *Elaborating on homological approaches in factorization.*

An integral domain is atomic if every non-zero non-unit is a product of irreducibles, but arbitrary integral domains cannot be assumed to be atomic. The theory describing factorization in non-atomic domains is not fully mature. We study factorization by studying localizations of arbitrary integral domains using groups of divisibility as a proxies. We construct natural sequences of po-group epimorphisms that peel off layers of atomicity like layers of an onion. We obtain cochain complexes, their associated cohomology groups, and some structure theorems corresponding to a relaxation of the idea of universal factorization. The direct limit of the sequence of po-group epimorphisms is “antimatter” in the sense that it has no minimal positive elements. This leads to the result that every integral domain has an antimatter overring. (Received January 14, 2017)