

1118-13-156

**Jim Coykendall\*** (jcoyken@clemson.edu), Department of Mathematical Sciences, Martin Hall O-10, Clemson University, Clemson, SC 29634, and **Stacy Trentham**. *Spontaneous atomicity in polynomial extensions*.

We say that an integral domain is atomic if every nonzero nonunit in the domain can be factored into a (finite) product of atoms. If  $R$  is an integral domain then it is easy to see that if  $R[x]$  is atomic then  $R$  must be atomic, but even in the case of integral domains, it is not completely understood under what conditions  $R[x]$  is itself atomic.

For rings with zero divisors, the situation is worse. There are various definitions of atomicity that all collapse to the standard definition in the case of integral domains. The main focus of this talk (after some background and perspective) will be the presentation of a commutative ring with identity that is not atomic (in fact, it has no irreducibles whatsoever) but its polynomial ring is atomic. (Received January 29, 2016)